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# Distributed Cognition in Medieval and Renaissance Culture

Edited by  
Miranda Anderson and Michael Wheeler

# Distributed Cognition in Medieval and Renaissance Culture

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Michael Wheeler

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## Series Preface

This book, like the series of which it is part, explores the notion that the mind is spread out across brain, body and world, for which we have adopted ‘distributed cognition’ as the most comprehensive term. Distributed cognition primarily draws evidence from philosophy, cognitive science, psychology, linguistics and neuroscience. Distributed cognition covers an intertwined group of theories, which include enactivism and embodied, embedded and extended cognition, and which are also together known as ‘4E cognition’. An overview and explanation of the various strands of distributed cognition are provided in the general introduction.

Distributed cognition can be used as a methodology through which to pursue study of the humanities and is also evident in past practices and thought. Our series considers a wide range of works from classical antiquity to modernism in order to explore ways in which the humanities benefits from thinking of cognition as distributed via objects, language and social, technological and natural resources and environments, and to examine earlier notions that cognition is distributed. Theories of distributed cognition are transformative in terms of how we understand human nature and the humanities: they enable a different way of perceiving our interactions in the world, highlighting the significant role of texts and other cultural artefacts as part of a biologically based and environmentally grounded account of the mind. Theories of distributed cognition offer an opportunity to integrate the humanities and the sciences through an account that combines biologically and culturally situated aspects of the mind. The series illuminates the ways in which past ideas and practices of distributed cognition are historically and culturally inflected and highlights the cognitive significance of material, linguistic and other sociocultural developments. This evidence has the potential to feed back into cognitive science and philosophy of mind, casting new light on current definitions and debates.

Each volume provides a general and a period-specific introduction. The general introduction, which is replicated across all four volumes, aims to orientate readers unfamiliar with this area of research. It provides an overview of the different approaches within distributed cognition and discussion of the value of a distributed cognitive approach to the humanities. The period-specific introductions provide a

more detailed analysis of work in the cognitive humanities in the period covered by the volume, before going on to reflect on how the essays in the volume advance understanding in the humanities via distributed cognition.

The project from which this series emerged provided participants with an online seminar series by philosophers working on various aspects of distributed cognition. These seminars are publicly available on the project's website (<http://www.hdc.ed.ac.uk/seminars>). The seminars aim to help researchers in the humanities think about how ideas in distributed cognition could inform, and be informed by, their work. Four workshops were held in the summer of 2015 at the University of Edinburgh and were attended by nearly all the volume contributors. The workshops brought participants together to collaborate in ways that contributed not just to the making of this series but to the development of this approach to the humanities. From the springboard of the seminar series, through the gathering together of scholars from across a range of disciplines and by ongoing interaction with the editorial team during the production of the final essays, the aim has been to provide a set of rigorous analyses of historical notions of distributed cognition.

The series is deliberately exploratory: the areas covered by the essays are indicative of the benefits of the general approach of using distributed cognition to inform cultural interpretations. The first four volumes of the series concentrate primarily on Western Europe; however, we envisage further future volumes that will expand the scope of the series. If distributed cognition is understood as we contend, then this understanding has the potential to be valuable across the humanities as part of a new type of intellectual history. The four volumes are arranged chronologically and each of the volumes is edited by a period specialist (Cairns, Anderson, Rousseau, Garratt), a philosopher (Wheeler or Sprevak), and Anderson, whose central involvement in all four volumes ensured overall consistency in approach and style. At the very moment when modern-day technological innovations reveal the extent to which cognition is not just all in the head, this series demonstrates that, just as humans have always relied on bodily and external resources, we have always developed theories, models and metaphors to make sense of the ways in which thought is dependent on being in the world.

## **Acknowledgements**

This series emerged from the project 'A History of Distributed Cognition' (2014–18), funded by the Arts and Humanities Research Council (AHRC), whom we should like to thank most warmly for their support. The idea for the project first came about in 2010. Miranda Anderson realised that the resonances she was exploring between recent ideas on distributed cognition and Renaissance notions of the mind were not just a matter of a correlation between two points in time, but reflected an important aspect of the mind in history that has been neglected, one that, fittingly, might be best explored through a collaborative project. Our interdisciplinary team has worked closely together developing the project, the monograph series and this general approach to the humanities: ours has been an intellectual

endeavour akin to Hutchins's description of a ship's crew successfully navigating by means of collective computation (1995). With Douglas Cairns as Principal Investigator and the core project team of Miranda Anderson, Mark Sprevak and Michael Wheeler, we have collaborated closely both between ourselves and with other scholars. For volumes 3 and 4 respectively, the editorial team were joined by period specialists George Rousseau and Peter Garratt, who helped shape these volumes. Boleslaw Czarnecki, research assistant on the project during 2016–17, helped liaise with contributors and with the organisation of public engagement activities during this time. We were fortunate to have had two excellent auditors, in the shape of Terence Cave and Tim Crane, who used their years of accumulated experience and wisdom to help monitor our progress. Our advisory board offered expertise from across a wide spectrum of academic disciplines: Andy Clark, Giovanna Colombetti, Christopher Gill, David Konstan, Karin Kukkonen, Duncan Pritchard, Andrew Michael Roberts and Patricia Waugh. We are very grateful to the philosophers who came on board to provide us with the online seminars and joined us in online discussion: Andy Clark, Giovanna Colombetti, Shaun Gallagher, John Sutton, Deb Tollefsen, Dave Ward, Dan Zahavi, as well as our own Michael Wheeler. The editors would also like to thank those scholars (John Bintliff, Mary Crane and Gary Dickson) who made valuable contributions to the second project workshop but whose papers could not for various reasons be included in the final volume.

The editorial team is especially grateful to Duncan Pritchard and Eidyn, the University of Edinburgh's Philosophy Research Centre, for their support of a pilot of this project in 2012–13. The Balzan Project, 'Literature as an Object of Knowledge', led by Terence Cave, also kindly supported the project, providing funds for the images on our website. The project has benefited from the involvement of many of the participants from the Balzan Project in our workshops and volumes including Guillemette Bolens, Terence Cave, Mary Crane, Jennifer Gosetti-Ferencei, Karin Kukkonen, Raphael Lyne, Emily Troscianko, and our own Miranda Anderson. Meanwhile, the AHRC-funded Cognitive Futures in the Humanities Network (2012–14), co-led by Peter Garratt, with Michael Wheeler as a founding steering-committee member, has also fostered further productive interactions and cross-fertilisation.

We warmly thank the National Gallery of Scotland for helping us to source and secure our website images. The National Museum of Scotland (NMS) was our supportive project partner, and NMS staff met with the team to discuss and assist with the development of public engagement activities. These activities included a series of recorded public lectures, during which museum curators and academics provided their perspective on the cognitive implications of museum artefacts. Malcolm Knight, the multitalented man behind the Scottish Mask and Puppet Centre, illustrated the cognitive dimensions of masks and puppets and provided much entertainment during one of the NMS lectures. NMS also provided us with their classrooms for our school workshops. Lisa Hannah Thompson was an invaluable contributor to the development of our ideas on how best to shape the material and

the programme for children in order to connect in fun and effective ways. Miranda Anderson would like to thank the Institute for Advanced Studies in the Humanities (IASH) at the University of Edinburgh, where she was based while working on this volume. Finally, we are grateful to our copy-editor, Cathy Falconer, for her consistently sharp-eyed attention to detail and to Edinburgh University Press for their support throughout the process.

### **Editorial Notes**

Contributors have been allowed to follow their own preferences with regard to the use of original spelling and capitalisation in primary texts. The editors have sought to impose consistency within rather than between chapters.



Plate 1 *The Crucifixion and the Death of Christ*, the Company of Butchers in partnership with the Parish Church of St Chad on the Knavesmire. Directed by Tom Straszewski. Image © T. Haddad, July 2014.





Plate 2 *The Crucifixion and the Last Judgement* diptych, Jan van Eyck, c. 1430.  
Image © The Metropolitan Museum of Art, New York.



Plate 3 Mask of Arlecchino: recent reconstruction. Private collection.





Plate 4 Federico Zuccaro, *Taddeo Leaving Home*, c. 1595. Pen and brown ink, brush with brown wash, over black chalk and touches of red chalk. Digital image courtesy of the Getty's Open Content Program.



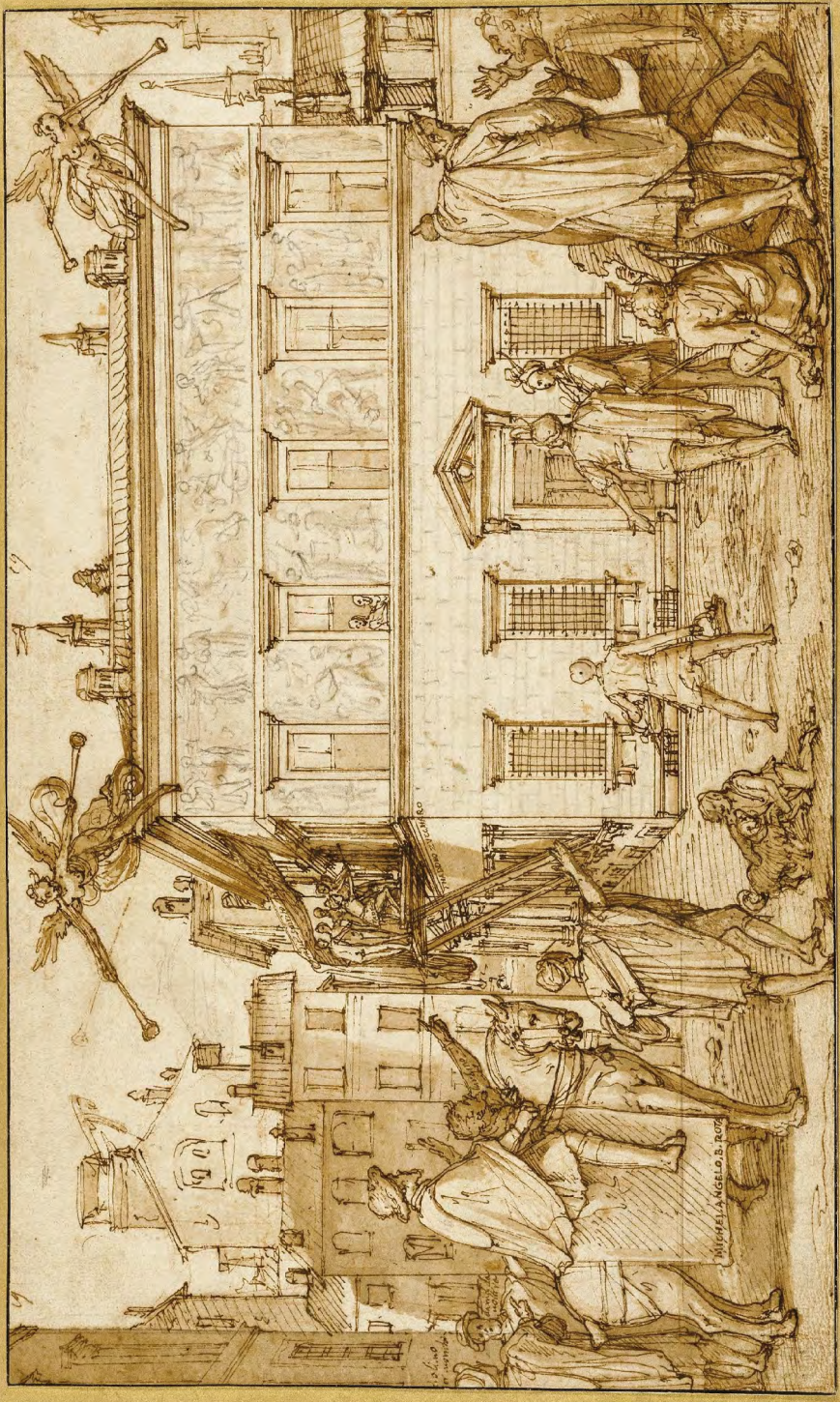


Plate 5 Federico Zuccaro, *Taddeo Decorating the Facade of the Palazzo Mattei*, c. 1595. Pen and brown ink, brush with brown wash, over black chalk and touches of red chalk. Digital image courtesy of the Getty's Open Content Program.





(a)

Plates 6a and b *Livre de Fauvel*, Paris, BnF fr. 146, fols. 10v–11r. © Bibliothèque nationale de France, Paris.

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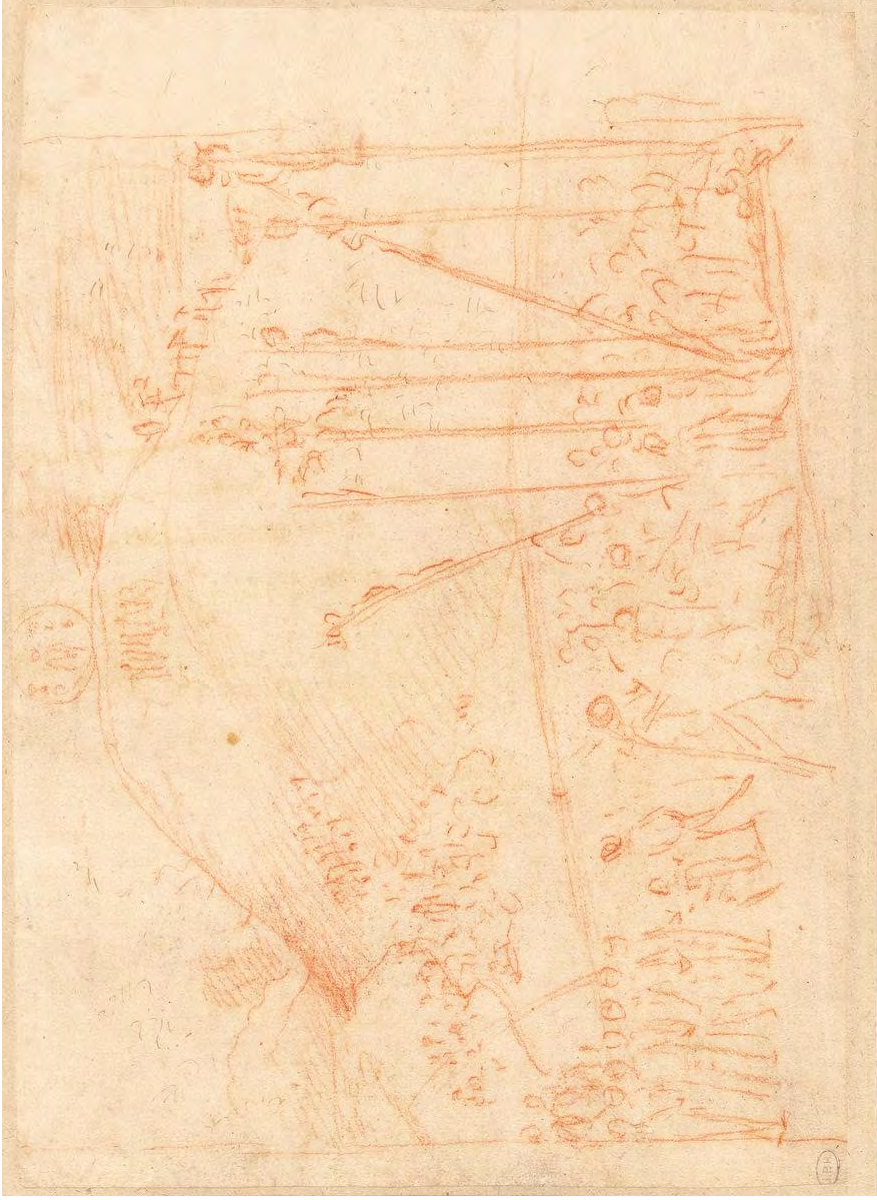


Plate 7 Vittore Carpaccio, *The Martyrdom of the Ten Thousand*, c. 1514. Red chalk on laid paper, with unrelated short pen strokes. Image courtesy of the National Gallery of Art, Washington.

# Distributed Cognition and the Humanities

*Miranda Anderson, Michael Wheeler and Mark Sprevak<sup>1</sup>*

Consider counting on your fingers; or solving a challenging mathematical problem using pen and paper (or Napier's bones, or a slide-rule); or the way in which we routinely offload the psychological task of remembering phone numbers on to our ubiquitous mobile phones; or a brainstorming scenario in which new creative ideas emerge from a process of collective group interaction; or the manner in which the intelligent feat of ship navigation is realised through a pattern of embodied, information-communicating social exchanges between crew members who, individually, perform purely local information-processing tasks (such as bearing taking) using specialised technology. All of these examples of brain-body-world collaboration are, potentially at least, instances of the phenomenon that, illuminated from a historical perspective, is the topic of this volume. That phenomenon is *distributed cognition*.

So what, precisely, is distributed cognition? The term itself is standardly traced to the pioneering work of the cognitive anthropologist Edwin Hutchins (see, canonically, Hutchins 1995, from where the example of ship navigation is taken). However, in using this introduction to sketch the conceptual background for the chapters that follow, we shall adopt an understanding of distributed cognition that arguably diverges somewhat from Hutchins's own (for one thing, we make no demand that the target elements, whether located inside or outside the brain, should be understood as representational media; see e.g. Hutchins 1995: 373). Here we are aiming for a general and inclusive notion of cognition alongside a general and inclusive notion of what it means for cognition to be distributed. Thus the term 'cognition' should be understood liberally, as it routinely is in the day-to-day business of cognitive science, as picking out the domain of the psychological, where that domain encompasses phenomena that we often identify using

<sup>1</sup> We warmly thank Douglas Cairns for his assistance with this chapter. The authors would also like to thank the participants in a workshop at the University of Edinburgh in June 2017 who provided feedback on an earlier draft of this chapter: Felix Budelmann, Peter Garratt, Christopher Gill, Elspeth Jajdelska, Karin Kukkonen, Adam Lively, Andrew Michael Roberts, George Rousseau, William Short, Jan Söffner, Eleanore Widger and Clare Wright.

terms such as mind, thought, reasoning, perception, imagination, intelligence, emotion and experience (this list is not exhaustive), and includes various conscious, unconscious-but-potentially-conscious, and strictly non-conscious states and processes. Given this broad conception of what cognition is, cognition may be said to be distributed when it is, in some way, *spread out* over the brain, the non-neural body and (in many paradigm cases) an environment consisting of objects, tools, other artefacts, texts, individuals, groups and/or social/institutional structures. Advocates of distributed cognition argue that a great many examples of the kinds of cognitive phenomena identified above (reasoning, perception, emotion, etc.) are spread out in this way.

To see why the notion of distributed cognition has attracted so much attention, here's a way of thinking about how the contemporary discourses stationed in and around cognitive science arrived at what might justifiably, in the present context, be called the received (non-distributed) view of mind. Although the very brief history lesson that follows involves the odd caricature, it is surely broadly accurate. According to the much-maligned substance dualists (the most famous of whom is arguably Descartes), mind is a non-physical entity that is metaphysically distinct from the material world. Here the material world includes not only the external tools and artefacts that human beings design, build and use, but also the thinker's own organic body. On this model, the minds of other people become peculiarly inaccessible, and indeed one's indirect knowledge of those minds, such as it is, seems to result from a precarious analogy with the correlations between thought and action in one's own case. For this reason, plus a whole battery of others – some scientific, some philosophical – substance dualism is now officially unpopular in most of the relevant academic circles. Indeed, in the twentieth and twenty-first centuries, mind has been placed firmly back in the material and social world. Or rather, it has been placed firmly in a particular segment of that world, namely the brain.

As apparently demonstrated by all those 'pictures of the brain thinking' that we regularly receive from functional magnetic resonance imaging (fMRI) scans and the like, the received view is now that the brain is where the cognitive action is. This neuro-centric orthodoxy is not an irrational position. Indeed, there is no doubt that many a good thing has come out of research programmes in psychology, neuroscience and elsewhere which embrace it. Nevertheless, the contemporary distributed cognition perspective is usefully depicted as a reaction against neuro-centrism's (allegedly) distorting influence. To be clear, no advocate of distributed cognition believes that the brain is somehow unimportant. Rather, (part of) the proposal is that to understand properly what the brain does, we need to take proper account of the subtle, complex and often surprising ways in which that venerable organ is enmeshed with, and often depends on, non-neural bodily and environmental factors, in what is the co-generation of thought and experience.

One consequence of adopting a general and inclusive notion of distributed cognition is that there turns out to be more than one version of the idea from which to choose when developing the view. How, then, may we articulate the notion

further? One taxonomic move that is increasingly popular in the literature is to unpack distributed cognition in terms of *4E cognition*, where the four Es in question are *embodied*, *embedded*, *extended* and *enactive*. In other words, it is possible to provide a more detailed picture of distributed cognition by thinking in terms of the four Es and the pattern of symbiotic and sometimes not-so-symbiotic relationships between them. That's what we shall now do, starting with the notion of *embodied* cognition.

According to the hypothesis of embodied cognition, psychological states and processes are routinely shaped, in fundamental ways, by non-neural bodily factors. In a full treatment of this idea, *much* more would need to be said about what the terms 'shaped' and 'fundamental' mean, but for present purposes the motivating thought will do: in order to understand cognition, the structures and forms of the non-neural body need to be foregrounded in ways that are absent from the neuro-centric orthodoxy. From this shared point of departure, the embodied cognition community has become home to a diverse kaleidoscope of projects. Thus embodiment is said to determine or condition the nature of concepts (e.g. Lakoff and Johnson 1980), the character of perceptual experience (e.g. Noë 2004), various factors such as orientation and posture that do not themselves enter into the content of experience, but which preconceptually structure that experience (e.g. Gallagher 2005), and the architectures, assemblages and processing mechanisms that enable intelligent action (in the philosophical literature, see e.g. Clark 1997, 2008; Haugeland 1998; Wheeler 2005).

As just one example of embodied cognition research, consider groundbreaking work in cognitive semantics on the role of embodiment in human sense-making (how we experience the world to be meaningful). Johnson (1987) argues that we experience our bodies fundamentally as three-dimensional containers into which we put things (e.g. food) and out of which things come (e.g. blood). The result is that the metaphor of containment becomes a preconceptual cognitive schema that heavily constrains other contexts of meaning. Thus, building on Johnson's idea, Lakoff (1987) argues that the containment schema, as determined by our human experience of embodiment, even underlies abstract logical structures such as 'P or not P' (inside the container or outside of it). One apparent implication of this approach is that creatures with different experiences of embodiment will possess different preconceptual schemata and thus will inhabit different semantic landscapes.

To the extent that embodiment is grounded in bodily acts, such as, say, the physical manipulations of instruments or tools, embodiment naturally encompasses a rich mode of environmental interaction, which is just to say that there is a natural route from embodied cognition to the second of the four Es, namely *embedded* cognition. According to the embedded view, the distinctive adaptive richness and/or flexibility of intelligent thought and action is regularly, and perhaps sometimes necessarily, causally dependent on the bodily exploitation of certain environmental props or scaffolds. As an illustration, consider the phenomenon that Andy Clark has dubbed *cognitive niche construction* (e.g. Clark 2008; see also Wheeler and Clark 2008). This occurs when human beings build external structures that, often in



combination with culturally transmitted practices, transform problem spaces in ways that promote, or sometimes obstruct, thinking and reasoning. A compelling example, which Clark sources from Beach (1988), is the way in which a skilled bartender may achieve the successful delivery of a large and complex order of cocktails (a relatively daunting memory task) by exploiting the fact that different kinds of cocktail often come in differently shaped glasses. Bartenders learn to retrieve the correct glass for each drink as it is requested, and to arrange the differently shaped glasses in a spatial sequence that tracks the temporal sequence of the drinks order, thus transforming a highly challenging memory task into a simpler (roughly) perception and association task. This reduces the burden on inner processing by exploiting a self-created environmental structure according to a culturally inherited social practice.

Of course, as indicated in the definition given of cognitive niche construction, not all cases of the environmental scaffolding of cognition will result in enhanced performance. The background picture here is of ‘our distinctive universal human nature, insofar as it exists at all, [as] a nature of biologically determined openness to deep, learning- and development-mediated, change’ (Wheeler and Clark 2008: 3572) and thus, given a technologically saturated environment, of human organisms as what Clark (2003) calls *natural born cyborgs*, creatures who are naturally evolved to seek out intimate unions with non-biological resources. Overall, the ongoing operation of this evolved tendency has yielded myriad adaptive benefits, but sometimes the couplings that result will be adaptively neutral, inappropriate or dysfunctional. This observation points to an important vein of research on how ideas that are central to distributed cognition can contribute to areas such as psychopathology (e.g. Gallagher 2004; Fuchs 2005; Drayson 2009; Sprevak 2011).

Despite the fact that the embedded theorist seeks to register the routinely performance-boosting, often transformative, sometimes necessary, but occasionally obstructive, causal contributions made by environmental elements (paradigmatically, external technology) to many cognitive outcomes, she continues to hold that the actual thinking going on in such cases remains a resolutely skin-side phenomenon, being either brain-bound or (on a less common, more radical iteration of the view) distributed through the brain and the non-neural body. By contrast, according to the advocate of *extended* cognition, it is literally true that the physical machinery of mind itself sometimes extends beyond the skull and skin (see, canonically, Clark and Chalmers 1998; for a collection that places the original Clark and Chalmers paper alongside a series of criticisms, defences and developments, see Menary 2010). More precisely, according to the hypothesis of extended cognition, there are actual (in this world) cases of intelligent thought and action, in which the material vehicles that realise the thinking and thoughts concerned are spatially distributed over brain, body and world, in such a way that certain external factors are rightly accorded fundamentally the same cognitive status as would ordinarily be accorded to a subset of your neurons. Thus, under the right circumstances, your mobile phone *literally* counts as part of your mnemonic machinery, alongside some of your neurons.

To bring home the distinction between embedded and extended cognition, as we have just introduced it, consider the example of a mathematical calculation achieved, in part, through the bodily manipulation of pen and paper. For both the embedded and the extended view, what we have here is a brain-body-pen-and-paper system involving a beyond-the-skin element that, perhaps among other things, helps to transform a difficult cognitive problem into a set of simpler ones (e.g. by acting as storage for intermediate calculations). For the embedded theorist, however, even if it is true that the overall mathematical problem could not have been solved, at least by some particular mathematician, without the use of pen and paper, nevertheless the external resource in play retains the status of a non-cognitive aid to some internally located thinking system. By contrast, for the advocate of the extended view, the coupled system of pen-and-paper resource, appropriate bodily manipulations, and in-the-head processing may itself count as a cognitive architecture, even though it is a dynamically assembled (rather than hard-wired) and essentially temporary (rather than persisting) coalition of elements. In other words, each of the differently located components of this distributed (over brain, body and world) multi-factor system enjoys cognitive status, where the term ‘cognitive status’ should be understood as indicating whatever status it is that we ordinarily grant the brain.

Here it is worth pausing to note that, in the distributed cognition literature, one can certainly find the term ‘extended cognition’ being given a less specific reading than we have just suggested, a reading which is tantamount to the interpretation we have adopted here of the term ‘distributed cognition’, and which thus encompasses embedded cognition and (at least many forms of) embodied cognition. This liberal usage is not negligent. For one thing, the boundary between internal and external is, in some contexts, fixed by the skin – in which case gross bodily forms count as internal – while in others it is fixed by the limits of the brain or central nervous system – in which case gross bodily forms count as external. On the latter view, at least some forms of embodied cognition would count as cases of extended cognition. For another thing, given certain projects and purposes, the distinction between being a non-cognitive but performance-boosting scaffold and being a genuine part of one’s mental machinery may be a distraction, even if it is metaphysically legitimate. Nevertheless, it does seem clear that if one uses the term ‘extended cognition’ in the more inclusive way, one will need to find a different term for the case of what we might identify as metaphysical or constitutive extension (‘strictly extended’ maybe). Otherwise one will risk succumbing to what extended cognition theorists call cognitive bloat, an undesirable outcome in which one is forced to concede all sorts of mundane and unexciting cases of causal coupling between inner and external elements to be cases of extended cognition, thus generating a wildly counter-intuitive position. It looks, then, as if there is a genuine argument to be had over whether it is possible to make the transition from embodied-embedded cognition to extended cognition. And, indeed, this is a complicated and contested area (to sample just a small subset of views and the sometimes ill-tempered debate, see e.g. Rowlands 1999, 2010; Menary 2007, 2010; Adams and Aizawa 2008; Clark

2008; Rupert 2009; Sprevak 2009; Sutton 2010; Wheeler 2010a). And it is possible that there won't be a universal resolution. That is, it may be that while some cognitive phenomena reward an extended treatment (leading candidates might include memory, reasoning and problem-solving), others will not. There is, for example, an ongoing debate over the credentials of extended consciousness (Hurley and Noë 2003; Noë 2004; Clark 2009; Hurley 2010; Ward 2012; Wheeler 2015).

Our final 'E' is *enactive*. In the most general terms, a position is enactivist if it pursues some version of the claim that cognition unfolds (is enacted) in looping sensorimotor interactions between an active embodied organism and its environment. For the enactivist, then, cognition depends on a tight and dynamic relationship between perception and action. Enactivism also tends to foreground the disciplined examination of lived experience as a methodological tool in cognitive theory. This leads many enactivists to draw on the phenomenological philosophical tradition, as represented centrally by thinkers such as Husserl, Heidegger and Merleau-Ponty, a tradition which concentrates on the structures of, and the conditions for, lived experience. This productive engagement with phenomenology is especially prominent in relation to the enactivist understanding of the body not simply as a physical mechanism, but as a lived structure through which the world is experienced. (Although enactivism foregrounds phenomenology more so than the other branches of distributed cognition, that is not to say that it has a monopoly on phenomenology's insights and conceptual machinery; see e.g. Gallagher 2005; Wheeler 2005; Zahavi 2014 for essentially non-enactivist yet systematic appeals to phenomenology, in and around the distributed cognition literature.)

The two most common forms of enactivism are sensorimotor enactivism (e.g. O'Regan and Noë 2001; Noë 2004) and autopoietic enactivism (e.g. Varela et al. 1991; Di Paolo 2005; Thompson 2007), although another recent, and increasingly important, variant that we shall not discuss here is the so-called radical enactivism of Hutto and Myin (2012). Sensorimotor enactivism is rooted in the thought that perceptual experience is constituted by implicit knowledge of so-called sensorimotor contingencies – the law-like effects that either my movement or the movements of objects in my sensory field have on the sensory input that I receive – where the implicit knowledge in question is to be understood in terms of the possession and exercise of certain bodily skills. Thus consider my visual perception of a tomato. Although my visual access to that entity is aspectual (there is an obvious sense in which, given my embodied spatial perspective, I have visual access only to certain portions of it), my ordinary experience is nevertheless of the tomato as an intact, solid, three-dimensional object. As one might put it, the tomato's hidden-from-perspectival-view aspects are nevertheless experientially present to me. According to the sensorimotor enactivist, this is explained by my implicit mastery of the relevant sensorimotor contingencies – very roughly, the visual inputs my eyes would receive if I moved around the tomato, or if I turned it, or if it span round. This implicit sensorimotor knowledge is constitutive of my perceptual experience.

Autopoietic enactivism is based on the idea that cognition is a process of sense-making by adaptively autonomous systems, where an autonomous system

is a network of interdependent processes whose recurrent activity (a) produces and maintains the very boundary that determines the identity of that network as a unitary system, and concurrently (b) defines the ways in which that system may encounter perturbations from what is outside it while maintaining its organisation. A system is adaptively autonomous when it is able to alter its behaviour in response to changes in its environment in order to improve its situation, for example by sensorimotor activity. To illustrate this with an example that the autopoietic enactivists themselves often use, bacteria sense and swim towards the environmental area containing the greatest concentration of glucose molecules. Thus, as a consequence of the specific metabolically realised autonomy of the bacteria, glucose emerges as – is brought forth as – significant for those organisms as food. As this example nicely illustrates, autopoietic enactivism is distinctive in forging a close connection between life and mind (cognition). As Thompson (2007: 128) puts it: ‘life and mind share a set of basic organizational principles, and the organizational properties distinctive of mind are an enriched version of those fundamental to life. Mind is life-like and life is mind-like.’

One effect of enactive life-mind continuity is to place affective phenomena such as emotions and moods at the very centre of the cognitive stage. As the glucose example highlights, enacted significance is fundamentally a matter of valence, that is, of being appropriately attracted and repelled by environmental factors that might improve or diminish organisational integrity. In this way, these factors are things that the organism *cares* about. This is the enactive root of affectivity. (For a developed enactive account of emotional episodes as self-organising patterns of the whole embodied organism, see Colombetti 2014.) More generally, a 4E-friendly treatment of affective phenomena will tend to reject a commonly held view in the psychology of emotions according to which there is a neat distinction between the cognitive components of emotions (e.g. the appraisal of a situation in relation to one’s well-being) and their bodily components (e.g. arousal and facial expressions). For the advocate of embodied emotions, appraisal is itself a phenomenon that is spread out over both neural and non-neural bodily factors (see, again, Colombetti 2014). In the background here is Damasio’s (e.g. 1999) influential notion of somatic markers, i.e. specific feelings in the body that accompany specific emotions (e.g. nausea with disgust) and which strongly shape subsequent decision-making. A more controversial application of 4E thinking in the vicinity of affective phenomena is the claim that such phenomena may be extended beyond the skin of an individual, either over artefacts such as musical instruments (see e.g. Colombetti and Roberts 2015) or over other people (see e.g. Slaby 2014; Krueger and Szanto 2016).

This final point brings us neatly to the issue of the social dimension of the 4E mind. Consider three possible ways in which cognition might be socially distributed:

1. I think some of the thoughts I think because, or perhaps only because, I am part of a particular social group.
2. My cognitive states or processes are socially as well as technologically extended,

such that some of my cognitive machinery is located partly in the brains of other people.

3. Groups may have minds in much the same way that individuals have minds.

Option 1 is perhaps most naturally understood as an embedded view according to which some psychological capacities realised wholly by neural states and processes are nevertheless manifested only in certain kinds of social circumstances, because they are socially scaffolded by those circumstances. Option 2 is the social version of the hypothesis of extended cognition. Consider Tom and Mary, a couple with a long and interdependent relationship. Perhaps Tom might come to trust, rely on and routinely access information stored in Mary's brain, in such a way that, in certain contexts, her brain comes to play essentially the same role as his own neural resources, and thus constitute a repository of his memories (cf. Clark and Chalmers 1998). Both option 1 and option 2 may count as versions of what Wilson (2005) calls the social manifestation hypothesis, which maintains that cognition remains a 'property of individuals, but only insofar as those individuals are situated or embedded in certain physical environments and social milieus'. By contrast, option 3 shifts the ownership of the relevant psychological states and processes from the individual to the group. According to 3, the group mind hypothesis, we should take at face value statements such as 'the team desires a victory' and 'the crowd thinks the game is over'. Whole groups, and not merely the individuals out of which those groups are constructed, may non-metaphorically be attributed with beliefs, desires, other psychological states and processes of reasoning (for versions of this view, see e.g. Huebner 2014; Tollefsen 2006). As one might imagine, much of the philosophical debate in this area concerns the conditions and circumstances under which it would be correct to adopt either option 2 or option 3, both of which might, to our modern thinking at least, seem counter-intuitive or, from a theoretical perspective, metaphysically profligate (for an argument for the latter conclusion, see e.g. Rupert 2014). But even the seemingly less radical option 1 constitutes a prompt for a careful examination of the distributed causal mechanisms and social contexts that drive the processes concerned.

Two further modulations of social cognition, when developed in a 4E register, bring out a final way in which the distributed perspective changes the shape of the received theoretical terrain. It has become a commonplace view in the psychology of social cognition that we navigate our social spaces either by predicting and explaining one another's observable behaviour using what is tantamount to a commonsense theory of the hidden inner causes of that behaviour – the beliefs, desires and other mental states inside other people's heads – or by predicting and explaining that behaviour by internally simulating what we ourselves would think and experience in the same circumstances, in order to produce the same behaviour. On either of these models, and partially echoing the Cartesian dualism of days gone by (see above), our access to the mental states of the other person is fundamentally *indirect*, involving inference or simulation. However, some distributed cognition theorists (e.g. Gallagher 2008), drawing centrally on phenomenology, argue that

our grasp of the mental states of another person with whom we are in perceptual contact is ordinarily *direct*, in that, rather than, for example, inferring another person's joy from some of her facial movements, we see that joy directly, in her laughter. Relatedly, but moving away even further from the conventional assumption that a theory of social cognition should begin with a conception of people as isolated spectators, a distinctively enactive account of social cognition has emerged in the form of the *participatory sense-making* approach (De Jaegher and Di Paolo 2007). This approach begins with a conception of people not as spectators, but as engaged participants, and focuses on the ways in which individuals interactively coordinate their movements and utterances in social situations. For participatory sense-making theorists, the interaction process itself can come to exhibit an enactive form of autonomy (see above), one that is generated by, but also constrains and scaffolds, the activity of the interacting individuals. The alleged directness of social cognition is grounded in the fact that we are so proficient at social interaction that the interactive process becomes transparent to us (De Jaegher 2009).

This section has surveyed views that fall under the general heading of 'distributed cognition'. What these views have in common is that they accord some kind of special role to the environment (perhaps including the bodily environment or social environment) that is missing in the traditional Cartesian or in more recent neuro-centric cognitive theories. More to the fore in this introduction, however, is the *diversity* of views within the distributed cognition camp. We have seen that distributed cognition can roughly be split into 4 Es (embodied, embedded, extended and enactive) with each 'E' admitting of further, sometimes competing, articulations in the hands of different philosophers and cognitive scientists (we have already met two kinds of enactivism). Philosophers and cognitive scientists who work in this area often adopt what might appear to be a mix-and-match approach: they accept some 'distributed' claims but reject others. Moreover, they may accept a different combination of distributed (or non-distributed) claims about different parts of human mental life: some aspects of our mental life (perhaps our feelings of joy and pain) may be treated as purely internal while others (perhaps some of our memories and decision-making) are distributed. A further complication is that, even if attention is restricted to a single aspect of human mental life, a distributed theorist may give a different distributed/non-distributed answer for different human subjects in different environmental contexts at different times (some humans are more inclined than others to distribute their memory on to external devices).

How should researchers in the humanities make sense of all this disagreement and diversity within the distributed cognition camp? We suggest that they cut through philosophical disagreements and explore the specific combination of distributed views that suits their interests. An application of distributed cognition in the humanities should be assessed on its own merits. A specific combination of 'distributed' views may prove more or less fruitful to understanding a particular historical phenomenon. And different combinations of 'distributed' views may prove suited to different historical phenomena.

There is no reason why a single, one-size-fits-all approach should be adopted.

The merits of a particular combination of distributed views, in a particular historical setting, should be based on its pay-off for our understanding in the humanities. We hope that the essays in the volume demonstrate both the value and the diversity of conceptual tools offered by a distributed cognition approach.

## **Distributed Cognition and the Cognitive Turn**

The question of how new insights into the nature of the mind illuminate our understanding of being human and our engagement with the world is one of the greatest issues facing the current generation of humanities scholars. Knowledge that is emerging from cognitive science and neuroscience, along with related research in disciplines such as philosophy, psychology and linguistics, casts a new light on issues that are central to the humanities, and enables us to better explain the nature of forms of human culture and how and why they emerge and evolve. Knowledge from the sciences can help to make a case for culture's significance to being human. In turn, the humanities provide an archive of examples concerning how humans develop in a range of environments and evidence diverse ways in which we use and create resources as means to extend our capacities. This section provides a general overview of the emergence of the cognitive humanities and considers how distributed cognition interrogates and supplements existing humanities methodologies.

In spite of the humanities' increasing interdisciplinarity since the late 1950s, the long-standing disciplinary antagonism between the arts and sciences continues (Snow 1993; Leavis 1962; Ortolano 2005). This tension is now further exacerbated by wider movements towards education's commodification, quantification and rebranding as merely employment-based training, with accompanying questions about the relevance and value of the arts and humanities (Collini 2009; M. C. Nussbaum 2010). The defensive response by many in the humanities has been to fall back on claims about the qualitative and irreducible nature of aesthetic values in the humanities and to view humanities scholars who draw on scientific knowledge as reductionists.<sup>2</sup> The presumption is that scientific knowledge entails a constraint on, and a diminution of the value of, their own complex material and methodologies, rather than adding a further perspective. Yet, even for the hard problem of consciousness – that is, the way it feels to be me or you – philosophers draw on insights from neuroscience. There is no reason why questions about the qualitative nature of our experience of cultural artefacts cannot be addressed, even if not solved outright, by neuroscientific insights. Moreover, a broad-based approach that draws not just on the mind's neural basis, but on the whole range of the human mind as evidenced in cultural texts and practices, seems likely to provide us with the fullest insights into these enduring questions.

Phenomenology has influenced both philosophers focusing on culture or lan-

<sup>2</sup> As Helen Small describes, 'the humanities value qualitative above quantitative reasoning' (2013: 57). Raymond Tallis (2011) provides an example of the anti-scientific bent with his dismissal of a focus on the physical aspects of being human as 'neuromania' or 'Darwinitis'.

guage (so-called ‘continental’ philosophers, such as Foucault, Derrida and Lacan) and models (in particular enactivism) that attempt to conceptualise scientific evidence of distributed cognition. However, in cultural studies phenomenological ideas became entangled with a tendency towards relativism, as part of a backlash against earlier humanist or structuralist notions of culture as revealing universal human attributes and values. Throughout history, oscillating drives towards universalism and relativism often culminate in polarised models, or one extreme sets the pendulum swinging back to the other extreme. In recent decades literary, historical and cultural criticism have focused on various kinds of postmodern relativism and social constructivism which resist anything interpretable as ‘facts’, ‘truth’ or ‘reality’ and in which human bodies are presented as merely cultural constructs (the tendency is notable in new historicism, cultural materialism and feminist, queer and globalisation studies). From classical antiquity onwards, there have been those who have questioned the extent of our access to a mind-independent world: from Plato’s shadow-watchers in the cave, to Descartes’s sceptical *cogito ergo sum*, to more recent thought experiments suggesting that our experience might be the same were we brains in a vat, to Bayesian predictive coding models, which some internalist-minded philosophers argue are a basis for assuming that cognition is skull-bound, so that ‘conscious experience is like a fantasy or virtual reality’ (Hohwy 2013: 137).

Early artificial intelligence and cybernetics influenced both cognitive scientists and the continental philosophers who in turn have informed cultural theory. Lacan, for instance, discussed the influence that cybernetics had on him, though in his dark version, humans become the processed rather than the processor: ‘It is the world of words which creates the world of things . . . Man speaks therefore, but it is because the symbol has made him man’ (Lacan 1981: 39). Higher-level shifts in norms of understanding and focus cascade down, and so shape and are reshaped by disciplines into idiosyncratic manifestations of the higher-level propensities into which (along with many other factors) they feed back. The linguistic turn in the humanities in the 1970s and 1980s argued that language consisted of a system of codes, with words caught up primarily in their relation to other words, with a consequent endless deferral of meaning and a disconnectedness to referents in the world. At the same time, classical cognitive science described cognition as occurring through computational manipulation of internal symbols. Such theories emphasised the role of arbitrary, abstract syntactic structures at the expense of attention to the emergence of meaning through our engagement in the world.

More recently, Daniel Dennett suggested that ‘A scholar is just a library’s way of making another library’ (1991: 202). This may seem to relate straightforwardly to Lacanian-type claims. Dennett himself has commented on the correspondences between these ideas and postmodern deconstructionism (410). However, Dennett reaches his suppositions through biologically grounded or organically inspired notions, such as memes, an idea developed by Richard Dawkins (who coined the term) to describe units of cultural transmission akin to genes as units of biological transmission (202–3). In contrast to such biologically grounded accounts,



prevailing postmodern methodologies have argued that sociocultural forces are entirely responsible for human concepts and behaviour. For example, the elision of the physical body is evident in Judith Butler's claim that 'gender is a performance that produces the illusion of an inner sex' (1998: 728). Whilst such accounts make visible sociocultural influences on biological categories, their rebuttal of the hegemony of the natural world and of the fixed nature of biological categories is problematic to the extent that it simply inverts the relationship and asserts the dominance of sociocultural forces over the realm of the natural and physical. The significant difference between a postmodern stance and Dennett's viewpoint is highlighted by his concluding comment that 'I wouldn't say there is nothing outside the text. There are for instance all the bookcases, buildings, bodies, bacteria ...' (1991: 411).

Embodied cognition – that is, the notion that our physical bodies enable and constitute cognitive processes – presents a greater challenge to postmodern accounts than do claims about its extended nature. Furthermore, distributed cognitive models make evident that the mind's embedded or extended nature is not simply a matter of unconstrained cultural determinism. The elision of the physical body and world in postmodern accounts helps to perpetuate an apparent conflict between the arts and sciences that risks miring notions of being human (and the humanities) in isolated idealism. The recent rise of digital humanities, despite its use of distant reading and quantitative analyses,<sup>3</sup> might be explained in part by technological advancements. These advancements massively increase the ways in which we can creatively use programs and technologies to inform and study our interaction with texts and artefacts. However, its rise may also be due to a theoretical tendency towards the virtual and virtualisation, with an over-emphasis on the distinctiveness of human nature as arising from meta- or trans-physical capacities, a tendency which has been evident throughout history in idealist accounts of human nature (Hayles 1999; Nusselder 2009). As part of a countermovement in the humanities today, there is a shift towards the study of material culture, with a renewed focus on specific physical objects, physical environments and ecological contexts.

We also find elision, if not of the physical body as a whole, then at least of the significance of the specifics of it, in some more functionalist accounts of the extended mind. Andy Clark accuses thinkers such as Damasio of biochauvinism because of the essential role they ascribe to the body in cognition. Instead, Clark argues, 'the perceptual experience of differently embodied animals could in principle be identical, not merely similar to our own' (Clark 2008: 193). Clark's functionalist approach allows for the possibility that a non-biological resource can play the same role as a biological one. Yet, elsewhere, Clark emphasises that external resources

<sup>3</sup> Franco Moretti coined the term 'distant reading' to describe the need for a world-scale study of literature, which would draw on other researchers' scholarship, in contrast to the conventional close reading of a small number of canonical texts (Moretti 2000). In his later work, and more generally, the term is now often used to describe the study of literature through data analysis or text-mining of large-scale corpora (Moretti 2013).

need not be functionally identical to internal ones to qualify as extended (1997: 220): a laptop does not store or compute information in the same way as a brain, and it can, for that reason, be useful in supplementing our neural capacities. On Clark's view, there is a question about how much the material nature of a resource matters to how it fulfils its function, and this is important for how we evaluate the significance of different resources – neural, bodily and non-biological ones – in different historical contexts. Our view is that in certain contexts, or while performing certain functions, a difference between human bodies or physical resources may matter; in other cases, it may not be significant. The richer idea that emerges from this perspective is that through differences, as well as similarities, various forms of representational, computational and mnemonic resources can supplement our biological limitations.

We have seen that distributed cognition presents an array of competing and sometimes conflicting theories. This may appear a sign of fragility, but this diversity can be seen as reflecting the ways in which different cognitive models come to the fore in relation to different mental capacities or contexts. Shifting trends and debates about cognitive hierarchies, such as an emphasis on the role of embodiment or on particular methods or resources as extending representational or phenomenological possibilities, can be seen to emerge in relation to the development of, or reaction against, new genres, cultural modes and technological, scientific and sociocultural changes. Therefore, the multifaceted nature of distributed cognition as a theory is, in our view, a strength that reflects the operation of different cognitive norms and modes in the world.

From the late 1980s and 1990s onwards a few 'first-wave' thinkers in the cognitive humanities, primarily based in the US, adopted notions from evolutionary psychology or from cognitive linguistics that emphasised the universal aspects of humans' cognitive and physical characteristics.<sup>4</sup> A particularly influential idea was that humans tend to conceptualise non-physical domains in terms of physical ones, and in contrast to postmodern deconstructionism, this suggested a specific way in which language is embodied. Engagement with these ideas in the humanities challenged existing disciplinary divisions and opened up new ways to think about what human beings have in common and how humans from diverse cultures can have some understanding of one another. Yet both evolutionary-psychological and cognitive-linguistic humanities approaches tend to operate without due attention to the many historical (and geographical) variables involved in cultural, linguistic and literary constructions. Such early cognitive humanities scholars therefore tended to set postmodern and cognitive approaches in irreconcilable opposition to one another. This risked simply repeating within the humanities the persisting methodological tensions between the arts and sciences through the siding of critics with oppositional explanatory paradigms. However, these first-wave thinkers have remained largely on the peripheries of mainstream literary and cultural methodologies, against which some of them tend to situate themselves.

<sup>4</sup> See, for example, Lakoff and Johnson 1980; Carroll 1994; Gottschall and Wilson 2005.

Yet even from the early stages, cognitive humanities scholars drew attention to the benefits of engaging with scientific work on the mind, and not all their efforts were so oppositional. One of the first scholars to adopt a cognitive approach, which he argued was compatible with the more conventional approaches he was already using, was the psychoanalytical literary critic Norman Holland (1988). Most other early adopters of scientific work, models and metaphors as a means to inform our reading of texts in the emerging field of ‘cognitive poetics’ (such as Tsur 1992; Gibbs 1994; Turner 1991, 1996) were influenced by and developed cognitive linguistics’ notion of conceptual schema and argued for the everyday nature of figurative thought and language. There were, however, already outliers such as Ellen Spolsky, who was instead focused on reapplying the then fashionable theory of the modular mind to her analysis of literary texts as a means of engaging with poststructuralism (1993).

Distributed cognition suggests another perspective to universalising models, one that takes account of the way in which embodiment is a crucial aspect of our extendedness, since it is our biological nature that enables us to incorporate socio-cultural and technological resources into our cognitive systems. The significance of the human body arises also from its capacity for engagement and interaction. The dynamic cognitive roles of linguistic, sociocultural and technological resources are made possible by neurological plasticity.<sup>5</sup> This raises the possibility that social constructivist models may have a neurological basis, as our ability to be (at times transparently) constructed by sociocultural forces relates to the adaptability of the human brain. At the same time, human adaptability and extendedness temper any notion of universal communal features shared across all humans that could be based on embodiment. While humans exhibit certain enduring biological characteristics, these characteristics dynamically interact with our sociocultural and environmental contexts. Together these lead to the manifestation of different kinds of minds and to the expression or suppression of particular forms of cognitive paradigms. This perception enables a reassessment of polar representations of the mind as either fixed and universal or as socially constructed and culturally relative – two models which have constrained understandings of historical, as well as modern, concepts of the mind. Humans are particularly talented not just at evolutionarily adapting to niches, but also at adapting our niches to supplement our cognitive and other needs (Wheeler and Clark 2008). While humans’ capacity to exist within cognitive niches, with ongoing reciprocal interactions between niches and organisms, is shared across generations, these niches also reflect technological and socio-cultural developments; ultimately, rather than either universalism or relativism, this implies that we shall find a rich combination of shared features and particular divergences across history and cultures.

The paradigm of distributed cognition provides a middle way between relativ-

<sup>5</sup> For just a few works that discuss neurological plasticity and adaptivity, see Ramachandran and Ramachandran 1996; Berti and Frassinetti 2000; Maravati and Iriki 2004; Gallagher 2005; Rizzolatti and Sinigaglia 2008; Clark 2008.

ism and universalism by highlighting the vital roles played by both physical and cultural resources in cognition. As a methodology, this provides a potential strategy for making headway in the science wars. In the conflict between radical postmodern relativism and science-based realism, the question is whether facts about the world are merely culturally determined or whether those facts are grounded in some mind-independent reality. Analysis of cognition needs to take into account not only the findings of current cognitive science, but also the imagery and narratives used in scientific, cultural and literary discourses. Cultural factors play an essential role in shaping the world, and acknowledging this should not require rejecting or devaluing the role of science. The influence of culture and its role in cognitive niche construction shapes even our disciplinary taxonomies – constantly evolving scaffolds that accrete knowledge about specific domains. A combination of scientific and cultural knowledge is necessary to understand the nature of cognition and of being human in the world. Distributed cognition is a theoretical framework that enables one to grasp the mutual entanglement of science and culture. The importance of distributed cognition as a methodological approach grows out of its rootedness in bodies of knowledge from across the disciplinary spectrum, which together are reflective of the full scope of human nature.

During the period in which our project has taken place, second-wave thinkers in the cognitive humanities have begun to consider a more diverse range of approaches to the mind; the expansion of recent work in the field is discussed in each of the period-specific introductions to the volumes. Our project sought to strengthen and stimulate increased interest in distributed cognition. The current book series provides a rigorous engagement with these ideas by humanities scholars and demonstrates that distributed cognition can helpfully illuminate cultural studies. Our aim is to inspire a broader re-evaluation in the humanities of what is understood to count as cognition and to suggest a new way of doing intellectual history. The four current volumes on distributed cognition examine the practices and the explicit and implicit conceptual models that were in use from antiquity to the early twentieth century. Together the essays trace across Western European history developments and divergences among various concepts of distributed cognition that were circulating. The essays engage with recent debates about the various models of distributed cognition and bring these into discourse with research in the humanities through examination of the parallels to (and divergences from) these models and these debates in earlier cultural, philosophical and scientific works. The essays make evident some of the explicit and implicit grounds on which our present suppositions about cognition stand and also some of the knowledge and insights, as well as superstitions and ungrounded beliefs, that have been lost and obscured along the way. The reiterations and the diversity in expressions and practices of distributed cognition enrich and enlighten our understanding of wider forces and rhythms in the history of cognition. One important point that emerges is that notions of cognition can be shown to be fundamental to how we conceptualise debates in every discipline – the study of cognitive phenomena cannot be considered a specialist niche, but is rather a necessary underpinning of any study of

humans in the world. This series bears out the premise that ‘current philosophical notions [of distributed cognition] are simply the most recent manifestation of an enduring paradigm that reflects the non-trivial participation of the body and world in cognition’ (Anderson 2015b: xi).

In return for providing a scientific basis to our understanding of the mind in the humanities, historical studies have the potential to feed back and interrogate our current philosophical and scientific understanding of how cognition may be distributed across the body and the world. The historical lineage of non-brain-bound concepts of cognition demonstrates that such ideas are not merely a product of our own age. Cultural beliefs and philosophical interpretations map on to underlying physical features and processes in ways that function practically within a society.

The volume introductions provide detailed overviews of the development of the cognitive humanities in relation to the periods they cover, but to briefly outline how distributed cognition can illuminate cultural interpretation by challenging models that view the body or the environment as peripheral to understanding the nature of cognition, we shall present a few instances that arise from our collaboration with the National Museum of Scotland.

Distributed cognition raises questions about the nature and role of galleries and museums, demonstrating ways in which many of the artefacts extend either human cognitive or other physical capacities. There are some (perhaps obvious) examples of distributed cognition, such as the tally stick, which was a piece of bone or wood scored across with notches that was used, from around 30,000 years ago, to record numbers or messages. This was an ancient memory aid. Like the oft-cited modern example of an iPhone, it remembers, so you need not. Basic tools controlled by bodily action gave way to mechanised tools that outsourced mechanical processes, through devices such as steam engines, and to automated and programmable agents, such as the Jacquard Loom. The Jacquard Loom not only moved faster and more reliably than a human weaver, it took over the weaver’s cognitive load and allowed greater design complexity than would ordinarily be available from the average human weaver’s brain alone. In a trajectory familiar to those who work on the history of the book, a museum also makes evident the shift from oral traditions to literacy through the preservation of early memorial stones carved first with only images, then manuscripts which enabled more detailed storage, manipulation and communication of information, then printed books and presses that enabled the sharing of information on a larger scale, and finally we emerge into the modern world of computers and the internet.

Encounters with museum artefacts involve both a conceptual encounter with an object’s caption and an experiential encounter with the object itself – a metal helmet may automatically trigger a sense of weightiness (Bolens 2017). Yet, in some instances the contingent nature of one’s tacit knowledge may affect the extent to which artefacts prompt a kinesic or kinaesthetic response, with the cognitive capacity to simulate holding, wearing or interacting with an object relating partly to prior embodied and cultural experience, with more conceptual scaffolding (for example, via illustrations of past uses) needed for more obscure artefacts. Similarly, devices

that may seem intuitive in one period often require significant amounts of culturally embedded knowledge that belie their apparent simplicity (Phillipson 2017). Distributed cognition invites a broad spectrum of multidisciplinary approaches, enabling a richly diverse appreciation of the reciprocal ways in which artefacts and humans have shaped each other.

Distributed cognition creates a scientific basis for understanding the fundamental significance of culture to humans and the humanities. Describing perception, Alva Noë says, 'We continuously move about and squint and adjust ourselves to . . . bring and maintain the world in focus' (2015: 9). When we read literature, view art or engage with historical artefacts in a museum, we remain linked to our own particular ever-shifting perspective and yet these cultural resources allow us to experience the world beyond our usual cognitive range. Each genre, each author or artist, and each work provides distinct forms of cognitive mediation. It does this in a way that reflects back on ourselves and the world around us, at the same time as it recalibrates and adds to the numerous virtual coordinates through which we more generally orient ourselves and enact our worlds. Texts, artworks and other cultural artefacts are imbued with mind, the mind of their creator and their context, and that of the spectator, reader or interactor. Objects, images and language, particularly those in consciously crafted literary and art works, provide catalytic scaffolding for perceptual flights into and beyond the usual constraints of our own imaginations, and can trigger a rich array of responses that are grounded in and recalibrate our emotional, physical and cultural natures, extending and revitalising our mental panoramas.

Our series questions assumptions that have been made about historical notions of the mind, begins to trace the lineages of ideas about the mind across periods and cultures, and highlights the ways in which certain aspects of the mind come to the fore in certain contexts and traditions. The realisation of the distributed nature of cognition, which can induce both mind-forged manacles and mind-extending marvels, upholds the role of the humanities in wider society and more broadly challenges humans' ways of being in the world. The extent of our capacity to extend our minds, across our current sociocultural panorama and physical world, and via the cognitive scaffolding provided by earlier generations, places in question the relatively short-term individualistic ends that are currently being prioritised and endorsed in most modern societies. The value of the humanities in concert with the sciences is their capacity to extend our cognitive range beyond everyday constraints, by scaffolding critical thinking and enabling our minds to soar to the heights needed to tackle world-sized and epic-scale issues, as well as to supplement our ability to grasp more fully the diversity of other minds. Distributed cognition invites a more inclusive approach, which acknowledges that experience and understanding of the world and of the humanities is multifaceted and involves biological and sociocultural dimensions. Distributed cognition offers a reconsideration of the nature of the human mind, and so of being human, and, in turn, of the humanities.

## Distributed Cognition in Medieval and Renaissance Studies

*Miranda Anderson*

The purpose of this chapter is to provide a background to current research in medieval and Renaissance studies on topics related to distributed cognition and to consider how the various chapters in this volume represent, reflect and advance work in this area. The volume brings together fourteen chapters by international specialists working in the period between the ninth and the seventeenth centuries in the fields of law, history, drama, literature, art, music, philosophy, science and medicine. The chapters revitalise our reading of medieval and Renaissance works by bringing to bear recent insights in cognitive science and philosophy of mind on the distributed nature of cognition. A distributed cognitive approach recognises that cognition is brain, body and world based. Distributed cognition is a methodological approach and a way of understanding the actual nature of cognition. Together the chapters make evident the ways in which particular notions and practices of distributed cognition emerged from the particular range of socio-cultural and technological contexts that existed during this period. This chapter attempts to put these contributions in their wider research context by examining how such topics have been approached by mainstream scholarship, earlier work in the cognitive sciences and by existing applications of distributed cognition theory. Throughout I reference the chapters in this volume that provide further information on topics covered or that take forward the issues in question. In the concluding section, I turn to a fuller overview of the chapters themselves.<sup>1</sup>

### **Medieval and Renaissance Studies**

The confrontation of medieval and Renaissance studies with cognitive scientific methods and theories dates to around thirty years ago and, especially at first, had an impact only at the margins of mainstream scholarship. This confrontation has progressively helped to fuel growing interest in medieval and Renaissance insights into (and superstitions about) the cognitive roles of the body and environment. In

<sup>1</sup> For assistance with this chapter I am very much indebted to Sarah Brazil, Douglas Cairns, Terence Cave, Mark Sprevak and Michael Wheeler.

this section, I start with a general overview of medieval and Renaissance studies.<sup>2</sup> I then examine in more detail how various topics covered by traditional scholarship have been affected by the cognitive sciences and the emergence of new areas of focus under the expanding influence of approaches explicitly informed by theories of distributed cognition. This more detailed analysis will include discussion of scholarship on the following topics: the mind, life and soul; the body and environment; the emotions; language and linguistic theories; theory of mind and interaction theory; the self and subjectivity; social, material and conceptual environments; the memory arts, orality and literacy; and, finally, literature and the arts.

If we begin by looking back to early notions of philology, we can already find expressions of the idea that the human mind considered on a historical scale involves both elements of change and continuity across different periods. Erich Auerbach (1949) paraphrases Vico's historiography thus: the 'entire development of human history, as made by men' is 'potentially contained in the human mind' though 'in each period the institutions are in full accordance with the human nature of the period' (117–18). The spectre of Woolf's *Orlando* momentarily flickers before one's eyes: persistent yet fluidly shifting between periods. The argument is that, despite the distinctiveness of human minds in different periods, the creations of human minds from any period are accessible to other human minds because of our shared nature. Such a view ventures part way towards a distributed cognitive approach, because distributed cognition posits the *persistent* nature of certain human traits, particularly our psychophysiological plasticity, at the same time as this human *adaptivity* to cultural, physical and linguistic variables tempers any notions of universals.

Burckhardt in 1860 may have overstated the claim for the emergence in the Renaissance of an individualism that was more self-conscious, transparent and objective, but he helped to establish a basis for examinations of historical periods that spanned the cultural and social realms.<sup>3</sup> In medieval and Renaissance studies, the twentieth century saw a gradual broadening of attention from a focus on pinpoints, such as monarchs, religious leaders and famous political, diplomatic and military events, to consideration of phenomena such as social, economic and political systems, community practices, changing values and the roles of previously neglected groups.<sup>4</sup> The Annales school led to a new emphasis in literary and

<sup>2</sup> In places here I refer to medieval and Renaissance beliefs or studies together to indicate shared general perspectives or elements of continuity. We've chosen to use the singular term 'culture' in the title of the volume despite the objections that might be raised since even when referring to a single period critics often use the plural form to clarify their recognition of plurality and diversity. Yet any complex culture is necessarily plural and diverse; therefore, the term 'culture' when applied to an expanse of time or space is indicative of plurality and diversity.

<sup>3</sup> 'Here the human spirit took a mighty step toward the consciousness of its own secret life' (Burckhardt 1960: 229).

<sup>4</sup> While the changes I'm referring to here occurred over many decades, there are outliers who pioneered these developments long before they became more general, such as Eileen Powers, who is now perhaps best known for her posthumously published work *Medieval Women* (1975).



historical studies on attempting to recover the *mentalités* of earlier generations. This often took the form of sociologically inspired explorations of collective and symbolic practices over the *longue durée* and of individuals and events as embedded in milieu. This approach was further disseminated through the rise of structuralism.<sup>5</sup> To an extent we can see here the anticipation of distributed cognition theory in terms of the attention paid to external influences shaping human nature, as in this remark by the historian Lucien Febvre that

every human individual is subject to such powerful influences, some reaching us from the very depths of time, others being entirely immediate, emanating from the living environment; especially if we remember that such influences are in the first instance transmitted via language and tools. (Febvre 1973a: 4)

However, the claims for the situatedness of *mentalités* and against atemporal categories could also lead to a neglect of phenomenological experience and an over-emphasis on radical disjunctions: ‘the science of our contemporary psychologists can have no possible application to the past nor can the psychology of our ancestors have any possible application to the men of today’ (Febvre 1973a: 5).<sup>6</sup>

Furthermore, by the 1980s and 1990s this trend had developed into a still productive but excessive focus on the effects of sociocultural forces on human concepts, behaviour and practices. Under the auspices of postmodernism, anxiety-beset theories of human extendedness (though this term was not in use) came to the fore, with the subject’s construction by external forces perceived as a disturbing necessity. Psychoanalytical theories, poststructuralism, deconstructionism and even cybernetics had all further directed the focus on to the play of discourse and arbitrary symbolic forces.<sup>7</sup> Bodies and events became understood primarily as merely ideological structures and discourses were viewed as performative sites of power and subversion.<sup>8</sup> While on the one hand this shift in thinking had led to the rejection of the then still widespread belief in the universal nature of man, along with a diminution of the tendency to revere great men and Western values alone, on the other hand it virtualised human nature and relativism, and in fact often led to presentism, with a typically contemporary bent to the issues studied. Postmodernism particularly affected Renaissance studies, which pioneered new historicism as a means to examine issues such as historical constructions of gender, heteronormativity, self-fashioning and colonialism. In this new guise the view of the Renaissance as the birth of individualism and modernity returned. Medievalists

<sup>5</sup> For a detailed overview of the Annales school see Dosse 1987.

<sup>6</sup> Stuart Clark (1983: 69) caricatures the view that the Annales school had of the masses: ‘Preoccupied with surviving in hostile, mysterious surroundings, lost in a world of which they had only imprecise knowledge, simple men became victims of severe, even psychotic anxiety.’

<sup>7</sup> See, for example, Hayden White’s *Metahistory* (1973). This trend is discussed further in Anderson 2015b.

<sup>8</sup> Greenblatt 1980; Howard 1986; Montrose 1992; Gallagher and Greenblatt 2000; Mazzio and Trevor 2000.

complicated such claims, primarily by adopting new historicist premises themselves, for instance, by demonstrating links to contemporary issues or notions of subjectivity in medieval works.<sup>9</sup> Such have been the ongoing effects of this theoretical tectonic shift that subsidiary turns, even when focused on phenomena such as ‘embodiment’ or ‘materialism’, tend to discuss these phenomena purely in terms of discourse, shying away from the hold of matter on human nature. Yet postmodern beliefs are in fact rooted in our capacity to use our bodies, as we do our other resources, without necessarily paying explicit attention to them. Consequently, these theories elide the significance of our actual body in the physical world, and the phenomenological transcendence that the mind (situated in brain, body and world) affords us.<sup>10</sup>

The remainder of this chapter focuses discussion on specific areas of scholarship, beginning with the history of the study of the mind in the narrowest sense. What constitutes the mind in contemporary cognitive science is a matter of debate, but the debate is not a new one. Though medieval and Renaissance beliefs about the nature of the mind were also contentious, discussion centred on the hard problem of the relation of the mind to individual immortality and the soul (rather than to consciousness *per se*). Medieval and Renaissance notions of distributed cognition are inflected via Christian belief systems, which can make their concerns seem distant and irrelevant to us today. However, lively – potentially lethal – disputes also encompassed more familiar concerns, such as what distinguishes humans from animals, the role of the emotions, the mind’s relation to the body and the nature of perception, mental representations and intentionality. Scholarly interest in medieval and Renaissance beliefs about the mind precedes the ‘cognitive turn’ in fields such as intellectual history and theology, fuelled by the period’s own considerable achievements in conceptualising many issues which continue to be fiercely debated in philosophy of mind and cognitive science to this day.<sup>11</sup> More generally, however, philosophical discussion of the mind often skips lightly from classical accounts to the nineteenth century with few stops in between.<sup>12</sup>

Classical Greek works, in which notions of the mind were already varied and contested, were almost all lost until the twelfth and thirteenth centuries, due to a

<sup>9</sup> See Patterson 1990 or Barrington and Steiner 2014.

<sup>10</sup> This tendency is evident or justified in Callaghan 2001, Elam 1996 and Strier and Mazzio 2006. For further critical discussion of postmodernism’s tendency to elide materiality and embodiment see especially Anderson 2015b and Eagleton 2016, or for another related perspective see Bynum 1995b.

<sup>11</sup> Particularly notable early examples stemming from traditional scholarship in this area are Onians 1951 and Godden 1985. Later examples are Pasnau 1997, MacDonald 2003, Wright and Potter 2003 and Haldane 2011.

<sup>12</sup> See, for example, *The Stanford Encyclopedia of Philosophy*’s article on ‘Collective intentionality’ (defined as ‘the power of minds to be jointly directed at objects, matters of fact, states of affairs, goals, or values’) which acknowledges that ‘this part of the history of philosophy is largely unwritten’, as it skips from Aristotle to Rousseau and German Idealism in a few sentences, before going on to discuss movements from the late nineteenth century onwards in more detail (Schweikard and Schmid).

general decline in knowledge of Greek, so that they remained unavailable or available only indirectly through partial translations or commentaries.<sup>13</sup> Consequently, though notions from classical antiquity remained influential they became transfused with an array of Judaeo-Christian, Anglo-Saxon and Byzantine notions, and study of them up to the Renaissance was concerned primarily with the question of whether and how classical notions might be reconciled with religious doctrines. As is evident from volume 1 of this series, classical antiquity attests the proliferation of a range of notions of distributed cognition that accord a cognitive role to the body and world. Distributed cognition covers the intertwined group of theories that are also nowadays together known as ‘4E cognition’, which encompasses embodied, embedded, enactive and extended cognition. The chapters in this volume show that during the medieval and Renaissance period, classical ideas persisted and developed in combination with influences from other traditions, into a rich, wide and diverse array of beliefs about cognition as embodied, embedded, enactive and extended.

The primacy of the body in Hippocratic, Aristotelian and Stoic theories becomes more fraught in Christian models because of tensions concerning the issue of individual immortality and the resurrection, with the earthly body often negatively construed – because of and in spite of its perceived necessity in this life.<sup>14</sup> Yet medieval and Renaissance beliefs to an extent anticipate the current notion of embodied cognition, because they similarly view psychological states and processes as being routinely shaped in fundamental ways by non-neural bodily factors. Traditional scholarship’s presentation of the medieval and Renaissance mind as primarily associated with reason or intellect alone (e.g. see MacDonald 2003: 255) arguably derives in part from modern models of the mind as identical to reason. As contributors to this volume such as L. O. Aranye Fradenburg Joy make clear, as with enactivist notions of the ‘deep continuity between life and mind’ (Thompson 2007: 128), an affinity was often assumed between soul and mind, terms which were often used as if they were synonyms.<sup>15</sup> Confusion is created, both for medieval and Renaissance thinkers and for us, by this category fluidity, and by the proliferation of different uses of different terms by different traditions and authors.<sup>16</sup> For instance, Godden (1985: 295) observes that Ælfric, Alcuin and Alfred closely associate mind and soul and use the terms ‘sawl’ and ‘mod’ interchangeably as a

<sup>13</sup> *The Stanford Encyclopedia of Philosophy*’s entry on ‘Medieval philosophy’ provides an account of the relative (un)availability of Greek texts.

<sup>14</sup> See discussion of this issue in Anderson 2015b and Haldane 2011: 304. Also see Bynum 1995a: 11 on bodily resurrection: ‘a concern for material and structural continuity showed remarkable persistence even where it seemed almost to require philosophical incoherence, theological equivocation, or aesthetic offensiveness.’

<sup>15</sup> Godden 1985: 279; Anderson 2015b; Fradenburg Joy in this volume.

<sup>16</sup> As described in the thirteenth century by Bartholomaeus Anglicus, here given from Batman’s translation (1582): ‘Also many names of the soule bée so coupled together, so that oftentimes one name is put for another, and the Soule that is one, is called by diuerse names in diuerse respectes’ (Bk 3, Ch. 5, 13).

name for the intellectual soul, while the Anglo-Saxon poets refer to the soul only in relation to death (as does Homer) and use 'mod' more liberally as almost an equivalent to the modern term for mood.

Medieval and Renaissance notions sometimes venture beyond familiar territory in thinking about what it means to describe cognition as distributed. As with the Stoic notions to which those systems are indebted, there was a widespread belief in an intelligent force that extends throughout all of creation, though here it is the Christian God that represents this distributed cognitive force.<sup>17</sup> Throughout the period, the dominant view was that the soul pervades the whole body, with the body a major influence on all, or almost all, aspects of mental functioning during human mortal existence. The pervasive belief, derived from Aristotle and inflected by Neoplatonism, was that the soul consisted of three faculties. The highest intellectual soul was exclusive to humans, the sensitive soul was shared with animals and the vegetative soul was common to all three life forms. This belief again implied a sense of continuity between mind and life and of both continuities and disjunctions in ways of knowing and being that reached across all existence.<sup>18</sup> The world was viewed as a cognitive ecological system that operated across a range of hierarchical levels, through which humans could ascend to a more Godlike apprehension, or conversely descend to the more limited purview of animals. The tripartite faculties of the human soul included the passions and the primary instincts, with bodily and environmental factors held to enable or constitute cognition in both supportive and detrimental ways.

The 'corporeal turn' in mainstream scholarship involved an interest in the effect of sociocultural discourses on concepts of the body, particularly through analyses of medical and anatomical treatises.<sup>19</sup> Yet in most of these scholarly works the body appears only as a kind of pre-linguistic 'spoiler' (Gallagher and Greenblatt 2000: 15). Cognitive approaches instead suggest that discourses are constituted by, as well as constitutive of, the experience of the lived body. The co-existence of both differences and continuities between embodied humans, embedded situations and linguistic structures enables us partially to sense and grasp past phenomenologies, rather than there being simply an uncrossable gap. Indeed, my particular amalgam

<sup>17</sup> See Gill (2018), in volume 1 of this series, on Stoic notions, and Anderson 2016b on the influence of Stoic notions on the Renaissance and as in some respects anticipating enactivist theories.

<sup>18</sup> See Haldane 2011 (295) or Anderson 2015b for Renaissance examples. Recent works on philosophy of the later medieval period make clear the extent to which this was a time of innovation and creativity. For instance, Peter John Olivi arguably anticipates extreme enactivism. Olivi critiques Aquinas's notion of inner mental representations and insists that there is no veil between us and the world (Pasnau: 5, 22). Another instance is Bonaventura's attempt to solve the medieval hard problem of the soul-body relation. He adopted the Aristotelian notion of universal hylomorphism, but makes a distinction between extended matter in the spatiotemporal realm and the soul's non-extensive matter (Haldane 2011: 279). Thus, Bonaventura inverts this period's commonplace that the soul or mind extends more widely than the body, long before Descartes, though in Bonaventura's word-bending theory the soul is in fact a kind of (distinct metaphysical) matter.

<sup>19</sup> Important works include Laqueur [1990] 2000; Sawday 1995; Hillman and Mazzio 1997; Kemp and Wallace 2000.

of characteristics and contexts may connect me with some distant ‘other’ more closely than to a person who is proximate in time or space. I experience history, literature and other forms of culture through my embodied mind and the ways in which it connects me to other people and things in the world – those which are present and those which are past, future or fictional.

Emerging insights on the embodied nature of the mind have inspired scholars to re-examine earlier beliefs about the cognitive roles of the body and the emotions, particularly in relation to humoral theory.<sup>20</sup> From their Western origins in ancient Greece, notions of the four humours travelled down via Galen and Islamic medicine and continued to influence medical and philosophical theories into the seventeenth century. The four humours were thought to shape human beings’ physical and cognitive natures and were composed of the same four properties as the four elements of which the world was made. In historical and literary studies there has been increasing interest in the ways in which medieval and Renaissance belief in the humours led to notions of a permeability between brain, body and world. Terms that scholars in the past have taken to be merely figurative were actually often intended as descriptions of humans’ psychophysiological nature; for example ‘hard-hearted’ describes the blockage of blood flow that was thought to lead to lack of empathy.<sup>21</sup> As with notions of the soul as connecting us to all aspects of lived experience, and of the spirits which transported the passions around and in and out of the body, the humoral balance was thought to be intimately entangled with the environments in which one was or had been embedded. Belief in these permeable mechanisms and fluid processes was a means to describe and understand why and how people were predisposed to cognitively co-opt the world or extend into it. As in the current hypothesis of cognition as extended, the actively adaptive nature of our psychophysiology was understood to ‘poise’ humans for intimate and dynamic relationships with environmental, sociocultural and technological resources and environments.<sup>22</sup>

Gail Kern Paster argues that lack of recognition of the different character of an emotional experience in Renaissance texts is connected to our failure ‘to recognise how the porous and volatile humoral body, with its faulty borders and penetrable stuff, interacts differently with the world than the “static, solid” modern bodily container’ (2004: 23). This remark suggests a significant conceptual difference between then and now in terms of bodily and emotional experience. Yet it seems likely that both models of the body (as container and as porous) co-exist and relate to different aspects of bodily experience, while the sociocultural and linguistic foregrounding of one model or the other then feeds back into perception of that experience. In

<sup>20</sup> For a more extensive overview of embodied cognition in cognitive science see Chapter 1. For examples of medieval and Renaissance studies of embodied and affective cognition, see Paster 2004; Paster et al. 2004; Arikha 2007; Pickavé and Shapiro 2012; Anderson 2015b; Blud 2016.

<sup>21</sup> Rublack 2002. See also Paster 2004; Lockett 2011a.

<sup>22</sup> See Floyd-Wilson and Sullivan 2007 on Renaissance notions of embodiment and environment and see Anderson 2015b on this Renaissance parallel with Clark’s (2003) theory of humans being naturally ‘poised’ to cognitively extend into the world.

the light of distributed cognition, it is evident that what has been perceived as superstition in humoral theories might be reconsidered as an intuitive grasp of the fundamentally enmeshed nature of body and world. This notion of organism-environment coupling holds particularly close affinities with enactivism, which describes cognition as enacted (or brought forth) through continuous reciprocal interactions between an organism and its environment. Postmodern theory instead emphasises only discontinuities, gaps and boundaries. Though often fuelled by laudable aims, postmodernism ignores the material grounding of existence that underlies our interconnectedness to each other and the world.

In the early twentieth century, study of the history of emotions was encouraged by Johann Huizinga, yet his 1924 depiction of the later Middle Ages as characterised by ‘superabundant emotion’ and ‘sombre melancholy’ was criticised from early on (1992: 200, 31). Febvre (1973b) was one of his critics, though he similarly encouraged historians to turn their attention to the sensibility of a period. While he shared Huizinga’s view of the Middle Ages as emotionally volatile, he argued that it was due to harsher living conditions of which Huizinga had not taken due account. Norbert Elias’s 1939 exploration in *The Civilizing Process* of the role played by ‘sociogenetic and psychogenetic’ factors in the growth of feelings of ‘shame and delicacy’ only became influential after its translation in 1969 (2000: x, xiii). All these earlier studies have come under criticism for constructing grand narratives that progress towards modern enlightenment.

While study of the emotions is a long-standing field, its reinvigoration has been marked by the emergence of an upsurge of journals, conferences and research centres.<sup>23</sup> Jan Plamper (2015: 5) observes the same enduring tensions that have emerged in relation to the cognitive humanities, between universalism and evolutionary theorists on the one hand and relativism and social constructivism on the other: ‘Since the mid-nineteenth century at the latest, academic discussion of emotion has revolved around these two polarities.’<sup>24</sup> A distributed cognition approach mediates these polarities. The notion of a dichotomy between the natural and cultural can be seen as a non-conscious reverberation of mind and body dualism that a distributed cognition approach counters and complicates – human nature is biologically predisposed to be emotional and cultural, and our experiences of body states and processes are culturally inflected. Scholars on the history of the emotions and in the medical humanities vary in their views and understanding of the cognitive humanities, but in medieval and Renaissance studies these research areas are often already interconnected, perhaps partly since in the medieval and Renaissance period theories about these phenomena substantially overlapped. As the passions flowed in and out of as well as round the body via the spirits there was

<sup>23</sup> Matt 2011 and Trigg 2014 reflect on the affective or emotional turn and Trigg self-reflectively considers the role of emotions and emotive language in our disciplinary discourses.

<sup>24</sup> Similar observations of polarities between evolutionary psychologists and universalists and relativists and constructivists have been made by Schnell 2004. Rosenwein (1998: 2) also describes a divide between those who view emotions as innate or socially constructed.

also a general belief in affective transmission between people and things.<sup>25</sup> In this volume Daniel Lochman and Hannah Wojciehowski explore affective interconnectedness and interpenetration in relation to the concept of ‘piercing’ in a range of fictional, theological and medical works.

Research on the embodied nature of language in cognitive linguistics was an early influence on medieval and Renaissance studies. Lakoff and Johnson’s (1980) work helpfully made apparent that humans tend to conceptualise non-physical domains in terms of physical ones. As with the influence of evolutionary psychology, from the late 1980s on, views such as Lakoff and Johnson’s led to the kinds of universalising claims in early cognitive linguistics and literary studies that we have already heard mention of in relation to studies of emotion. Cognitive linguistics has since evolved, with more recent studies taking a more sophisticated account of geographical and historical variables.<sup>26</sup> Nonetheless, even bearing in mind variations in our particular bodies, and in sociocultural and linguistic conventions, the role of embodiment in language creates deep chords that resonate across time and move us. Such theories, as Harbus (2012) describes in her volume on Old English poetry, help to ‘account for how twenty-first-century readers are able to create meaning from literary texts that are over one thousand years old’ (22). Another influential theory in this area is conceptual blending. Fauconnier and Turner (2002) use the term ‘blending’ metaphorically to refer to the integration of aspects of two or more input mental arrays to create a new mental array, and they argue that such conceptual blending is a basic human cognitive capacity. Common to both theories is the notion that both mundane and abstract concepts ultimately emerge from our everyday embodied experiences, and that these concepts in turn shape our everyday experience of embodiment.<sup>27</sup> Yet the dichotomy between nature and culture continues to reappear in recent cognitive linguistic and literary studies. For instance, Harbus (2012: 19) describes the ‘analysis of literary meaning-making’ as occurring ‘via the tension between embodied universals (biology) and contextual variables (culture)’. Nature is presumed to be universal and unchanging and culture relative and dynamic, when both nature and culture – through their entanglement and their own hybrid traits – contain elements of change and constancy. Our natural and cultural adaptability endures. Distributed cognition grasps, and is a vital component of, this seeming paradox.

The ways our minds are inflected by experience, including learning and using language, can more accurately be understood when we acknowledge the array of structures and the two-way nature of processes involved. Language does not construct cognition in a top-down, one-way relation, as postmodern models reductively

<sup>25</sup> Paster et al. 2004; Anderson 2015a, 2015b, 2016b.

<sup>26</sup> See, for example, Lakoff and Johnson’s (1999) own later take on cultural and temporal diversity, or Glenberg and Kaschak (e.g. 2002, 2003).

<sup>27</sup> See, as examples of literary, cultural and historical studies using these methods, Crane 2001; Holsinger 2001; Bradshaw et al. 2005; Cook 2010; Lockett 2011a; Harbus 2012; Kern-Stähler et al. 2016; Booth 2017.

imply. Language emerges from embodied humans' interaction with both natural and sociocultural environments and is both constituted by and constitutive of cognitive experience in spiralling developmental loops. Medieval and Renaissance texts variously describe language and literature as enabling or as fundamentally formative. Texts were referred to as intellectual offspring, as constitutive of the mind and subjectivity, and as quasi-independent minds and subjects. Language is also described as another perceptual modality, a putative sixth sense; yet it was also considered an unreliable, unruly and feminine asset, perhaps less trustworthy than bodily gestures and facial expression in overcoming the distance between inner and outer. The disputes that have emerged between some current embodied and extended mind accounts about whether or not the body plays a special role in cognition (Clark 2008) were already at issue in the medieval and Renaissance period, with anxieties that the unruly spirits, humours and passions pollute cognition, which in turn led to human language being depicted either as providing a means of mediation and ascension, or as itself problematically implicated by the Fall.<sup>28</sup> Uncertainty about the role of linguistic representations versus the role of physical means of expression to an extent anticipates modern debates about the role of language versus the role of the body in forms of cognitive extension.

Cognitive poetics, which emerged from formalist and structuralist roots, has also been an influential area from early on in the development of the cognitive humanities. Reuven Tsur (1992), who coined the term, seeks to distinguish it from the other kinds of approaches mentioned above. Tsur defines cognitive poetics as a method that strives to explain, rather than merely categorise, cognitive effects through analysis of the structures of literary works. Other thinkers have been more open to considering how to incorporate cognitive linguistic approaches into cognitive poetics (see, for example, Stockwell 2002). More generally, cognitive narratological approaches, which share in those roots, have been slower to develop in medieval and Renaissance studies primarily because conventional notions of narrative that focused on formal features, such as the narrator's role, biased attention towards later periods. However, cognitive approaches have helped to bring into question traditional definitions of narrative, shifting the emphasis to the ways in which cognitive and phenomenological features constitute a narrative. Important here has been Monika Fludernik's redefinition of narrativity in terms of experientiality, with the only requirement being 'a human (anthropomorphic) experiencer of some sort at some narrative level' (1996: 9). Fludernik's call for a diachronic approach to narrative studies also marks recognition of the need to shift away from an ahistorical approach (2003).<sup>29</sup>

Nonetheless, diachronic studies such as David Herman's edited collection *The Emergence of Mind* (2011) and a special issue on social minds in *Narrative* (2015)

<sup>28</sup> Further discussion of current theories is provided in this volume in Chapter 1. Discussion of this topic in both current and Renaissance thinking is given in Anderson 2007b, 2013 and 2015b particularly.

<sup>29</sup> Ryan (2001) has also been particularly influential in terms of this reframing.



remain exceptional. The inspiration for the social minds special issue was Alan Palmer's pioneering works (2004, 2010), which draw on a range of cognitive scientific concepts, including Daniel Dennett's notion (1996: 34) of humans as routinely adopting an 'intentional stance', which involves treating 'an entity as an agent in order to predict its actions'. It is an *as if* mechanism in that what it means for someone to have a particular belief is for her behaviour to be explicable and predictable if we attribute that belief to her. Dennett further proposes that the habit of adopting an intentional stance covers both other- and self-interpretation (120). Palmer (2004: 178) argues that the reading process involves a similar, but linguistically based, attribution of minds to characters, which then acts as an embedded narrative. The human propensity to attribute mental properties to ourselves and to others has also been discussed in terms of 'theory of mind', which often wrongly tends to be associated only with later periods than we deal with in this volume.<sup>30</sup>

In the special issue on social minds, Eva von Contzen (2015: 140), employing a dualist notion of cognition, questions the need for Palmer's notion of social minds to understand medieval literature when 'experientiality is tied much more to acting than to thinking (and its cognitive bedfellows)'. Yet Palmer himself (2004) urges that categories of thought ought not to be restricted only to those which fit speech category forms, in order for it to become apparent just how much of our thought, and our identity, is social and distributed. And while the transition from medieval to Renaissance society is often demarcated in terms of a shift from the collective to the individual, notions of collective experientiality and social cognition remain widely evident in the Renaissance.<sup>31</sup> Daniel Hostert's chapter (2015: 170) examines two factual narratives 'in which experience is depicted as shared and cognition emerges as intermental', while Anderson (2015a) focuses on evidence in Renaissance fictional and factual narratives of the concepts that a multiplicity of cognitive agencies can operate in a single human, and that multiple people can form a single cognitive agent. In Cynthia Houg's chapter in this volume this notion of the intermental is explored through an examination of the creation of art in Italian Renaissance workshops: the collaboration of multiple people on drawings collectively produces an artwork, with the adoption of a master's style a way of assuming his mindset.

Recent enactive accounts, by Shaun Gallagher and Dan Zahavi (2007) or by Gallagher and Daniel Hutto (2008), argue that we do not commonly think about other minds by using internalised theories about the nature of the mind (Theory Theory) or mentalising simulations (Simulation Theory). In preference to these two competing ways of unpacking theory of mind, they instead make a case for interaction theory. Interaction theory posits that our intentional capacities are grounded

<sup>30</sup> Palmer (2010: 5–6) describes it arising in the early nineteenth century, while Liza Zunshine's work (2006) argues that readers use theory of mind to understand characters in novels and that it is theory of mind that motivates our reading of novels.

<sup>31</sup> This goes back at least as far as Burckhardt and Huizinga, though Huizinga disagreed about the emphasis placed on Italy by Burckhardt (Huizinga 1992: 69–70).

in early developmental abilities to grasp others' intentions through facial and bodily gestures and actions (primary intersubjectivity) and motor resonance systems (secondary intersubjectivity). These intersubjective aptitudes are then developed via scaffolded narrative practice that enculturates us in the norms of our sociocultural context. In his chapter Jan Söffner examines how interaction theory is at play in *commedia dell'arte*. At the same time, he places in question both Renaissance studies' focus on humanism as a catch-all for understanding Renaissance culture and cognitive literary studies' adoption of theory of mind as a catch-all to understand our social cognitive capacities.

Already in medieval philosophy we encounter the idea of the material environment as fundamental to cognition: Ockham, for example, anticipates the notion that 'intentional content can be carried by materially realized operations' (Haldane 2011: 303). There are variations in whether, as in the case of embedded cognition, an external resource acts as a non-cognitive aid that enables a thinker to achieve the thought or task in hand, or as in extended cognition the resource is itself counted as part of the cognitive system. The increasing importance of material culture to religious practice between the twelfth and sixteenth centuries has been highlighted by Caroline Walker Bynum (2011), who argues that the increasing number of pilgrimages to places that displayed material objects which were believed to perform miracles was linked to shifting notions of materiality. In this volume we see how the significance of materiality plays out in Chaucer's *Canterbury Tales*, as Guillemette Bolens explores the ways in which the material possessions of the pilgrims, along with their embodied actions and narratives, are used to define characters' mental dispositions. Other works of traditional scholarship – such as Chris Woolgar's works (1999, 2016) on medieval material culture in everyday life, or *Subject and Object in Renaissance Culture* (De Grazia et al. 1996) – explore the ways in which material goods and transactions instantiate notions of self; this is a topic taken further here in relation to distributed cognition, in particular in Raphael Lyne's chapter, which explores how Ben Jonson depicts characters as 'soft selves' (Clark 2003: 139), ad hoc assemblages, situated in the cognitive ecology of the marketplace, in relation and contrast to which they attempt to fashion themselves.<sup>32</sup> Elizabeth Elliott's chapter, for its part, explores the use of place and everyday situated activities in the *Flyting* of Lowland Dunbar and Gaelic-speaking Kennedy, demonstrating how through the collaboration, circulation and reception of their

<sup>32</sup> See also Jones and Stallybrass 2000 on clothes' role in self-fashioning and their mnemonic-bearing capacity; Anderson 2007b on how changes to the technology of the mirror interacted with its use as a concept for socially extended cognition and as compared with the use of the book for textually extended cognition; and Sawday 2007 on the relation of Renaissance culture to the rise of machine technology. Another new field in material culture is Object Oriented Ontology, which explores notions of agency in relation to non-human objects; see, for example, Cohen and Yates (2016: xiii), who combine 'thing theory', as it is also known, with the environmental turn to explore 'the ethics of human enmeshment within an agentic material world'. Distributed cognition does not necessarily view the resources in the environment as independent agencies, though medieval and Renaissance theories sometimes did argue for a kind of vital animism.

poetic invective the dynamic nature of Scotland's cultural ecology is constructed as part of a distributed cognitive system in which diverse voices and cultures co-exist.

A similar representationally hungry drive sparked theatre's rise according to Ellen Spolsky (2007), who argues that Protestant iconoclasm and the transition from the more sensory and ritualised Catholic forms of worship centred on the Mass created this 'cognitive hunger' (a term borrowed from Clark). This transition to the Protestant emphasis on recall, sermon and book-centred worship is traced by Evelyn Tribble, who describes the mnemonic work of the sermon as distributed between the preacher, who was to use headings and subdivisions to ease recall, and his congregation, who in turn would use these to recreate the chain of reasoning (2005a). As Mary Carruthers (1990) has shown, technologies to aid shared memory were also common in medieval sermons. For example, we can find the trope of the chain of reasoning in use as a medieval manuscript border illustration, with a depiction of fish (symbolising Christians) that form the chain being drawn by memory hooks (332).<sup>33</sup> Carruthers has also collaborated with neuroscientist Yadin Dudai (2005) to demonstrate that in both medieval and current neuroscientific models memory is understood as an active participant in cognition. The art of memory was another customary means of scaffolding the mind throughout the period. In *The Art of Memory* (1966) Frances Yates traces the use of memory theatres from Greek antiquity into the Renaissance; this involved linking a sequence of information to a sequence of places or features within a building or memory theatre, so that you could then recall the information by visualising the architecture (see also Carruthers 1990). John Sutton persuasively argues that such systems 'are cognitive even though they are not, in a straightforwardly ancestral way, natural and biological; and they are extended even though they are not literally external' (2007: 26).<sup>34</sup> Mnemonic systems demonstrate that factors that we often conceive of as the products of exclusively internal mental processes also use both external and internalised cognitive resources.

More generally, theatre studies have been quick to grasp the ways in which cognitive approaches might inform our understanding of theatrical performance and spectating because the enmeshed nature of language with physical and spatial dynamics is highly salient in the world of the theatre.<sup>35</sup> Evelyn Tribble in her ground-breaking paper and subsequent book (2005b, 2011) on memorisation in the Globe theatre argues that, to cope with the mnemonic load of performing up to six different plays a week, methods of distributed cognition were used by players and writers. The plots, scenario instructions which hung from the tiring house, acted like two-dimensional maps to get actors, who only had copies of their own

<sup>33</sup> As a further illustration, a medieval *catena* (chain) was a collection of gospel commentaries each introduced by the author's name and with opening and closing words altered to make them form a continuous chain; Thomas Aquinas's memorising of key authorities led to his *Catena aurea* manuscript (*Golden Chain*).

<sup>34</sup> See also Busse Berger on the art of memory and music (2005) and Wilder on the art of memory and theatre (2010).

<sup>35</sup> Spolsky 2007; McConachie 2008; Stevenson 2010; McGavin and Walker 2016.

individual parts, into the right places as a means to trigger the correct lines, and more experienced players guided novices aided by embedded instructions in the text, such as when to get on and off stage (see also Stern 2009). Miranda Anderson (e.g. 2007b, 2015b) has since shown that practices of extended cognition are manifest in many aspects of Renaissance society. Furthermore, she demonstrates that these practices are accompanied by both non-conscious and explicit expression of notions of distributed cognition across a wide array of domains, including scientific, medical, philosophical, theological, technological, historical and literary works, with variant forms of notions that resonate with current embodied, embedded, enactive and extended cognition circulating widely.<sup>36</sup> In this volume Julie Cumming and Evelyn Tribble expand on Tribble's earlier thesis about the theatre to examine the ways in which the mnemonic and creative capacities of singers and dancers were enabled by an array of material, social, bodily and neural resources, and as with Söffner they highlight the importance of improvisation. In her chapter Clare Wright uses the fifteenth-century York *Play of the Crucifixion* to demonstrate the ways in which pageants act as cognitive niches (Wheeler and Clark 2008; Menary 2014). We create physical, social, epistemic and cultural resources and environments in order to endow ourselves with enhanced cognitive capacities.

Another central means of enhancing human cognitive properties came about through the widespread shift from orality to literacy and from manuscripts to printing that occurred during the period this volume covers. Medieval and Renaissance minds, and notions of the mind, were transformed by the gradual movement from orality to literacy and to increasingly text-based knowledge systems, which enabled the emergence of new forms and theories of distributed cognition. Our use of 'mind tools', psychologist Richard Gregory first argued, is what makes us human, with language a special mind tool, since language is a fundamental part of the human cognitive repertoire that makes possible the initial concretisation and communication of an idea, enabling us to navigate in the world and to construct higher-level concepts.<sup>37</sup> Philosopher Andy Clark describes the 'architecture of the human mind' as 'altered and transformed' by 'the historical procession of potent cognitive technologies that begins with speech and counting, morphs first into written text and numerals, then into early printing' (2003: 4). The cognitive effects of these changes are so evident they already pervade discussion in traditional scholarship on the history of the book. H. J. Chaytor's *From Script to Print* (1945) on the effect on medieval literature of scribal methods was followed in 1979 by M. T. Clanchy's *From Memory to Written Record*, which comments that 'literacy in itself is primarily a technology' and 'is unique among technologies in penetrating and structuring the intellect itself' (1993: 7, 85). Walter Ong's 1982 work on *Orality and Literacy* is renowned for its emphasis on the effects that writing has had on humans – and,

<sup>36</sup> Anderson uses the term 'extended mind' in her book (2015b) in the same way as distributed cognition is used in this book as encompassing the diverse 4E perspectives. See Chapter 1 of this volume or the introduction in Anderson 2015b for discussion of variations in the uses of the terms.

<sup>37</sup> Gregory 1981. See also Dennett 1996; Clark 1998, 2008.

notably, these effects are not only apparent in the use of written scripts. Through its internalisation as a structure, writing also inflects literate human beings' forms of thought and speech:

Many of the features we have taken for granted in thought and expression in literature, philosophy and science, and even in oral discourse among literates, are not directly native to human existence as such but have come into being because of the resources which the technology of writing makes available to human consciousness.<sup>38</sup>

The same is arguably true of our legal structures: in his chapter on this topic, Werner Schäfke considers how modern concepts of distributed cognition can aid us in understanding medieval Icelandic law's development from oral to textual forms. He focuses on how the *Grágás* manuscripts function as a form of cognitive device that guides beliefs and behaviour by providing applicable laws and legal norms. More generally, distributed cognition enables a new understanding of taxonomies (including those adopted by academic disciplines): they are forms of affordance that manifest salience in the world.<sup>39</sup> Theoretical approaches emerge out of the expression of human cognitive properties in relation to pre-existing conventions and shifting contexts. Consequently, even traditional theoretical approaches to medieval and Renaissance studies are themselves evidence of distributed cognition, as is the material which is their object of study.

The spread of the printing press began 'to refashion the mental world of Europeans' via the transmission of old knowledge and new means of information storage and retrieval.<sup>40</sup> Medieval and Renaissance belief systems provide evidence of an understanding of the mind (and self) as using textual and social systems to

<sup>38</sup> Ong 1991: 1. See also Goody 1987; Moss 1996, 1998; Blair 2003; Sherman 2008.

<sup>39</sup> The term 'affordance' derives from Gibson (1979: 127): 'The affordances of the environment are what it offers the animal, what it provides or furnishes, either for good or ill. The verb to afford is found in the dictionary, the noun affordance is not. I have made it up. I mean by it something that refers to both the environment and the animal in a way that no existing term does. It implies the complementarity of the animal and the environment.' How we perceive the affordances in our environment depends on our particular bodies and histories – for a hippo a pool affords a cooling wallow; for a water skater a surface to glide over; a scuba spider goes further in its organism-environment interaction – it creates an airbubble using fine hairs on its body in order to be able to dive for its prey; in the same way it can extend its biological properties humans extend their cognitive properties via organism-environment interactions (cf. Di Paolo 2009), e.g. using language to label, navigate and conceptualise the world, thus to a human 'pool' can identify in language a particular kind of watery entity and conceptualise the notion of 'a group' or 'to merge together'. Humans can shape not only their physical but also their linguistic, sociocultural and virtual environments, as well as being shaped by them.

<sup>40</sup> Rhodes and Sawday 2000: 6; see also Elizabeth Eisenstein's *The Printing Revolution in Early Modern Europe*, which describes the printing press's widespread and metamorphic effects on 'cerebral activities' (1983: 261). Many more works could be mentioned here but I focus on those that engage with the cognitive ramifications.

extend cognition externally, as well as through internalising mnemonic or linguistic structures. In a spiralling developmental dynamic, the transition from orality to literacy and from manuscripts to printed texts led medieval and Renaissance thinkers to be alert to the ways in which textual media could transform their cognitive range, through providing feedback loops for the development of their own thoughts, extending their spatial and temporal reach and enabling them to access the minds of others from afar. Writing became understood as a kind of external memory system, which could then be circulated and collaboratively contributed to as a kind of socially extended cognition. Anderson (2007b, 2015b, 2016a) explores how creating and engaging with books, literary works and performances was understood to enable critical and imaginative thinking that reaches beyond the constraints of the individual, via incorporating another's experience as one's own or sending one's thoughts soaring, such that they became capable of decking out a theatrical stage and ascending to heavenly heights of apprehension and invention (see, for example, *Henry V*: Prologue). The extension of individual and social cognition by means of writing is a theme explored in this volume by Pieter Present's chapter on Robert Hooke and other Royal Society members' division of cognitive labour via the use of this external 'repository', a word Hooke also uses for the brain. Research on the history of the book, with its emphasis on the ways in which cognitive capacities are transformed through these developments, anticipated and consequently can be embedded in the more general insights that distributed cognition offers the humanities about the continuous and reciprocal dynamic that exists between organism and environment. This dynamic operates in all the human realms, from the physical, environmental and technological, to the sociocultural, textual, fictional and virtual.

As we have seen, this distribution of cognition was understood to operate in the conceptual as well as the spatiotemporal realm. Conceptual categories are hybrid, relating to our onboard cognitive structures and to structures in the perceived world. Imagery affords understanding, as Grosseteste explains: 'Without material forms and figures, and without phantasms, we shall (eventually) contemplate the divine and intellectual beings . . . yet we shall not be able to attain to this contemplation unless we first use both uplifting forms and figures.'<sup>41</sup> So here is propounded the need to use the tropological resources of language to approach higher understanding. Traditional works on rhetoric and literary criticism provide a wealth of examples that remark on and illustrate these resources, but distributed cognition more keenly grasps the nature and significance of language's capacity to transmit embodied and embedded experience. In tracing such capacities, the chapters in this volume create a sense of the extraordinary power of language – and particularly literary language – to extend the mind beyond its usual conceptual capacities. Hannah Burrows, for example, explores the use of a system of kennings, which are compound words with a metaphorical meaning, e.g. '*svanvangr*' ('swan-plain' = sea),

<sup>41</sup> Grosseteste qtd in Minnis and Scott (1998: 169). For Renaissance examples of these phenomena see Anderson 2015b.

as assisting memorisation and as produced by, and productive of, new thoughts in Old Norse culture (pp. 101–2).<sup>42</sup> Where earlier cognitive linguistic models tend to suggest atemporality and inert absorption of conceptual metaphors, a distributed cognition approach suggests an evolutionary dynamic to language, style and genre formations. So though traditional scholarship has already been unwittingly grappling with notions of distributed cognition that were manifest and circulating in medieval and Renaissance culture, the theory of distributed cognition, like Grosseteste's forms and figures, itself is a conceptual affordance that allows the significance of these ideas, and the connections between their expression in different areas of culture, to come more clearly into view.

Literature acts as a representational domain for exploring this world and other possible ones, via imagination's capacity to flesh out the words on a page, or through an acted play literally bodying it forth in surrogate physical forms. As Harbus discusses, intentionality goes two ways, with authors also making inferences about their readers' minds: 'what sort of mental operations were anticipated by creators of literary texts, especially those involving a high degree of imaginative and creative work on the part of the recipient?' (2012: 19). Arguably, both art and literary works act as forms of perceptual, affective and sensory extension that enable the transposition of the self via the stimuli conjured by the work into an alternative realm and higher level of cognitive comprehension. Literature is a mind tool, and though as with any tool its ends may not always be virtuous, the very means by which it operates, such as widening one's conceptual range and enabling more vivid insights into other minds, necessarily tend to the improvement of the partaker. *Trompe l'œil* parapets and identification with figures in a painting (Williamson 2007), like narrative frames, figurative language and identification with characters in a literary work, were thought to scaffold ascent into cognitive flights beyond the everyday realm. The richly and consciously constructed nature of fictional narrative is particularly proficient at extending one's existing cognitive repertoire, as the reader brings forth a narrative and a narrative brings forth a reader as it plays out across and recalibrates the particular nature of each mind (Anderson and Iversen 2018). Guillemette Bolens (2012b: viii) has highlighted the importance of kinesis (motion) to constructing meaning. In the same way that objects and bodies trigger our perception of them as affordances, textual references to objects and bodily movements 'trigger sensorimotor perceptual simulations in the reader'. She explores this topic further in her chapter here.<sup>43</sup> Our cognitive

<sup>42</sup> For literary use of language as a special kind of mind tool or affordance see particularly Anderson 2007b, 2015a, 2015b; Cave 2016; Anderson and Iversen 2018.

<sup>43</sup> See also the recent edited volume by Kathryn Banks and Timothy Chesters on 'kinesic intelligence' (2018). Raphael Lyne (2011) and Philip Davis (2007) discuss Shakespeare's ability to seemingly capture cognition in motion, while Davis also explores his use of 'functional shift' (the use of one part of speech as another, such as the noun turned verb 'godded'), which Davis has shown causes a heightened neural response (97). Sarah Brazil's, *The Corporeality of Clothing in Medieval Literature: Cognition, Kinesis, and the Sacred* (2018), uses the notion of kinesis to approach a new understanding of the role of clothes in cognition.

modelling of narrative is to an extent grounded in the way we model the world; for example, as Jajdelska and colleagues argue, the description of the Prioress's face in *The Canterbury Tales* leads to a vivid experience not of the face but of the narrator's perception of it; the most vivid narratives are often imitative of the salient features of our cognitive processing, rather than of the referent's objective dimensions.<sup>44</sup> In this volume Kate Maxwell re-examines the close relations between mind, body and book in medieval culture, in this case in relation to the music book *Livre de Fauvel*, in order to demonstrate the active role of readers in reconstituting its multimodal nature.

To sum up, distributed cognition's more encompassing and inclusive notions of the mind as grounded in the world invite us to question notions of mind and being human in our interpretation of other periods, as well as our own. Febvre's criticism of the attempts to use psychological insights to inform historical study was based on the atemporal psychology of his own period (1973b: 19). His demand for a historical psychology has finally been fulfilled and surpassed by distributed cognition, which is sensitive to the complex, diachronic and dynamic nature of human beings and our relations to the world. Some philosophers and cognitive scientists are already alert to the potential consequences of their theories for all sectors of society:

This is a confrontation long overdue, and it is one with implications for our science, morals, education, law, and social policy; for these are the governing institutions within which we – the soft selves, the palpating biotechnological hybrids – must solve our problems, build our lives, and cherish our loves. (Clark 2003: 139)

Febvre further identifies the need for 'a wide-ranging, massive, collective enquiry', such as our collaborative effort here aims at (26). Recasting traditional approaches in the light of insights into the distributed nature of cognition enables us to perceive earlier notions of the holistic grounding of human nature in the world. A distributed cognition framework takes account of and explains our diversity and our sharing in a range of sociocultural and biological characteristics across time, illuminating the impact of the cognitive niches that we occupy and create on human nature and our understanding of it. Distributed cognition provides an expansive characterisation of the ways in which brain, body and world may work together in shifting and subtle partnerships that constitute and structure cognition, enabling us to fruitfully draw out these various interrelated and competing strands in historical works, as the chapters that follow richly and diversely reveal.

## The Chapters in the Volume

The fourteen chapters that follow illuminate notions and practices of distributed cognition in medieval and Renaissance thought and culture. Given that many of

<sup>44</sup> Scarry 1999; Kosslyn et al. 2006; Jajdelska et al. 2010.



the texts and practices discussed here have influenced later European thought and culture, this book reveals vital stages in the historical development of forms and notions of distributed cognition. There are chapters exploring this theme that focus on developments in Iceland, Scotland, Italy, France and England, as well as more general chapters on European culture. The contributors represent an array of disciplines, with literary scholars having contributed the most chapters overall, due to the breadth of literary studies as a discipline and its pioneering interest in cognitive approaches to the humanities. The aims with which we presented participants in the research project from which this volume derives were either to consider the ways in which medieval and Renaissance sources might be regarded as representing approaches that in some way prefigure modern theories of distributed cognition, or to explore the ways in which these modern theories cast new light on medieval and Renaissance phenomena, or the traditions through which they have been interpreted. A further aim is to demonstrate, and to stimulate wider critical investigations on, how approaches to distributed cognition in philosophy and cognitive science can inform, and be informed by, medieval and Renaissance culture, through making evident the constraints and capacities of past and current definitions and debates. The chapters directly engage with the various models in modern philosophy of mind and cognitive science which challenge standard models that view the body and the environment as peripheral to an understanding of the nature of cognition. The intention of the volume is to indicate through this wide range of topics what a future field of cognitive medieval and Renaissance studies might entail and encompass, the potential significance and breadth of its reach.

A significant theme that emerges is the ways in which distributed cognition reinvigorates our understanding of the nature of judgement, through making more apparent its grounding in oral, textual and material culture. Various forms of judgement are examined by the three opening chapters, including the legal, the cultural and the everyday kind. The first of these chapters focuses on how the general notion of ‘mental institutions’ (Gallagher and Crisafi 2009) can be related specifically to medieval Icelandic law book *Grágás* as it is contained in the *Staðarhólsbók* and *Konungsbók* manuscripts (Chapter 3). Werner Schäfke re-examines the gradual movement from oral practices to the use of law treatises in the light of Gallagher and Crisafi’s claim that legal processes both produce cognition, by generating judgements, and are produced by cognition, in that they are the outcome of many previous judgements. In a more official way than other texts, legal treatises both represent and create normative beliefs. Judgement is often considered to be a particularly abstract and internal aspect of human cognition, yet it is a cognitive process that is shown to be extended across social and textual domains. In addition, the organisation of *Konungsbók* and *Staðarhólsbók* reveal different ways of thinking about how individual judgements relate to more general principles. For example, unlike modern legal treatises which organise matter under a general topic, such as ‘homicide’, *Konungsbók* associatively accretes articles ‘in a way that it is accessible for a norm seeker that has a specific factual situation in mind, and not a broad topic’ (p. 53). *Staðarhólsbók* similarly gives a preference

to ‘the demands of practice over providing an encyclopaedic overview’ but it also adds further forms of textual scaffolding, such as tables, to lighten the cognitive burden on the reader of finding the requisite material.<sup>45</sup>

The following chapter reflects on the ways in which the less formal judgements of everyday society are playfully exposed, explored and triggered by Chaucer’s *Canterbury Tales* (Chapter 4). In this chapter Guillemette Bolens takes her ideas about the significance of kinesis (motion) further than in her previous works. Drawing on neuroscientific and cognitive scientific research, she describes movement as the cause of our having a brain. Bolens then goes on to claim, as does interaction theory, that culture can be understood as a means whereby ‘to convey dos and don’ts’ and to ‘control actions by means of tangible and intangible manifestations (e.g. explicit written laws and implicit social rules)’ (p. 68). Consequently culture, as Bolens explains, helps to ‘turn a psychophysical niche into a society, that is, a large-scale relational environment’ (p. 68). The more specific focus of the chapter is on the role that telling stories plays in terms of creating behavioural norms and sharing knowledge, and the ways in which it draws on our embodied experiences, causing us to mentally simulate narrated actions and interactions. Also tackled by Bolens in this chapter is the significance of the specificity of a cultural affordance, such as the longbow, of the idiosyncrasies of the intradiegetic storytellers and of the peculiar fact that they are all on horseback. The chapter culminates in discussion of how all of these factors relate to the stories that the pilgrims tell, which themselves are cognitive affordances.

Judgement in the next chapter comes in the form of the poetic *Flyting* of William Dunbar and Walter Kennedy (Chapter 5). Elizabeth Elliott demonstrates that rather than the exchange of insults being simply divisive, the airing of cultural tensions between Dunbar’s Lowland English-language heritage and Kennedy’s Highland Gaelic heritage is a creatively and publicly collaborative way of thinking together about Scottish identity that scaffolds public debate through the use of embodied and situated cues in the constructed environment. The ‘holistic function’ of the poem, Elliott argues, can therefore be read not as aiming to homogenise or reduce diversity as its outcome (pp. 86–7). When read in the light of extended mind theories, the poem instead can be seen as functioning to give voice to the animated complexities in play that together form a vigorous cognitive ecological system.

The transformative capacity of poetry is also explored by Hannah Burrows (Chapter 6). Burrows examines how Old Norse myths about skaldic poetry illustrate the Norsemen’s perspective of it as a ‘mind-altering’ substance that enables new modes of thought. This transformative capacity arises partially from its socially distributed nature and partially from its very complexity – for example, the cognitive work that is necessary to compose, memorise or interpret the kennings – such that skaldic poetry, as Burrows argues, forms a specialised ‘cognitive niche’ that

<sup>45</sup> Schäfke, this volume, p. 49; cf. Riggsby’s chapter in volume 1 of this series (2018) on the ways in which the use of tables is an organisational strategy that has to be learned and embedded in a culture.

enabled them to ‘develop new, culturally endowed, cognitive capacities’.<sup>46</sup> First-wave models from cognitive linguistics, as Burrows shows, only partially capture the dynamic, since Old Norse descriptions suggest that poetry ‘is not a cataract, but rather a catalyst for the mind’ (p. 100). Burrows reveals both that modern concepts of distributed cognition can aid us in understanding how a poetic form works and that similar notions to distributed cognition are embedded in their conceptualisations of poetry and poets.

A further set of chapters explores the relation between current notions of distributed cognition and several forms of medieval and Renaissance drama. The first of these chapters considers the relevance of various distributed cognitive models of social interaction to medieval drama (Chapter 7). Clare Wright critiques the notion of ‘mental institutions’ for its claim that they ‘are produced in specific times and places’ (Gallagher 2013: 6). Wright argues that the phenomenon of medieval drama demonstrates that this is too rigid a definition, because of medieval drama’s occasional nature and potential occurrence in a range of everyday settings, such as marketplaces, rather than in a specially designated place, such as a theatre. Therefore Wright argues that notions of a ‘cognitive niche’ (Clark 2006; Wheeler and Clark 2008) or ‘cognitive integration’, which claims that distributed cognition arises out of the coordination of complementary contributions made by neural, bodily and environmental vehicles to the overall cognitive system (Menary 2007, 2013), can better provide new insight into the diverse array of ways, such as the use of everyday sites and the emphasis on embodiment, through which spectators’ holistic experiences of the performance of medieval drama are scaffolded.

The marketplace is an even more central focus in Raphael Lyne’s chapter, which examines it as a form of cognitive ecology, in relation to which characters in several of Ben Jonson’s works attempt to define themselves (Chapter 8). Lyne draws on seminal works by Ed Hutchins and Andy Clark amongst others as a means to consider how a distributed cognitive approach changes one’s understanding of the nature of the self. Since distributed cognition posits a dynamic brain-body-world relation it transforms the ways we conceive of subjectivity or the self. As we have seen, the medieval and Renaissance period’s beliefs about human beings involved notions of a psychophysiological-environmental porousness and fluidity akin to current notions of agent-environment coupling. In conventional scholarship and in Renaissance works, subjectivity or the self emerges as a focus, in part due to the widespread religious and political unrest, and in part due to burgeoning literacy and wider travel, but such scholarship does not fully grasp the extent of or the evidence about Renaissance notions of organism-environment coupling due to its focus primarily on postmodern-influenced concepts of fashioning of subjects by sociocultural forces. Yet neither cognitive couplings nor generative or receptive cognitive interactions are necessarily positive, which places in question the optimistic tendency of cognitive scientific hypotheses towards viewing distributed cognition as typically beneficial (Anderson 2015a, 2015b). Building also on earlier works

<sup>46</sup> Clark 2006; Menary 2013: 27 qtd by Burrows (p. 000).

on material cultures, Lyne demonstrates in his chapter that in Jonson's plays both morality and immorality can prosper through a cognitive ecology that involves dynamic relationships with material goods.

The particular object that Jan Söffner focuses on in the next chapter is the mask of Italian *commedia dell'arte*, in terms of its orientation of bodies and behaviour and as an important element in *commedia dell'arte's* acting praxis.<sup>47</sup> Building on his earlier work (2004), Söffner focuses on enactive models of presence and interaction. After critiquing conventional interpretative models of masks as tied up with identity, and as a means of either self-display or self-loss, he instead argues for an agency-centred interpretative model of bodily and stage dynamics: 'A mask can lead to a state of acting in bodily presence, without the awareness of presenting one's self to the gaze of others – and so, the experience of shame and interactive self-reflection must change in turn' (p. 157). He examines *commedia dell'arte's canovacci*, which are designed to produce unpredictable situations in which players must improvise actions, rather than merely represent formulaic scripts. In his account, the interactional dynamic we see at play in *commedia dell'arte* functions as a case study that is indicative of the general need for a more embodied view of cultural analysis grounded in the insights of enactivist phenomenology. Further analysis is needed, Söffner argues, of how an enactivist phenomenological approach can open a reading of sixteenth-century Italian Renaissance culture as more improvisationally oriented and body-led than has been suggested by other scholarly methodologies and by a too dominant focus on Renaissance humanist models.

Attention shifts in the following chapter to the visual arts' practice and notions of distributed cognition, after which a further two chapters explore our theme in relation to music and the arts more generally. Cynthia Houg turns our gaze to the practice of drawing in the Italian Renaissance (Chapter 10). The kind of continuous exploratory sketching encouraged by Cennino Cennini in the late fourteenth century becomes central to artistic practice by the sixteenth century. Houg argues that the role of wider availability of paper in producing new drawing practices can be informed by Alva Noë's argument in *Strange Tools* (2015) that our organisation by technologies leads to the emergence of new cognitive modes – Noë's further argument is that, like philosophy, the arts (the titular tools) reveal the ways in which we are already being organised. Alongside the persistence of classical views 'of the hand as being both a tool and a mode of thought' (p. 172),<sup>48</sup> when considered through the lens of Andy Clark's (2003) use of sketching as an example of 'scaffolded thinking', in which environmental props and the non-neural body can enable the brain to achieve what would otherwise be difficult or impossible, it is clear that the rise of drawing's centrality does not simply represent a shift in

<sup>47</sup> Cf. Peter Meineck's chapter in volume 1 of this series (2018), which analyses ancient Greek dramatic masks as enactive and affective vehicles.

<sup>48</sup> Of possible relevance here is Courtney Roby's chapter in volume 1 of this series (2018), on Ptolemy's drawing of a comparison and a distinction between bodily and artificial instruments as ways of scaffolding cognition.

workshop or artistic practice. The term *disegno*, as Houg explains, exemplifies the enmeshed nature of idea and practice, for it signified both design and drawing. Drawing is a way of ‘thinking with the hand’. Furthermore, Clark’s notion of scaffolded thinking is in turn expanded in scope through its examination in the context of Italian Renaissance workshop practices. Learning to draw in a workshop, apprentices copied nature, antiquity and contemporary masters, with the last a means to ‘embody the master’s hand’ and assimilate ‘the workshop’s particular cognitive style’ (p. 173). In addition, Houg describes how the circulation of and addition to drawings by multiple hands acted as a means, not just of communicating, but of collaboratively creating concepts.

Expanding on existing work on the history of the book and the memory arts, Kate Maxwell explores the significance of medieval and Renaissance descriptions of the book or word as flesh which through its consumption transforms the reader (Chapter 11). Rather than being an alternative means of information retrieval to the biological memory, as in Clark and Chalmers’ paradigmatic case (1998), Maxwell argues that the intended function of the medieval book is primarily to enable efficient memorisation. Drawing on Wheeler’s paper (2018) on the way in which creative aspects of a process can be accounted for by the role of technological elements, Maxwell claims that the medieval book should be credited as a participant in the multimodal process it entails. The chapter focuses on the medieval music book as a multimodal cognitive artefact, and in particular on a couple of pages of *Livre de Fauvel*, in which art, text and musical notation are all deployed to trigger the senses of the reader, who becomes part of its cognitive ecology of production. A miniature image of the clerk reading the book that is pictured within the book models the artefact’s function (p. 196), in the same way as Chaucer’s narrator in the *Book of the Duchess* creates a metaleptic loop and provides an entry point into his creative process for its reader (Anderson and Iversen 2018). As with the use of familiar everyday settings and visceral embodied experience in medieval and Renaissance literary and art works more generally, these devices enable the partaker to transcend the everyday world and step into the revelatory world of the art work.

The importance of improvisation to the arts returns in a chapter by Julie Cumming and Evelyn Tribble (Chapter 12). The ways in which constraints enable creativity are explored in the context of the accomplishments of skill and memory achieved in the performing arts of this period. Drawing on Hutchins’s (2014) observation that a cognitive ecology emerges from the interaction of neural, technological or sociocultural constraints that are in play, they explore how this operates in relation to expert and amateur performance in the arts. Performers’ training and expertise is supplemented by the audience’s experience and knowledge, with practice of the arts part of the education of aristocrats and the merchant class: ‘it took a skilled audience to recognise the baseline on which performers improvised and embellished, and to appreciate the imaginative and idiosyncratic nuances of any such act’ (p. 206). In general, virtuosic improvisation rather than mere rote memorisation is valued across the arts (music, dance and theatre) that this chapter

explores. Cumming and Tribble untangle each of these particular ecologies, which are woven from distinctive assemblages of embodied expertise, artefacts, environments and social systems, in order to examine the demands placed on performers and audiences and to demonstrate that expertise emerges from multiple factors operating in concert: ‘these forms of complex thought are located not in the head or the body alone, nor in the social and material system that underpins the practices, but in the peculiar assemblages that link each of these elements’ (p. 228).

The final chapters turn to an exploration of the relation between current notions of distributed cognition and medieval and Renaissance science and medicine. As with earlier work in this area, bodily states and processes are shown to be understood as a vital part of cognitive processing, with the emotions one of the key mechanisms through which cognition is distributed across body and environment. Daniel Lochman examines the concept of ‘passion as piercing’ in relation to one’s own experience of emotion and to the effects of emotion on others (Chapter 13). He explores a range of Renaissance medical and theological works, particularly focusing on Melanchthon, Levinus Lemnius and Thomas Wright, and compares them with current notions of ‘affective interconnectedness’ (Colombetti 2014). This historical and intellectual contextualisation provides grounds for choosing a particular pathway through the rich array of interpretative possibilities afforded by scenes in Spenser’s *Faerie Queene* that variously employ the concept of passion as piercing. Focusing on this same concept of piercing, Hannah Wojciehowski’s companion chapter shifts the contextualising perspective to current work on cognitive metaphor (Chapter 14). After critiquing Lakoff and Johnson for their tendency to view the entirety of the earlier Western philosophical tradition as having failed to perceive the embodied and environmental nature of human reasoning, Wojciehowski turns to an examination of conceptual metaphors that demonstrate that cognitive processes were understood to be ‘highly susceptible to outside influences, which were imagined as physical intrusions’ (p. 254). As with Burrows’ chapter on skaldic poetry, Wojciehowski here highlights the ways in which the language we use is itself a form of distributed cognition through an exploration of the role of conceptual metaphors. Metaphors are themselves cognitive vehicles that help us carry the cognitive load of complex thought and can be adapted by succeeding generations to the shifting demands of different contexts.

L. O. Aranye Fradenburg Joy employs notions of affectivity in another vein in the next chapter. Enactivism’s notions of affectivity are set alongside psychoanalytical insights as a means of examining the significance of the sigh and the breath in a range of medieval and Renaissance medical and literary works (Chapter 15). From the perspective of enactivism, cognition is liberally defined as sense-making, and consequently all living systems are cognitive and cognition is affective and appraising. Colombetti describes affectivity as an ‘ever present mode of being in the world’ rather than merely a contingent colouration of a neutral norm (2014: 12–13). Fradenburg Joy explores how such a notion of ‘primordial affectivity’ might inform our understanding of the fundamental nature of our breathing of air and connection to each other’s and the Earth’s ‘respirational rhythms’ (p. 271): ‘As

an instance of distributed meaning-making, breathing reaches through the body to its environment or *Umwelt*, to participate in acts of mutual transformation'. She then explores evidence for this notion of breathing as a form of distributed cognition in psychoanalytical accounts and case studies, as well as in medieval and Renaissance medical and literary works. Finally, enactivism's description of the entwined nature of perception and action and the more generally acknowledged epigenetic variability of gene expression leads Fradenburg Joy to link the negotiable nature of meaning in linguistic expression to 'life's tolerance and even embracing' of diversity and adaptability (p. 277). The vulnerability or penetrability that was a focus in the two previous chapters is again here depicted as a source of vitality in the co-emergence of organism and environment.

In the final chapter, Pieter Present also investigates notions of distributed cognition in scientific writings, but from the rather different perspective of seventeenth-century works by members of the early Royal Society (Chapter 16). Adopting Kirsh and Maglio's term of 'epistemic actions', defined by Clark and Chalmers (1998: 8) as actions that 'alter the world so as to aid and augment cognitive processes such as recognition and search', Present reconsiders the ways in which the organisation of material in written form was considered to be an epistemic action that improved on what was possible for the brain alone. Robert Hooke describes the internal 'repository' of the brain as being supplemented by the external 'repository' of writing and stresses the improved accuracy and enhancement of cognitive capacity that writing enables – as with Francis Bacon before him, human beings' need of artificial as well as natural instruments is made explicit.<sup>49</sup> In addition, as Present describes, the circulation of writings helped enable the Royal Society to work as a distributed cognitive system. Hooke and Thomas Sprat's descriptions of writing in *The History of the Royal Society of London* further demonstrate that they themselves conceived of writing as enabling a form of socially extended cognition. Present closes by considering the encouragement of the use of tables as a means to streamline the processing of the increased quantities of information that were being dealt with by the Royal Society, drawing on Andrew Riggsby's chapter in volume 1 of our series (2018), which describes the use of tables as itself an embedded skill that assists cognitive processing.

These fourteen chapters cumulatively substantiate the resonances of current notions of distributed cognition with a wide range of medieval and Renaissance practices and concepts, while at the same time revealing their inflection, to varying extents, by particularities of the period, such as Christian and humoural world-views. The chapters draw on existing medieval and Renaissance scholarship, but by considering the cognitive dimensions of their topics, each one provides complex and compelling new insights on the topic it tackles, which as we have seen range from consideration of such basic processes as breathing to the most sophisticated scientific, literary and artistic endeavours. This breadth of applicability is richly

<sup>49</sup> On Bacon see Anderson (2015b, 2016b), and for a classical precursor see Roby's chapter on Ptolemy in volume 1 of this series (2018).

suggestive of the fertile potential of distributed cognitive approaches. Brought to the fore by distributed cognition are diverse understandings in the medieval and Renaissance period of the role of the body and a broad range of natural and socio-cultural resources and environments as together creative of human cognition. This book reveals a further stage in the historical development of our theoretical and practical attempts to comprehend and optimise the distributed nature of human cognition. This volume and series are based on, and bear out, the premise that current notions of distributed cognition are simply expressions of an enduring paradigm that reflect the participation of the brain, body and world in cognition.



## Medieval Icelandic Legal Treatises as Tools for External Scaffolding of Legal Cognition

*Werner Schäfke*

This chapter examines the medieval Icelandic law book *Grágás* as it is contained in the medieval manuscripts *Staðarhólsbók* (AM 334 fol.) and *Konungsbók* (GKS 1157 fol.) and explores in what ways the two manuscripts can be considered to function as external tools of legal cognition.<sup>1</sup> This chapter's focus is thus different from those essays in this volume which research historical ideas of distributed cognition. Instead the present chapter explores how the modern concept of distributed cognition aids us in understanding historical phenomena, in this case the function of two medieval Icelandic codices containing collections of laws.<sup>2</sup> The chapter follows Gallagher's (2013) liberal notion of distributed cognition, which includes institutional procedures and the external tools that support these procedures.<sup>3</sup> In light of this notion, the chapter outlines what lines of thought and reasoning the examined medieval codices support when used for finding relevant legal norms or charting applicable law.

The analysis looks at how the two codices organise legal norms and how they distribute and organise the norms' individual elements (for example, definitions, conditions and consequences). Since the organisation of legal norms in *Grágás* deviates significantly from the structuring of modern collections of statutes and legal encyclopaedias, the essay applies concepts of jurisprudence established in legal history and in modern legal theory to the two versions of *Grágás* in *Staðarhólsbók* and *Konungsbók*. This comparative conceptual framework allows a better understand-

<sup>1</sup> Transcriptions from medieval and early modern sources follow the transcription principles of the cited editions or, in the case of my own transcriptions, are normalised to Old Icelandic for medieval sources and modern Icelandic for early modern sources, and retain original capitalisation.

<sup>2</sup> A similar perspective is taken in Riggsby's chapter in volume 1 of this series (2018), as well as in chapters by Meineck, Roby and Short in that volume.

<sup>3</sup> The scaffold that external tools provide for distributed cognition is understood in this chapter as functioning in a way comparable to 'Otto's notebook' in Clark and Chalmers' (1998) article on the extended mind. The function is not necessarily identical, however. The contemporary readers of the analysed codices have not necessarily previously endorsed the information contained in them and they did not necessarily accept it as true (cf. Gallagher 2013: 5–7). A similar argument for a more liberal notion of distributed cognition regarding longer prose texts is led by Schäfke (2017).

ing of the function of the examined manuscripts as cognitive tools in their historical context – and which functions they are unlikely to have fulfilled.

In order to clarify the relation of the historical development of distributed legal cognition to its textual tools, the chapter's conclusion compares the *Grágás* manuscripts to an early modern Icelandic legal manuscript (AM 60 8vo) and to modern statute collections. This comparison shows how the distribution of legal cognition to textual tools slowly developed within the textual culture of a formerly predominantly oral society without a significant domestic administrative literacy (Rohrbach 2014a).

## Researching Legal Systems as Mental Institutions

A liberal notion of distributed cognition includes social institutions and the external tools that support their cognitive processes (Gallagher 2013) and views social institutions, including legal ones, as 'mental institutions' (Gallagher and Crisafi 2009). The legal process that occurs is thus

a cognitive one – it is *cognition producing*, insofar as it produces judgments – and *cognition produced*, in the sense that it is the product of many (and perhaps generations of) cognizers, although it is not reducible to simply the cognitive processes that occurred in their individual heads. (Gallagher and Crisafi 2009: 48; emphasis in the original)

This conforms with Gallagher's (2013: 11) concluding definition that cognition 'is not about content' but that 'cognition is an enactive . . . engagement with the world . . . constitutionally shaped by tools, environmental factors, social practices, etc.' The process by which individuals' cognition is shaped by cognition-producing social institutions, cultural practices and their cognitive tools is termed 'cognitive enculturation' by Menary (2013). Cognitive enculturation means the individual learns how to participate in conventionalised activities of group cognition, for example, functioning as a member of a judicial panel.

The present study understands the medieval Icelandic legal system as such a cognition-producing social institution, or 'mental institution' (Gallagher and Crisafi 2009). The use of medieval Icelandic legal manuscripts understood as cognitive tools within such a mental institution is potentially twofold. The substantive law described in these legal manuscripts (whether applicable or applied) scaffolds what are here called 'jurisprudential cognitive tasks', that is, finding applicable law and forming an individual opinion on how to apply it. The procedural law in these legal manuscripts normatively describes the structure of the mental institutions which should constitute the legal system. While the subsequent section will give an overview of the cognition-producing process of the medieval Icelandic legal system, the next section first investigates how the two manuscripts discussed here scaffold jurisprudential cognitive tasks within this system.

## Social Cognition in the Medieval Icelandic Legal System

In order to understand how codices containing legal texts can function as a tool for distributed legal cognition, it is necessary to have an understanding of how the legal system in which they were used functions. Then the following section will describe the institutional context in which the two analysed codices were used.

The legal system of the Icelandic Commonwealth (930–1262) is well known from historical sources (such as diplomas and legal texts), medieval historiography (for example, *Íslendingabók*) and medieval historical literature (such as the Sagas of the Icelanders and the Contemporary Sagas). According to these sources, the main and most powerful actors in the legal system were chieftains (Old Norse *goðar*, sg. *goði*). Chieftains belonged to the social class of independent farmers owning their own households (ON *bændr*, sg. *bóndi*). Householders who were not chieftains were the minor actors of the Icelandic legal system. They could be nominated by chieftains as judges, and function as litigators or members of a jury.

All chieftains were members of the *lögretta*, the Law Council that had legislative functions. A chieftain could also function as the Law Speaker (ON *lögsgumadr*), who recited the procedural and constitutional laws every summer at the General Assembly (*alþingi*), and all material law during the course of three years on the same occasion. These recitals needed to be accepted as applicable law by the other members of the Law Council.

The agreement on applicable law and its wording was a collaborative cognitive activity, rather than a case of retrieving a verbatim record from a single individual's memory. Before the first writing down of laws in the winter of 1117–18, the recital was exclusively oral. Afterwards, written legal texts may have supported this recital (cf. Hoff 2012 on *Konungsbók* as such a tool). It is highly likely that the recital of laws (regardless of having been supported by a written text or not) was supplemented by the other members of the Law Council. The Law Council section of *Grágás* explicitly prescribes a sitting order that facilitates group discussion, and even demands that each member of the Law Council is supported by two of his assembly members (*þingmenn*) with whom he can confer:

There are to be three benches around the Law Council place, long enough for four dozen men to sit commodiously on each. That is twelve men from each Quarter who have seats on the Law Council to decide there on laws and licenses and the Lawspeaker in addition . . . It is also prescribed that each one of all the men with seats on the Law Council as now rehearsed must appoint two men, assembly men of his, to join the Law Council for discussion with him, one in front of him and one behind him. Then the benches are fully manned. (Dennis et al. 2006: 189)

The presence of so many participants and their opportunity for discussion could merely have been a symbolic act, solely granting the acceptance of the recital as much symbolic power as possible through the present social capital in the form of

chieftains and handpicked assembly members. The two codices of *Grágás* and its many fragments show, however, that legal norms were transmitted with varying degrees of detail as the manuscripts offer different amounts of information on legal norms (cf. Hoff 2012: 114–19). The varying degrees of detail in *Grágás* manuscripts indicate that there was no complete legal text that was precisely memorised and recited verbatim by any legal specialist. Thus, it was most likely necessary that various members of the Law Council participated in the Law Speaker's actualisation of applicable law in order to supply all information deemed necessary. The process of reciting laws in this way served not only to disseminate legal knowledge to the members of the Law Council and to legitimise the recited legal norms. The recital also served to ensure that as complete and comprehensive information as possible entered this process of dissemination and legitimisation.

The Law Council's function – perhaps scaffolded by codices such as *Konungsbók* – is thus to establish 'group knowledge', meaning a totality of knowledge larger than that of the individual members of the group (cf. Klausen 2015). The Law Council is in this way not cognition producing in terms of Gallagher and Crisafi (2009), but rather 'collaborative' regarding information retrieval in terms of Anderson (2015a: 156–8). The collaborative character of the Law Council's activity, however, does not live up to the more complex systems with specialised subsystems described by Anderson (2015a). The Law Speaker, as the primary source of information in the Law Council's activity, maintains to some degree the function of 'generating' knowledge, while the other members of the Law Council 'receive' it in terms of Anderson (2015a: 156–8).

The legal system's collective and distributed character is also visible in the structure of courts and tribunals. Courts and tribunals always included a group of an even number of judges rather than a single judge. The same went for juries and witnesses. If a judicial panel could not form a decision on a case backed by a majority, the decision was considered 'divided' and referred to the supreme court.<sup>4</sup> Establishing legal facts and their subsequent subsumption under applicable law was thus a collaborative cognitive activity, as was the acceptance of applicable law by the Law Council.<sup>5</sup> The activities of the Law Council, of judicial panels and of

<sup>4</sup> At spring assemblies and quarter courts, thirty-one or more of thirty-six judges had to agree on the court's decision. At the supreme court (the 'fifth court', *fmmtardómr*), a simple majority was sufficient.

<sup>5</sup> The medieval Icelandic legal system had certain weaknesses, which made judicial panels further relevant: a separate executive power did not exist, and householders had to draw on the influence and the forces of other householders, and especially chieftains, in order to execute justice (for example Sigurðsson 1995: 325–9). The *Konungsbók*-version of *Grágás* is rich on procedural provisions. The provisions impose harsh punishment on anyone interfering with court or tribunal proceedings (see K # 23, K # 25, K # 35, K # 38, K # 40, four provisions under K # 41, K # 58, four provisions under K # 117, K # 234, two provisions under K # 244; there are also four provisions found in *Staðarhólsbók*: St # 248, St # 252, St # 406 and St # 430). These provisions especially concern the behaviour of judges. Saga literature – while of debated historical value (cf. Sigurðsson 1999) – features many episodes in which judges are influenced by powerful chieftains (*Bolla þátr*, ch. 81 of *Laxdæla saga*; *Droplaugarsona saga*, ch. 5 and 6; *Eyrbyggja saga*, ch. 19, 29, 44;

groups of witnesses can in this way be termed ‘cognition producing’ in terms of Gallagher and Crisafi (2009), meaning ‘generative’ social cognition in terms of Anderson (2015a: 156–8).

## Textual Tools of Legal Cognition in Medieval Iceland

The laws of the Icelandic Commonwealth are collectively referred to as *Grágás* (‘Grey Goose’). This term refers to legal matter distributed across a larger number of manuscripts, including codices and fragments (Naumann 1998: 569).<sup>6</sup> The two codices analysed here, *Konungsbók* and *Staðarhólsbók*, are the only extant codices that comprehensively collect the laws of the Icelandic Commonwealth.

Written artefacts can be considered cognitive tools in that they function as information storage and enhance cognitive capacities (Anderson 2015b: 117–18). It is, however, relevant to note that ‘literate culture was built on an underlay, and interwoven with, aural-oral traditions’ (Anderson 2015b: 128).<sup>7</sup> One plausible function of the examined codices as cognitive tools might have been to scaffold the oral recital of laws before the Law Council and legal formulae during assemblies and court proceedings.

The two codices analysed here function as cognitive tools, but to different degrees in terms of making use of literacy as a technology of distributed cognition. *Konungsbók* is considered mainly to scaffold the preparation of an oral recital of laws before the Law Council (Hoff 2012: 82).<sup>8</sup> As later sections argue, the codex does not only support the recital of laws, it also aids the reader in understanding the systematic relationship between legal norms and their parts.<sup>9</sup> However, com-

*Flóamanna saga*, ch. 6; *Færeyinga saga*, ch. 5; *Grænlandinga þátr*, ch. 5; *Hrafnkels saga*, ch. 7, 8, 10, 11; *Landnámabók*, ch. 79 (67); *Njáls saga*, ch. 139; *Vápnfirðinga saga*, ch. 6; *Vatsdælasaga*, ch. 30; *Víga-Glúms saga*, ch. 18; *Vöðu-brands þátr*, ch. 4 and 11 of *Ljósvetninga saga*).

<sup>6</sup> The first official codification, *Háftiðaskrá*, which was accepted by the general assembly in the summer of 1118, is lost. There are, however, two extant comprehensive collections of the laws of the Icelandic Commonwealth, contained in the codices *Konungsbók* (GKS 1157 fol.; c. 1260) and *Staðarhólsbók* (AM 334 fol.; c. 1280). The collections vary in the degree of detail provided about legal provisions and one of the collections does not contain procedural and constitutional laws. Both manuscripts are dated to the end of the Icelandic Commonwealth and the beginning of the period in which Iceland was a dependency of the Norwegian crown, which entailed major legal reforms relevant to the understanding of their functions. After Iceland became dependent to the Norwegian crown in 1262, the laws were reformed in order to institute the Norwegian king as the highest power of the Icelandic society. The respective law code containing these reforms was *Jámsíða*, which was in use for ten years from 1271 to 1281. The subsequent law code, *Jónsbók*, became law in 1281.

<sup>7</sup> Accordingly, the text of *Grágás* follows various stylistic strategies (Naumann 1998: 572), of which some appear to actualise oral style and some written style (Naumann 1979: 168–71).

<sup>8</sup> A number of provisions in *Konungsbók* are truncated after the first clause, often combined with the provisions’ final words, leading to the above conclusion that *Konungsbók* was designed as a law speaker’s mnemonic device (Hoff 2012: 82).

<sup>9</sup> See the sections below on the structure of norms and the establishment of knowledge in *Konungsbók*.

pared to *Staðarhólsbók* it makes gradually less use of literacy as a technology of distributed cognition.

*Staðarhólsbók* is considered to have been used as a systematic overview of past and present legal provisions relevant for preparing a future law code, that is, *Jónsbók* (Rohrbach 2014b).<sup>10</sup> It provides knowledge in a similarly scaffolded way to *Konungsbók*. In addition, it contains numbered lists in the form of tables of contents, which provide knowledge on a more abstract level.<sup>11</sup> The codex also systematises legal norms and their parts in a more thorough way.<sup>12</sup> This does not diminish its use as information storage, as legal norms are more detailed (Hoff 2012: 114), and it contains more legal formulae than *Konungsbók*.

The existing theses about the functions of *Konungsbók* and *Staðarhólsbók* are grounded in the different arrangement of content and the content's extension, as well as the layout and style of the two codices. Building on previous analyses of the content, its arrangement, and the style and layout of *Konungsbók* and *Staðarhólsbók*, the following analysis describes how these codices functioned as tools for jurisprudential cognition. Prior to that analysis, a definition of jurisprudential cognition is presented in the following section.

## Jurisprudential Cognition

The scaffolding of jurisprudential cognitive tasks by the manuscripts is considered here to consist of three functions. The manuscripts' first function is to distribute knowledge to actors functioning within the legal system and aims at feeding into the 'group knowledge' building process (cf. Klausen 2015), as well as the process of 'group cognition' described above for the Law Council and for judicial panels (cf. Gallagher 2013; Gallagher and Crisafi 2009). The second function is scaffolding an analytical understanding of legal norms in order to ensure a valid understanding of applicable law. The third function is to ensure the applicable law's just application through 'cognitive enculturation' (cf. Menary 2013).

The process that is aided by these functions is called 'legal reasoning' in jurisprudential literature (cf. Lundmark 2012). In the present study, legal reasoning is called 'jurisprudential cognition'. This change in terminology aims at avoiding confusion between the description of legal reasoning in its own terms in legal studies, and the description of legal cognition in cognitive terms made in the present

<sup>10</sup> *Staðarhólsbók* contains both *Grágás* and *Járnsíða*; the *Grágás*-part, however, does not contain procedural and constitutional provisions found in *Konungsbók*, as they were considered obsolete under Norwegian rule (Rohrbach 2014b). While the procedural and constitutional provisions found in *Konungsbók* are missing in *Staðarhólsbók*, the provisions in the latter codex are longer, more detailed and more complexly constructed. *Staðarhólsbók* gives a more in-depth view of the applicable law of the commonwealth, supplying more legal knowledge. Both codices mark amendments by marginal signs, but this happens more thoroughly in *Staðarhólsbók* (Hoff 2012: 83, 90).

<sup>11</sup> See the section below on the establishment of knowledge in *Staðarhólsbók*.

<sup>12</sup> See the section below on the structure of norms in *Staðarhólsbók*; cf. Naumann 1998: 569; Hoff 2012: 92; Boulhosa 2014: 75.

study. The process of legal reasoning can be divided into five steps (cf. Lundmark 2012: 261–342): knowing what legal norms to find, knowing where to find these legal norms, finding the norms, understanding them logically, and applying them justly. The three functions of tools for distributed legal cognition (knowledge building, scaffolding of understanding, cognitive enculturation) can be related to the five steps of legal reasoning named above.

Enculturated cognition aims to ensure a just application of legal norms. This habituation presupposes knowing what to search for and knowing where to search for it, which is supported by a conventionalised body of knowledge. This body of knowledge is shaped by the organisation of the analysed codices in sections with specific subject matter, and in *Staðarhólsbók* also through numbered lists in the shape of pseudo tables of contents. The logical and paratextual organisation of legal norms in these codices further habituates the seeker of legal norms into thinking along a ‘scaffolded’ logical structure, ensuring the logical understanding of norms and finding the respective norms applicable to a specific type of factual situation.

The following sections examine the three functions individually. First, the three sections on the establishment of knowledge assess the way in which the two codices convey a body of legal knowledge to members of the medieval Icelandic legal system. This means looking at how these manuscripts could be used in order to locate and retrieve relevant knowledge, which entails an analysis of the macro-level of the organisation of the codices. Then, the three sections on the structuring of legal norms on the micro-level show how the codices scaffold the reasoning that the examined codices support when used for finding specific legal norms and charting applicable law regarding different types of factual situations. This is followed by the three sections on cognitive enculturation, which assess how far the just application of law is ensured by the codices and how this relates to the context of the mental institutions in which the codices were used.

## **Establishment of Knowledge: Finding Legal Norms**

The cognitive process of finding legal norms requires existing knowledge: the individual searching for legal norms needs to understand in which subject areas of the legal system the (real or hypothetical) case might raise issues and vice versa understand which facts of the case might become legally relevant under the legal system’s subject areas (Lundmark 2012: 268). In modern legal scholarship legal material is traditionally organised in a systematised fashion from general rules to specific rules. This is grounded for example in the tradition of the German *Begriffsjurisprudenz* or the Langdellian approach to the systematisation of legal norms (Lundmark 2012: 279). This also explains why existing scholarship and editions focus so much on establishing clear and homogeneous sections for *Grágás*.

However, an understanding of a medieval law book as a systematisation of norms raises expectations that might not be relevant to the style of jurisprudential cognition they scaffold. While *Grágás* uses more legal definitions than other

Nordic laws (Naumann 1979: 169), this collection of norms appears more ‘casuistic’ (Naumann 1979: 166), that is, it systematises rules in a case-by-case manner (Lundmark 2012: 263). In regard to the structure of articles in *Grágás*, norms are first grouped by subject matter, then according to types of factual situations. This forms a consistent way of systematising norms, though it is different from the modern tradition. Modern *Begriffsjurisprudenz*, for example, would group legal norms by the act they sanction or by the legal rights they protect, as, for example, in the German criminal code.

A further point puzzling the modern reader is the conflation of material and procedural law in *Grágás*. For example, criminal trial law and penal law are each contained within their own codes in German law. In *Grágás*, on the contrary, a detailed account of the relevant legal procedure follows each type of factual situation described within an article. Nonetheless, *Grágás* does group its legal material by subject matter, even if the systematisation differs from modern collections of statutes and legal encyclopaedias. From the point of view of textual macrostructure, individual legal norms in *Grágás* are organised into articles, which in turn form sections.<sup>13</sup>

What constitutes an article or a section is first and foremost a modern interpretation. The paratextual organisation of the two manuscripts analysed does not support the divisions made in modern editions. Thus, the division of sections in the *Grágás* manuscripts are evaluated as lacking a ‘clear systematic structure’ or as being imperfect by the implicit standard of *Begriffsjurisprudenz* (Boulhosa 2014: 75; Rohrbach 2014b: 101). This is explained by the manuscripts containing text copied from multiple exemplars (Boulhosa 2014: 94; Rohrbach 2014b: 112). The cognitive principle behind some seemingly unsystematically placed articles is explained in the following section on *Konungsbók*. A cognitive semantic analysis can explain the rationale behind the placement of these articles, and their scaffolding of jurisprudential cognition in *Konungsbók*. A special feature of *Staðarhólsbók*, which is extensively described by Rohrbach (2014b), is the inclusion of (not entirely reliable) tables of contents, which will be discussed in the section after that. The function of these tables is to provide an analytic overview over an area of legal regulation.

## Establishment of Knowledge in *Konungsbók*

Boulhosa (2014: 79, 84, 86) identifies several sections containing miscellaneous subjects or unexpected breaks in a section’s topic when dividing the text of *Konungsbók* according to subject matter, as it is done in Finsen’s 1852 canonical edition of the text. The following overview aims at assessing the semantic principles guiding the inclusion of certain articles into sections where they do not seem to fit the section’s general topic.

Article 112 on freeing slaves seems at first glance not to fit well in the homicide section, which comprises articles 86–112 in Finsen’s edition (1974). However, the

<sup>13</sup> The terminology follows Boulhosa (2014: 79).



preceding article 111 deals with the penalties and compensations to be made for killing another man's slave. It is thus thematically related by providing regulations on when a person is no longer to be considered a slave. While the other articles in this section can be considered cohyponymous under the common topic 'homicide', this article has a cohyponymous relation to its preceding article only under the shared topic 'slaves' and does not include the topic 'homicide'. The impression this systematisation makes is thus one of associative concatenation rather than one of complete and exclusively monothematic hierarchies.

The articles 78–85 on residency are an interesting case, as these articles can be interpreted as a separate section from the preceding assembly procedures (Boulhosa 2014: 86), contrary to Finsen's edition (1974). Residency, however, is also relevant to assembly procedures, as regulations on persons' attachment to assemblies, and the rights and responsibilities that follow therefrom, directly relate to their residency at households. Regardless of the plausible status of the articles on residency as an independent section, its placement right after the assembly procedures section follows the same semantic principle as the placement of the article on slaves after the last article of the homicide section, which considers killing of slaves.

This principle of adding relevant articles can also be seen at other places where Boulhosa (2014: 79) lists inconsistencies in Finsen's division of subjects. The miscellaneous subjects of articles 164–71 identified by Boulhosa (2014: 84) can be related to one another as dealing with warranty and liability arising from lending, hiring out or sharing private property. The miscellaneous subjects of articles 236–54 contain some articles which are grouped together by subject still. Articles 236–8 consider punishable insults, articles 241–3 rights, responsibilities and issues of liability considering different kinds of animals kept by a person (dogs, bulls, bears, wolves and foxes). Article 244 deals with private settlements and is accompanied by two articles on the value of silver and further standard values. The thematic link here is that private settlement usually involves compensation in material values. Articles 247–9 consider the rights of Norwegians and other foreigners in Iceland and Icelanders in Norway. Articles 250 and 251 consider claims and their suits.

However, more or less isolated individual articles in this section remain: article 240 on common rights and article 252 containing general provisions on calling witnesses. Four further articles seem like addenda, providing additional rules or variations of rules contained in other, systematically ordered sections of the text, that is, articles 236 and 239, as well as the section's very last two articles, 253 and 254. Article 236 seems to be an addendum to article 127 on gifts. Article 239 on found property relates to articles 170–1 on finding property. Articles 253 and 254 further inform and give variant wordings to articles in the betrothals section (articles 144–71). These two articles are marked as new legislation in *Staðarhólsbók*, so their separation might be due to compulsory considerations or due to a lack of systematisation, if full incorporation of new legislation was intended.

Apart from articles that appear to function as addenda, a meaning behind the placement of several of the seemingly unsystematically placed articles can be reconstructed. In terms of frame semantics, a section can be understood as com-

prising content subsumable under a ‘domain matrix’ (Croft and Cruse 2004: 26). In the example of the homicide section, the domain HOMICIDE would include a profile *homicide of slaves* that stands in opposition to all profiles of homicide of non-slaves. The profile *homicide of slaves* also profiles the domain SLAVERY, which in turn is profiled by *slaves vs. freedmen*. Since the latter profile, *slaves vs. freedmen*, is not directly connected to the domain HOMICIDE, the placement of an article on the definition of freedmen in a homicide section seems unsystematic from the point of view of modern jurisprudence. This meandering cognitive strategy, however, has its merit for the norm seeker. It organises legal knowledge in such a way that it is accessible for a norm seeker who has a specific factual situation in mind, and not a broad topic. This form of organisation thus favours the demands of practice over an encyclopaedic overview.

### Establishment of Knowledge in *Staðarhólsbók*

Special features of the *Grágás*-part of *Staðarhólsbók* are tables of contents and numbered rubrics, which give an overview of the content of a certain subject area (Rohrbach 2014b: 113). Tables of contents and numbered rubrics are used alternatively. Either a section has a table of contents with numbered titles, while the rubrics further dividing the section are unnumbered, or a section is not accompanied by a table of contents but has numbered rubrics (Rohrbach 2014b: 107).<sup>14</sup> These two measures were possibly meant ‘to make the Icelandic laws accessible to readers who were less familiar with them’ (Rohrbach 2014b: 118).

Such overviews of what sort of norms to expect in a section provide considerable cognitive scaffolding for a lawyer searching for relevant norms. However, the tables of contents do not always completely represent what actually follows, for example in the case of the land-claims section (Hoff 2012: 90), which diminishes their function as paratextual finding tools (cf. Rohrbach 2014b: 113).<sup>15</sup> This

<sup>14</sup> In the *Jámsíða*-part, sections are introduced by major and minor initials (Rohrbach 2014b: 115), and some changes of subjects are not marked by any layout feature, as opposed to the *Grágás*-part of the codex (Rohrbach 2014b: 115). These unmarked sections correspond to those sections in the *Grágás*-part that are introduced by tables of contents (Rohrbach 2014b: 116). One function of not providing tables of contents to certain parts of *Jámsíða* is probably of an economic nature: it saves a certain amount of work and material. Another one is to reduce the cognitive load of having to double check whether certain content might be referred to in more than one table of contents. A third function could be to direct the individual in search of norms to certain divisions and deter them from looking at other divisions considered less important or redundant. Considering that many procedural provisions were omitted from the *Grágás*-part, one might expect to encounter lack of mark-up in that part rather than in the *Jámsíða*-part. This strategy of collecting only the laws relevant for the construction of a following law code, *Jónsbók*, makes it probable that apart from saving work and material and reducing the cognitive load for the seeker of norms, the codex scaffolds jurisprudential cognition in a way that favours the content of *Grágás* over that of *Jámsíða*.

<sup>15</sup> This effectively renders these pseudo tables of contents numbered lists; cf. Riggsby’s chapter in volume 1 of this series (2018) on the use of tables and numbered lists as cognitive tools in the Roman Empire.

asymmetry seems less meaningless and careless from the point of view of extended mind theory. The mere listing of elements, such as headlines of articles, frees these elements from their embedment in a narrative or any further syntagmatic relation (Goody 1977: 81–2). Such a numbered list considerably reduces the cognitive load for the reader trying to get an overview of several elements. This is especially plausible for elements which are in complex relation to one another, such as articles in a law code. The function of these numbered lists is comparable to advance organisers, which are structured overviews of a longer, complex text's content. Such advance organisers have been shown to significantly aid readers' understanding of texts previously unknown to them (Ausubel 1960). This makes it highly likely that these pseudo tables of contents in *Staðarhólsbók* were used as cognitive scaffolding.

Both *Staðarhólsbók* and *Konungsbók* make use of the cognitive strategy of departing from a general topic, delving into the specific types of factual situations and adding relevant legal knowledge where it is presupposed by a legal norm. This strategy can also be traced on the micro-level of the thematic clusters that individual legal norms form within articles of a section, so called subdivisions of articles. The following section will examine the structure of *Grágás* on this level. The conceptual point of departure is the structure of individual legal norms, which aids an understanding of the way in which these norms form thematic subdivisions.

## **Scaffolding Legal Understanding: The Structuring of Legal Norms**

What is a legal norm? What elements can it consist of, and how is it nested within legal knowledge? From a semantic point of view, jurisprudence differentiates several types of legal templates, for example legal principles and definitions as well as primary and secondary rules (Lundmark 2012: 277). Primary rules grant legal subjects rights, impose responsibilities upon them, and regulate behaviour (Hart 1965: 78–9; cf. Lundmark 2012: 261). Secondary rules secure the primary rules' legitimacy. They change or create primary rules, and they confer powers to public institutions and private subjects regarding the regulation of the legal system (Hart 1965: 78–9). A legal definition defines a legal concept that might be referred to in one or several primary or secondary rules. Legal principles are general principles for critiquing the moral acceptability of primary and secondary rules. Legal principles also guide the combination of exclusive or contradicting norms relevant to a specific factual situation, and they support the equitable application of applicable law. A further kind of legal template are legal formulae, which again can be characterised as consisting of various subtypes. These formulae supply a formulaic text to be orated in order to perform a specific legal act (Naumann 1979: 156–63).

The following section focuses on the structuring of primary legal rules, while the section after that considers legal definitions. Taking a cognitive perspective on the structuring of legal rules can be justified by legal rules' function to regulate and conventionalise human behaviour. From a cognitive perspective, human behaviour is conventionalised in the form of goal-oriented, context-sensitive cognitive 'scripts'

(Abelson and Schank 1977). Legal rules, then, ideally would be interpretable in a way that they prescribe certain conventionalised behaviour in a specific context, or in that they implicitly or explicitly direct human behaviour towards a certain goal. The specific contexts contain factors that function as ‘conditions’ within complex scripts. This fits with the understanding in modern jurisprudence of how the template of primary legal rules functions. Primary legal rules are thought to consist of a ‘condition’ part and ‘consequence’ part (Lundmark 2012: 261). The ‘condition’ part can be considered to potentially address conditions in a cognitive script. The ‘consequence’ part, as far as it explicitly concerns human behaviour and not legal sanctions, can be considered to address the goal-oriented behaviour conventionalised in a cognitive script.

On a more formal level, the consequence part in *Grágás* is differentiated into two types based on its textual relation to the preceding norm-parts.<sup>16</sup> Connective norm-parts are semantically dependent on and syntactically coordinated with another part of a norm, especially a condition. Additive norm-parts are semantically presupposing information from another part of a norm but are syntactically independent from other norm-parts or only loosely coordinated with them through coordinating conjunctions, as for example ON *ok* (and) (Naumann 1979: 87–91). In *Grágás*, such complex norms consisting of condition and consequence are sometimes interspersed with legal definitions that clarify relevant legal terminology (Naumann 1979: 151–6), but statutes in *Grágás* are more often interspersed with relevant procedural rules, prescribing how to file and process a lawsuit relevant to a specific class or subclass or factual situation.

The following two sections show how textual cohesion of thematic clusters of legal norms is marked syntactically and graphically. Apart from the frequent and basic strategy of scaffolding a coherent understanding of such norm clusters, it is shown how legal norms are structured in a way that enables them to normatively influence crucial elements of cognitive scripts, both ‘conditions’ and ‘events’ (Abelson and Schank 1977: 41–6).

## The Structure of Norms in *Konungsbók*

Detailed analyses of how layout and syntax scaffold the understanding of legal norms in *Konungsbók* remain a desideratum (cf. Boulhosa 2014: 93). An analysis of the land-claims section (*Landbríðabáttir*, Finsen 1974: II, 79–139, # 172–220) conducted in this section shows how legal norms are very consistently marked up in the manuscript, and how hierarchisations between individual norms are at some points indicated by the layout of the manuscript.

On the level of individual legal norms, a very consistent mark-up can be observed through notable initials. Notable initials are majuscule and minuscule graphs,

<sup>16</sup> Apart from these complex norms, *Grágás* also contains independent norms that syntactically and semantically are independent from other norms or norm-parts (Naumann 1979: 147–51). These simple norms, however, are not relevant to the example analysis conducted in this section.

which are visibly larger than regular graphs in the fluid text. They are sometimes highlighted with a red-ink nuance. If they appear at the beginning of a line, they are indented to the left of the text block. The optical impression is that they are easy to spot when skimming the text. Notable initials are in Boulhosa (2014: 90) characterised as ‘punctuation’, indicating ‘breaks in the syntax of the text. At the same time, they fall at the beginning of new provisions.’ The following analysis of the land-claims section shows that the smaller textual units indicated by notable initials, which are identified as provisions by Boulhosa (2014: 90), usually correspond to legal norms as typified in Naumann (1998). An exception to this pattern is discussed to show how syntax and mark-up are used to scaffold an analytical understanding of clusters of legal norms, even where it formally does not fit the text.

On the level of longer groups of legal norms that deal with a specific type of factual situation, articles are delimited by minor initials (Boulhosa 2014: 88). Regarding their content, such articles can be further divided into groups of legal norms that deal with subtypes of such situations. While subdivisions are recognised in modern scholarship (and are for example marked by paragraph breaks in Dennis et al. 2006), they are rarely marked up in the manuscript of *Konungsbók*. The following analysis discusses individual instances where clusters of legal norms are structured into a subdivision of an article through mark-up with notable initials with and without red-ink nuance. This mark-up with notable initials provides cognitive scaffolding for the understanding of subtypes of factual situations as well as the relation to legal knowledge and general encyclopaedic knowledge.

The standard case for marking up a subdivision of an article is exemplified by the first subdivision of article 172 on rights to claim land and their expiry.<sup>17</sup> Line breaks and numbers (‘segment 1’ to ‘segment 4’) were added where notable initials occur. The first line is marked up by a minor initial, which introduces article 172.

[Segment 1:] It is prescribed that where someone grows up with a land-claim to assert, then he is to start asserting it when he is sixteen winters old.

[Segment 2:] If he has more lands to claim than one, he is to assert a claim to one each summer until all are claimed, unless he wants to claim more than one at the same time.

[Segment 3:] If he starts later than that or allows an interval to occur, he must still have asserted his claims in the summer after he becomes twenty.

[Segment 4:] His claims are then void and he has no case to bring in them thereafter.<sup>18</sup>

The mark-up with notable initials shows how individual legal norms are highlighted in compounds of thematically coherent legal norms. This separation of

<sup>17</sup> Finsen 1974: II, 76, # 172; Dennis et al. 2006: II, 97, § 172.

<sup>18</sup> Dennis et al. 2006: II, 97, K § 172 with own line breaks and numbering.

norms adds to the scaffolding that aids the understanding of the legal structure in the text. Other obvious scaffoldings are the syntactic structuring in condition and consequence parts of individual legal norms on the textual level: ‘if . . . , then . . .’. There are, however, notable details where the graphic mark-up deviates from the verbal scaffolding.

The subdivision cited above is divided into four segments through mark-up with notable initials. These four smaller parts, however, do not correspond to four legal norms, if analysed in Naumann’s (1998) terms. Only the first three smaller parts would be individual complex legal norms. The last one of these smaller parts (‘His claims . . .’) would constitute two connective norm-parts belonging to the previous, third legal norm:

- Norm 1: condition (‘It is prescribed that where’) + connective part (‘then . . .’);
- Norm 2: condition (‘If . . .’) + connective part (‘then . . .’) + additive part (‘unless . . .’);
- Norm 3: condition (‘If . . .’) + connective part (‘then . . .’) + connective part (‘His claims are then’) + connective part (‘and . . .’).

Semantically, the last two connective parts of norm 3 (that is, segment 4) could constitute their own norm, consisting of a condition and a consequence:

- Norm 4\*: If his claims are void, then he has no case to bring in them thereafter.

The mark-up aims at chunking the subdivision into four shorter parts as opposed to the textual structure of three parts. This strategy is aided on the syntactic level of the individual clause. The second last norm-part, ‘His claims are then void’, features an alternative word order compared to other consequence parts in this subdivision. Instead of beginning with the conjunctive adverb ON *þá* (‘then’), as the other consequence parts do, the predicative adjective *ónýt* (‘void’) is topicalised: ‘Onyt er brigð hans þa’ (Finsen 1974: II, 76) instead of \*‘þa er brigð hans onyt’. It can be assumed that less complex legal norms are easier to process. This instance shows not only the legal understanding behind the mark-up but also how the mark-up is used to scaffold the reader’s analysis of clusters of legal norms.

Considering legal norms as intended to explicate and normatively influence conventionalised scripts, parallels between the legal language of this section and the building blocks of cognitive scripts can be drawn. The condition parts present properties of ‘actors’ or ‘props’ that are persons and objects in script terminology. These properties (‘conditions’) determine the future actions (‘events’) prescribed by the legal norm, which are necessary in order to attain the anticipated ‘result’, that is, the fulfilment of the legal claim to landownership.

Such scaffolding can also be observed at other subdivisions of article 172. While all legal norms are usually marked up with notable initials, some norms are further emphasised through red-ink nuanced notable initials, even though they do not introduce a subdivision of an article. Looking at the third subdivision, one function

of this mark-up with red-ink nuanced notable initials versus non-nuanced notable initials can be demonstrated.

The third subdivision of article 172, on unlawfully sold land and the warranty arising from it, is further subdivided through a red-ink nuanced notable initial. It marks the beginning of the third last legal norm of this subdivision.<sup>19</sup> The legal norm in question follows a sequence of verdicts a panel has to give and precedes a summarising legal norm on how to adjudge land according to the panel's verdict and a final legal norm adding a provision on how to deal with the land having been sold several times. The following, extra highlighted legal norm in question supplies relevant, general encyclopaedic knowledge about the proper proceeding for selling one's land when encumbered by debt: first tenant farms and rights to other persons' lands, then the main estate.

Another function of mark-up with red-ink nuanced notable initials can be observed at the sixth and final subdivision that regulates the use of woodland. Here, the first notable initial of this subdivision is nuanced with red ink and slightly larger than the other, non-nuanced notable initials. This mark-up thus indicates a hierarchy between norms, highlighting the first norm, which introduces the main condition (there are woods on the transferred claimed land), on which the following two norms expand, discussing further more specific factual situations for this case-type (use of driftwood and warranty for overexploitation of the woods).

Such mark-up indicating thematic coherence through hierarchisation of norms is, however, quite incoherently used. For example, the preceding fifth subdivision on warranty for buildings on the transferred claimed land solely features such red-inked notable initials. The fourth subdivision on penalties and court decisions features a red-inked notable initial at the second norm, which begins directly after a page break. The preceding first norm of this subdivision is only marked up with a non-nuanced notable initial. As mentioned above, this inconsistency might stem from *Konungsbók* having been copied from several exemplars with varying layout (Boulhosa 2014: 94). Even though the use is inconsistent, the mark-up is used for scaffolding legal cognition in various ways, such as highlighting the presentation of relevant encyclopaedic knowledge, or where the text goes on to discuss another factual situation, and where more specific scenarios of these situations are discussed.

Mark-up and syntax are used as two ways for structuring legal norms in order to scaffold a reader's understanding of them. These features also highlight crucial elements of legal norms regarding their relation to cognitive scripts. The condition parts of legal norms can be related to the accordingly named element in scripts called 'condition', and the consequence parts of legal norms prescribe either certain 'events', that is, actions of actors participating in the script, or 'results', that is, ownership over a 'prop' denoted by the script (in the present case, landownership). Finally, what was addressed as a more specific scenario of a factual situation above

<sup>19</sup> The initial is also marked as more notable than other notable initials in Finsen's (1974: II, 78, # 172) canonical edition of the *Konungsbók*-version of *Grágás*. The canonical English translation (Dennis et al. 2006: 99, § 172) also inserts a paragraph break at this point.

can also be regarded as a ‘scenario’ in the script, that is, a specific subtype of a more general script.

## The Structure of Norms in *Staðarhólsbók*

The mark-up in *Staðarhólsbók* shows no significant difference from *Konungsbók*. However, articles are more regularly marked by initials than in *Konungsbók* (cf. Rohrbach 2014b: 103). Furthermore, through the use of minor initials, a two-level hierarchisation of norms occurs far more frequently than in *Konungsbók*. One example of this is the description of different types of major wounds (fol. 51va–b; cf. Finsen 1879: 298–9, # 168–9). The initial legal norm penalising manslaughter is marked by a minor initial. The following legal definitions of types of major wounds are marked up with notable initials for the first letters of their condition parts. The structuring in this subdivision is so thorough that norms 3–6 of eight also start on a new line.

In terms of cognitive script analysis, such legal definitions describe properties (‘conditions’) that are relevant for determining the following events prescribed in the legal norm. In this way, they function like condition parts of legal norms in the previous section. The main difference between legal definitions and condition parts is their textual syntactic positioning. Legal definitions are syntactically independent and are not syntactically linked to consequence parts. They are, however, highlighted in general, just as condition parts are. This indicates that their similar cognitive (and jurisprudential) function is taken into account regarding the codex’s provision of scaffolding.

The structuring of norms on the micro-level are more thorough in *Staðarhólsbók* than in *Konungsbók*, as the structure of legal norms is more frequently highlighted, and this kind of scaffolding extends more systematically to legal definitions. This corresponds to the more accessible structuring of sections on the macro-level in *Staðarhólsbók* compared to *Konungsbók*, as was demonstrated earlier. So far, *Staðarhólsbók* has a stronger jurisprudential character than *Konungsbók* in that it provides more scaffolding in the structuring of norms and sections and is more accessible through its pseudo tables of contents. Regarding the question of scaffolding of oral performance, *Staðarhólsbók* contains far more legal formulae written in first person in the land-claims section’s procedural part than *Konungsbók*. This contradicts the argument led by Hoff (2012) that *Konungsbók* must be oral because it shows fewer features associated with written style and more associated with oral style.

## Cognitive Legal Enculturation: Applying Legal Norms

Legal interpretation seeks to determine the meaning and purpose of legal norms (Lundmark 2012). Legal norms, however, rarely explicitly state their purpose (Lundmark 2012: 330). In modern jurisprudence, non-statutory material such as preparatory works or a common judicial sense of equity are presuppositions for



the interpretation of the purpose of legal norms. Such interpretative approaches are called a historical method or a teleological method (Lundmark 2012: 327–39). There is, however, no explicit information on the purpose of legal norms in *Grágás*. For the historical reader, the purpose of a legal norm remains implicit. Furthermore, preparatory works are lacking for the Icelandic Commonwealth, as written deliberations or decisions of the legislative body, the Law Council, are not extant, if they ever existed.

Where a legal decision cannot be made based on statutory material, case law or preparatory works, legal principles become relevant (Dworkin 1986). From the perspective of legal realism, such principles believed in by judges as well as their biases are relevant factors entering judges' cognition (Ross 2013: 86–98, § 91). When considering judges as a social group, their shared principles and biases are referred to as judges' ideology (*ibid.*). While information on the purpose of legal norms is lacking for the Icelandic Commonwealth, there is a short normative text preserved in the Staðarhólsbók-version of *Grágás* which prescribes a common habitus for judges, the *Dómakapítuli* (Rohrbach 2014b: 118–22). While the following section describes the basis on which a historical reader might interpret the meaning and purpose of a norm in *Grágás*, the section after that discusses the habitus prescribed in *Dómakapítuli*.

## Cognition Enculturation in Konungsbók

While it might be intuitive for a member of the Icelandic Commonwealth to see the meaning and the purpose of a legal norm, a rule like the following basically remains more opaque by itself: 'It is lawful to castrate vagrants and there is no legal penalty even if they get lasting injury or death from it.'<sup>20</sup> A legal definition of 'vagrant' (ON *gongumaðr*) found in a different section of *Konungsbók* does not inform on the connotation of a vagrant:

If a man moves about on pointless journeys within a Quarter for half a month or more, the penalty for it is a fine, and similarly if he does it for a month in all and leaves the Quarter with no purpose except to relieve his own household or the one he is attached to. If a man moves about and accepts charity for half a month or more and takes night lodgings where he can get them, he is a *vagrant*. If a man turns into a *tramp* – a healthy man and so able-bodied that he could get lodging for a whole year if he would do the work he is capable of – his penalty is full outlawry. (Dennis et al. 2006: I, 135, K § 82; cf. Finsen 1974: I, 140, # 82; own emphases)

The concatenation of the legal definitions of 'tramping' and of 'vagrancy' implies that the concepts are related to one another. This allows for the contextual interpretation of the meaning of 'vagrancy', which is that 'vagrancy' is a less serious

<sup>20</sup> Dennis et al. 2006: II, 219, K § 254; Finsen 1974: II, 203, # 254; cf. Finsen 1879: 151, # 117.

criminalised condition than ‘tramping’ (ON *húsgangsmadr*, ‘tramp’). This relation is implied by ‘vagrancy’ being relatively mildly penalised with a fine in contrast to ‘tramping’ being penalised with the hardest penalty of the medieval Icelandic legal system, full outlawry.

Further constructing the relation between ‘vagrancy’ and ‘tramping’, the decisive difference between the crimes seems to be the ability to partake in the endeavour subsistence farming. Another legal definition confirms this assumption. A definition of a certain subtype of vagrants, ‘perverse vagrants’, matches the definition of a tramp in the provision above:

It is perversity [ON *ómenzkr*, ‘unmanliness, non-norm conformant behaviour’] if a man or woman goes as a vagrant from house to house because of indolence or such other failings as make good men unwilling to have them. (Dennis et al. 2006: II, 52, K § 143; Finsen 1974: II, 28, # 143)

While the meaning of ‘vagrant’ in article 254 cited above is now clearer, the purpose of the legal norm on castration of vagrants can only be related to penalise persons not participating in farm work. This purpose is rather vague and relies on pre-existing knowledge in the historical reader.

If a historical reader is familiar with medieval Icelandic society, they know that subsistence farming is the central occupation of all able-bodied persons. The legal discourse further makes it clear that fishing is considered an irregular activity and that all people are to be attached to a farm as workers or owners and their family (Hastrup 1985: 105–35; cf. Hastrup 1990: 45–79). People unfit to work are termed *ómagar* and are considered a burden for the farm they were attached to as well as the commune, which was required by law to subsidise unattached *ómagar*. Having this pre-existing knowledge, the historical reader probably can derive the legal provision’s purpose.

The provision’s purpose would be that the castration of vagrants is supposed to prevent the commune from having to support a vagrant’s otherwise unsupported children. Another hypothesis, not necessarily excluding the former, presupposes that vagrants are also thought to be rapists. This assumption is plausible, since ‘concatenation of vices’ (*Lasterverkettung*, Decker 2008: 70) is a common figure of thought in Othering. This lack of supply of purposive knowledge, however, makes a legal text vulnerable to sociocultural change that leads to a provision’s purposes being forgotten. Even if a purpose is provided to aid legal interpretation, sociocultural change might lead to a legal norm’s purpose no longer being considered ethically acceptable by society as well as legal practitioners at some point (Lundmark 2012: 331).

The scaffolding of legal interpretation as a part of legal social cognition in the case of the legal system of the Icelandic Commonwealth seems to be limited to a description of rules and does not include the purposive aspect of the legal system. This lack of scaffolding of legal interpretation might be grounded in the homogeneity of medieval Icelandic social organisation and its ruling class, the landowning

farmers (*bændr*), who alone were legal subjects and legal actors in the society's legal system. The group cognition inherent in the activity of the Law Council and judicial panels described above might make the externalisation of purposive knowledge less vital for the legal system to function in the intended way. This could explain why the laws of *Grágás* are lacking purposive information.

The *Dómakapítuli* in *Staðarhólsbók*, however, provides general points about the legal system's purposive aspects. Among other things, the *Dómakapítuli* normatively describes a desired cognitive habitus for judges. The text also gives a definition of equity. In modern jurisprudence, equity is a presupposition for an interpretation of the purpose of a legal norm through a historical and/or teleological interpretative method of interpretation (Lundmark 2012: 327–39).

### Cognition Enculturation in *Staðarhólsbók*

The *Dómakapítuli* functions as a prologue to the collections of laws contained in *Staðarhólsbók*. It explicitly addresses the issue of legal interpretation: 'It is not, as many a fool has maintained, that they [sc. the judges] do nothing more than declare the law' (Rohrbach 2014b: 120). On this background, the prologue prescribes judges how to carry out their duties:

[t]he court is appointed to examine and evaluate causes and crimes and temper the judgment according to the circumstances of the case in such a way that the assemblymen and the justice find most just before God and they will be responsible before God according to their consciences. (Rohrbach 2014b: 120)

The *Dómakapítuli* further discusses the virtues of a judge: 'forgiveness, mercy, grace' (*miskunn*), 'truth, verity' (*sannyndi*), 'righteousness, justice' (*réttvísi*), and 'peacefulness' (*fríðsemi*) (cf. Rohrbach 2014b: 121), which sketch a framework for the desired cognitive habitus of judges.

It is here relevant to note that the prologue focuses on judges and assembly members (from which judges were chosen by the chieftains) alone. The prologue does not address other kinds of actors in the medieval Icelandic legal system. This conforms to the strong focus on the behaviour of judges during the Icelandic Commonwealth, shortly after the end of which *Staðarhólsbók* was written. As described above, *Grágás* is rich in procedural provisions on the behaviour of judges in court, apparently in order to ensure due process. Based on these observations, *Staðarhólsbók* also serves to enculturate legal cognition – or at least judicial cognition, which in the eyes of legal realism is the most relevant cognition to access in a legal system (Ross 2013: 86–98, § 91).

## Conclusion: The Extent of Scaffolding of Jurisprudential Cognition

While the structure of both codices presupposes a conventionalised body of knowledge, a clearer didactic structuring is observed in *Staðarhólsbók* than in *Konungsbók* (cf. Boulhosa 2014; Rohrbach 2014b). However, an individual searching for legal norms finds them in both codices structured by a general topic under which certain facts of a given factual situation might become relevant. Nonetheless, the system of categories is different from the modern one. Constitutional, public, private and penal law, national, international and supranational law are not categories by which sections are grouped. Even though individual sections are readily subsumable under a modern category of law (for example, the assembly section under constitutional law), penal law sections include private law and family law sections and dependent sections include penal issues such as incest. This meandering system might be considered associative and therefore either a trace of orality or an early stage of written organisation of an oral source (that is, *Verschriftlichung*). This is all speculative and presupposes that oral texts are associative and meandering.

It might do the texts more justice to speak of a system of order that departs from given factual situations, from which more and more specific situations are derived. This cognitive strategy to depart from the general and deal with unfolding more specific types of situations can also be found in modern law codices. The German criminal code, for example, is divided into two parts, a ‘general part’ (*Allgemeiner Teil*) and a ‘special part’ (*Besonderer Teil*). The general part defines normatively how a crime is to be analysed and assessed, as well as defining the legal consequences for certain types of crime. The special part, which deals with the individual legal rights protected by criminal law, likewise departs from the general type of factual situation, and then deals with a type of more specific factual situation. *Grágás*, by contrast, does not group legal norms by the crimes they deal with but by types of factual situation.

A further cognitive strategy in *Grágás* deviates from modern principles of organisations of legal material. Legal norms are included where they fit certain types of factual situations, even though they do not fit the overall subject matter of a section. This was shown for the otherwise misplaced last norm attached to the homicide section, which dealt with the transition from slave to freed person, where the preceding norms dealt with the killing of slaves. While modern legal encyclopaedias would most likely spread the legal norms on the homicide of slaves and the status of a person as a slave over a penal law section and a private law section, *Konungsbók* organises legal knowledge according to a specific type of actual situation adding in some places relevant legal knowledge that a rule presupposes.

The same cognitive strategy, to depart from general rules and delve into ever more specific types of factual situations, is observed on the micro-level of smaller clusters of legal norms, that is, subdivisions of articles. Breaking down a subdivision of an article into its constituent complex legal norms is scaffolded by notable initials at the beginning of a new norm. The layout of some subdivisions of articles

and some very short articles further helps in understanding the hierarchical relation between the individual legal norms contained in them through the use of, for example, red-ink nuanced notable initials or pen-flourished initials.

While the legal norms of *Konungsbók* and *Staðarhólsbók* do not scaffold legal interpretation, the *Dómakapítuli* in *Staðarhólsbók* serves to enculturate judicial cognition. This underlines Rohrbach's (2014b) characterisation of *Staðarhólsbók* as a model for a new law code. Apart from this normative prologue, the two codices of *Grágás* only allow for a study of positive law. They do not contribute to any discourse on equity in any meaningful way. This discourse is led by judges, members of the Law Council, their assistants and the Law Speakers without the support of any cognitive tools we know of. All these actors in the medieval Icelandic legal system belong to the oligarchic ruling class of householders – a class so homogeneous that it probably could ensure a quite uniform cognitive culture of equity, or 'judges' ideology' in terms of Ross (2013: 86–98, § 91). This judges' ideology was further scaffolded by the group cognition implemented in the court structure, where rulings and decisions were always passed by judicial panels, and in the structure of the Law Council, which relied on opinions formed by all chieftains, which in turn are cognitively supported by two assembly men each.

In the way that *Konungsbók* and *Staðarhólsbók* presuppose the normative ideology of the medieval Icelandic judiciary, they can be considered jurisprudential tools as opposed to judicial tools for legal practice. A counter-image to the two codices is the early modern Icelandic legal treatise AM 60 8vo from the seventeenth century (Kálund 1889–94: II, 365). The codex shows how a judicial tool intended for courtroom situations looked.<sup>21</sup> The codex contains a collection of legal formulae, for example, for setting a thing, terminating a thing, calling witnesses and so on. It contains difficult to memorise items such as tables of fines and standard values. An alphabetic register aids the finding of relevant content case law contained in the second part of the manuscript.<sup>22</sup> There are also three prayers contained in the manuscript that normatively refer to Christian values as guiding principles behind making legal decisions, especially in hard cases (for example, the 'judge's prayer', *Dómenda bæn*, fol. 13r).

AM 60 8vo illustrates the difference between such a practical tool, on the one hand, and *Konungsbók* and *Staðarhólsbók* on the other. *Konungsbók* and *Staðarhólsbók* are tools which scaffold jurisprudential cognition rather than judi-

<sup>21</sup> The author's search in the relevant collections in Reykjavik and Copenhagen has not resulted in finding manuscripts matching up to the structure in compilation, layout and paratextual tools found in AM 60 8vo, though there are manuscripts that do contain a similar selection of text types, such as AM 199 4to, AM 201 4to, AM 62 b 8vo and, to a certain extent, AM 65 a 8vo. There could be more manuscripts, however, and a comparative study of these manuscripts would greatly enrich the understanding of the development of legal written culture in Iceland. I want to thank Guðvarður Már Gunnlaugsson (Reykjavik) for his advice regarding this search.

<sup>22</sup> Case law (*dómar*, 'judgements') and amendments (*réttarbætr*, 'law improvements') are also included, while the texts of its contemporary law code, *Jónsbók*, are absent. In this respect, the codex also functioned as an addendum to *Jónsbók*, even though *Jónsbók* codices also included amendments.

cial practice. The lack of scaffolding for the application of legal norms to concrete factual situations could be an indication of the group endeavour that the legal system of the Icelandic Commonwealth was, and that cognitive enculturation and habituation did not happen through these written tools, but rather in addition to them. This situation changed slowly as administrative literacy developed. As shown in Rohrbach (2014a), administrative literacy was not a tool the Icelandic Commonwealth depended upon. Administrative literacy gradually became more implemented after Iceland became integrated into the Norwegian crown's administrative structures. In other words, the medieval Icelandic legal system had a sufficiently effective form of oral social cognition, so it was not necessary to develop and use textual cognitive tools, such as codices, to a larger extent than what *Konungsbók* and *Staðarhólsbók* offered, until a different administrative culture was imposed.<sup>23</sup>

<sup>23</sup> Cf. Riggsby's chapter in volume 1 (2018) on the confined contexts for use of tables and lists in ancient Roman administration.

## Horse-Riding Storytellers and Distributed Cognition in Chaucer's *Canterbury Tales*

*Guillemette Bolens*

*may my mind stroll about hungry  
and fearless and thirsty and supple*

E. E. Cummings

### **Minding**<sup>1</sup>

In a lecture titled 'The real reason for brains', neuroscientist Daniel Wolpert (2011) states that

We have a brain for one reason and one reason only, and that's to produce adaptable and complex movements. There is no other reason to have a brain. Think about it. Movement is the only way you have of affecting the world around you. Now, that's not quite true. There's one other way, and that's through sweating. But apart from that, everything else goes through contractions of muscles. Think about communication – speech, gestures, writing, sign languages – they're all mediated through contractions of your muscles. So it's really important to remember that sensory, memory and cognitive processes are all important, but they're only important to either drive or suppress future movements.

Biological organisms have a neurological system topped by a brain when their survival depends on their capacity to move autonomously.<sup>2</sup> Typically, trees don't have a brain. If the brain is for movement, then the perspectives of embodied,

<sup>1</sup> This research was supported by a grant from the Swiss National Science Foundation awarded to the author of this chapter for a project titled *Kinesic Knowledge in Anthropology and Literature* (Division I, n°100016\_150264).

<sup>2</sup> Wolpert (2011) gives the example of the sea squirt (*Ascidacea*): '[A] rudimentary animal, has a nervous system, swims around in the ocean in its juvenile life. And at some point of its life, it implants on a rock. And the first thing it does in implanting on that rock, which it never leaves, is to digest its own brain and nervous system for food. So once you don't need to move, you don't need the luxury of that brain.'

embedded and enactive cognition are easily granted. Cognition is to mind our steps, adaptably, all the way to the highest levels of complexity and abstraction. The mind *occurs*, in the sense that it is not a thing but a relational process. It is the dynamic possibility of procedural interactions with the environment via movements and cognition. Operating in constant relation to sensorimotor contingencies, the mind primarily takes place by processing perceptions and sensations, which are geared towards action (Noë 2004) and kinesic interface (Bolens 2012b, 2016). No mind exists that is not already embedded in a concrete, sensorimotor environment, and triggered by intra- and extra-corporeal distributed factors (Anderson 2015b; Wheeler 2005).

Humans strive to adapt their environment to their pragmatic and cognitive needs (Wheeler and Clark 2008). Taming animals has played a crucial role in this regard, with a massive impact on the history of mankind. The taming of horses in particular modified humans' relation to the ground and to speed, altering the limits of humans' sensorimotoricity, mobility and power of action (Clutton-Brock 1992; Kelekna 2009). Anthony Chemero claims that affordances available in an animal's niche and the animal's sensorimotor abilities 'are not just defined in terms of one another . . . but causally interact in real time and are causally dependent on one another' (Chemero 2011: 151). This applies to the human species as much as to other animal species. The human act of taming other animals, such as horses, and of learning to ride them (which took a remarkably long period of time) may be seen as an instance of the causal interaction and dependence between humans and their niche, a niche expanded by means of a new affordance (a biological vehicle), inducing modifications in human sensorimotor potentials. The created possibility of horse riding changed humans' perception of space and time, as well as their impact on their environment, and their relation to their own agency:

By the first millennium bc the world was opened up to the horse-rider who could travel for the first time at a speed that far surpassed that of the ox-cart, or even of humans when running their fastest. In the fourth century bc Alexander the Great (356–323 bc) on his horse Bucephalus conquered two million square miles of the ancient world. (Clutton-Brock 1992: 12)

On a different front, turning their environment into an improved niche entails that humans keep other humans close by. Not only because the latter may perform useful complementary movements (especially and vitally in one's infancy), but also because humans relate to and probe their environment by means of movements that include utterances – verbal and gestural (Kendon 2004). They need to utter and be uttered back to. Intersubjective relations are not optional, they are vital for the human species. Furthermore, in order for vocal, verbal and kinesic probing to be productive, it must feel meaningful to oneself and others. So that they may feel meaningful, human utterances (sounds, vocalisations, gestures and expressive moves) must relate pertinently to a context and the possibility of action – and that is true even when the action is fictional, hypothetical, symbolic, mythical or



ritualistic.<sup>3</sup> In fact, it may be argued that the very function of the fictional, hypothetical, symbolic, mythical and ritualistic is precisely to inject manageable meanings into reality.

To this effect, cultures develop. Cultures are arch-artefacts meant to convey dos and don'ts relative to a myriad of registers, and to control actions by means of tangible and intangible manifestations (e.g. explicit written laws and implicit social rules). Cultural forms and manifestations are beneficial in that they channel systems of meanings (make sense in predictable ways), which may then be transmitted to other groups and later generations. Far-reaching cognitive environments are created by such cultural forms and manifestations, along with a feeling of stability in time and space, which paradoxically affords the possibility of imagining and producing change. Cultural forms and manifestations help turn a psychophysical niche into a society, that is, a large-scale relational environment. The discipline of History may be seen as an effort to retrieve retrospectively the coherence of former systems of meanings, in order to explain past chains of actions.

In human cultures, it is a pervasive fact that those who train to *move well* are particularly valued. In the 'good-mover, or skilled mover' category, the list of subcategories is wide-ranging (for example, warriors, athletes, dancers, comedians, surgeons, craftsmen and so on). It includes skilled movers whose action is talking. In Homer, Achilles runs fast and Odysseus speaks well.<sup>4</sup> Both are heroes. The ultimate goal of a good speaker's action often consists in convincing his interlocutors in order to trigger and control actions in others (as with lawyers and politicians), or in transmitting and teaching relevant information, whatever the field of knowledge may be.<sup>5</sup> These two subcategories of skilled movers through talking include all kinds of storytellers, whether their stories are pedagogical, mythical, religious, judicial, political, philosophical, literary, performed orally, written in a book, filmed or mediated through the web. Storytelling is a particular form of action, which requires

<sup>3</sup> I use 'meaning' and 'meaningful' in the sense expounded by Todd Oakley: 'I do not use the term as philosophers of language have traditionally used it: either to describe referential properties of words, or truth value sentences, or the linguistic encoding of a speaker's intention. Meaning is paradoxically all and none of these things: it is all these insofar as the term can be felicitously used to stipulate the senses and referents of words, of asserting truth or falsity, and of displaying a speaker's intentional stance; it is none of these insofar as it emphasises the fact that meaning is the ephemeral product of an activity not an enduring state or thing, that senses of words are continually being constructed and reconstructed and not fixed "in" the signs themselves, that truth or falsity of sentences are rarely an overriding concern in human communication, that a speaker's intentions are not hers alone and perhaps most important, that meaning does not fall under the proprietary control of language proper, but rather is an outcome of attention to information. Therefore, the base elements of meaning are not words and sentences, *per se*, but interpersonally experienced selections of signs' (Oakley 2009: 61–2).

<sup>4</sup> The *Iliad* is based on a logic of embodiment in which sensorimotoricity is first and foremost. Exceptional velocity is key to the characterisation of such a hero as Achilles, whose Homeric epithet refers seventy times to this ability in him (Bolens 2007).

<sup>5</sup> The concept of *actio*, that is, the way an orator moves and speaks while pleading, is of decisive importance according to Quintilian (Bolens 2011b).

skill (within orality as much as literacy) and which is meant to impact the cognition, knowledge and behaviour of other humans because of the way it provides a sense of possibilities and impossibilities. Storytelling may be an expression of the cognitive faculty of hypothesis generation (Lange et al. 2013; Magid et al. 2015). However, it may also serve to block such a faculty and promote vested scenarios with the force of inescapable evidence (Salmon 2008; Pélissier and Marti 2012).

In fourteenth-century England, Geoffrey Chaucer (c. 1343–1400), son of a vintner, himself working as a civil servant, diplomat and courtier, wrote a story about storytellers (P. Brown 2011). *The Canterbury Tales* is part of a vast storytelling tradition, which was transmitted over many centuries. This tradition links the Eastern *Book of Sindibad* – composed in Sanskrit, circulated in India as far back as 500 bce, and later translated into a great number of Eastern languages – to its Western offshoot, the *Seven Sages of Rome*, also translated into most languages of Europe, and widely popular and influential through the Middle Ages and into the Renaissance (Bolens 2008).<sup>6</sup> Each version in this tradition presents variations. It is a particularity of the *Canterbury Tales* that the storytellers in it are set in motion while telling their tales.

Chaucer's storytellers are pilgrims going together to Canterbury and playing a storytelling game while riding horses. They tell stories to each other while their body and sensorimotoricity are recursively adjusting to the body and sensorimotoricity of an animal, a biological and cognisant agent (Wasserman and Zentall 2006), whose specificity (in terms of breed, health, velocity, etc.) modifies the way its rider is perceived by the other members of the group (Haddington et al. 2013). In such a context, the respective dynamics of humans, animals and environment are correlated while in constant adjustment (Eliasmith 2009). The sensorimotor and cognitive aspects of the pilgrims' shared action are manifold. My goal in this chapter is to come to terms with the specific way Chaucer grapples with them in the artefact of his text. I will argue that Chaucer's practice of language befits Michael Spivey and Daniel Richardson's remark that 'our understanding of language is composed not of amodal logical symbols that are divorced from the real world, but instead of perceptual-motor simulations and of situated actions in the environment and with other language users'.<sup>7</sup> Even though the ecological environment of his readers has changed and the sight, say, of a yeoman handling a longbow is not a common experience today, Chaucer conveys relevant information by working with language in a way that successfully induces our cognitive engagement, and triggers perceptual-motor simulations of situated actions in meaningful ways.

This quality in Chaucer's work will be my focus, as it relates at the level of a literary text to Van Gelder and Port's definition of their 'dynamical approach':

The cognitive system is not a computer, it is a dynamical system. It is not the brain, inner and encapsulated; rather, it is the whole system comprised of nervous

<sup>6</sup> On the genre of the story-collection in relation to the *Canterbury Tales*, see Cooper 1983.

<sup>7</sup> Spivey and Richardson 2009: 396; see also Bolens 2012b, 2016.

system, body, and environment. The cognitive system is not a discrete sequential manipulator of static representational structures; rather, it is a structure of mutually and simultaneously influencing *change*. Its processes do not take place in the arbitrary, discrete time of computer steps; rather, they unfold in the *real* time of ongoing change in the environment, the body, and the nervous system. The cognitive system does not interact with other aspects of the world by passing messages or commands; rather, it continuously coevolves with them. (Van Gelder and Port 1995: 3)

In literature, language is the tool and material through which such dynamics operate, in interaction with our ever-changing embodied and embedded brains.

### Talking his Way into the Group

The ‘General Prologue’ to Chaucer’s *Canterbury Tales* depicts the creation of a group, where each member remains autonomous and distinct, worthy of being portrayed at some length, while at the same time partaking in a corporation, called fellowship or company. David Wallace notes that

The ‘General Prologue’ to the *Canterbury Tales* proposes that adults representing (almost) every profession, cultural level, age, and sexual orientation can come together under one roof, form themselves into a corporative unity and regulate their affairs without reference to external authority. Historically speaking, this is a remarkable proposition, one that is difficult to imagine by 1415 and impossible by 1600. And the ease with which Chaucer, as poet and first-person speaker, meets and enters into such a group finds no parallel in later English literature. (Wallace 1997: 65)

Wallace remarks that the ‘Middle Ages was . . . more corporate-minded than any later period; allegiance to a specific *fellowshipe* or *universitas* could often outweigh loyalty to civic or state authorities’ (Wallace 1997: 73). He explains that Chaucer, ‘in testing the capacities of the corporate structure he chooses to invent’, was influenced ‘by his daily acquaintance with a pattern of social practice’, that of the guild (Wallace 1997: 75). Guilds ‘owed their corporate existence to the free will’ of their members (Wallace 1997: 75) and, most crucially, to the fact that the latter shared a common activity – craft, profession, economic, religious or political engagements and interests.

The members of Chaucer’s fellowship, while being defined by different socio-professional occupations, share one common spatial direction: Canterbury; one common culturally embedded intention: riding there on a pilgrimage to worship the relics of St Thomas à Becket; and one common highly dynamic cognitive and embodied activity meant to have an emotional impact: telling stories to each other in order to produce and experience merriment from one another. The core action is storytelling while travelling on horses in order to modify the experience of dura-

tion and avoid boredom by channelling attention differently. This constitutes the narrative frame of the *Canterbury Tales*. At its beginning, the self-promoted leader of the group, the Host of a tavern in a suburb of London, Harry Bailey, asks the members of the fellowship to vote and decide whether they want to play this storytelling game or not. The latter unanimously vote in favour of it and swear their oath, thus creating an explicit interactional guild-like context for their reciprocal activity. The narrative we read in the *Canterbury Tales* is fundamentally about the fictional possibility of this reciprocal activity.

The adventure in Chaucer's masterpiece is about people gathering by chance with a shared purpose, and creating mutual involvement, where the self is aware of being addressed by other selves. Notwithstanding much-emphasised singularities (which concurrently pertain to social stereotypes), all are equally treated as interlocutors. In Chaucer's words: 'Wel nyne and twenty in a compaignye / Of sondry folk, by aventure yfalle / In felaweshipe' ('Well nine and twenty in a company / Of various sorts of people, by chance fallen / In fellowship', ll. 24–6).<sup>8</sup> These words come from a narrator, who speaks in the first person singular *I*, and who integrates a group by talking to each of its members:

And shortly, whan the sonne was to reste,  
So hadde I spoken with hem everichon  
That I was of hir felaweshipe anon,  
And made forward erly for to ryse,  
To take oure wey ther as I yow devyse. (*CT*, Pro, 30–4)

And in brief, when the sun was (gone) to rest,  
I had so spoken with everyone of them  
That I was of their fellowship straightway,  
And made agreement to rise early,  
To take our way where I (will) tell you.

The narrator 'talks his way into the *felaweshipe*' (Wallace 1997: 67). He will soon shift to *us* (himself and the other members of the group), and *you* (we his readers), thereby including us in the picture. To flesh out the *I-we-you* bond, he decides to tell us about each member of the company.

But nathelees, whil I have tyme and space,  
Er that I ferther in this tale pace,  
Me thynketh it acordaunt to resoun  
To telle yow al the condicioun  
Of ech of hem, so as it semed me,

<sup>8</sup> The Middle English quotations from Chaucer's *Canterbury Tales* are from *The Riverside Chaucer* (2008). The translations from Chaucer's *Canterbury Tales* are from L. D. Benson's Harvard online edition and interlinear translation, last modified 8 April 2008, last accessed 12 November 2018.

And whiche they weren, and of what degree,  
 And eek in what array that they were inne. (*CT*, Pro, 35–41)

But nonetheless, while I have time and opportunity,  
 Before I proceed further in this tale,  
 It seems to me in accord with reason  
 To tell you all the circumstances  
 Of each of them, as it seemed to me,  
 And who they were, and of what social rank,  
 And also what clothing that they were in.

The narrator decides to tell us about each member of the group while he has time and space for it. The narration has started and will soon move on. We, together with the narrator, will soon have to keep up the pace and stay abreast with the riding group, to share its overall action and therefore remain part of it. The use of the word ‘pace’ (l. 36) to refer to the progression of the narrator’s storytelling creates a parallel – sensorimotor and cognitive – between riding forward and proceeding with the frame narrative. The timing and spacing of both activities are analogically connected, which strengthens the link experienced between the narrator and ‘us’. He rides, we read – along, together.

The narrator begins by providing portraits of his companions. Each portrait is eminently distributed, articulating the way in which actions, activities, habits, manners, social and professional status, moral tendencies, relations to artefacts, to animals and to humans, styles of moving, walking and riding, ways of speaking (including accents), of using language (to entertain, convince or manipulate) and of telling stories together create what is called a person’s *condicioun*. Each portrait verbally designs a character’s condition of embodied, material, intentional and relational presence in the group, in society at large and in the world. In each portrait the focus may vary, but the above set of connections is constant.

Chaucer’s text is an artefact, whose medium – written language – is one of the greatest artefacts invented by mankind. Chaucer uses writing to provide access to his socio-historical conception of how humans relate to each other, to themselves and to the world in a way that pertains to distributed cognition. Indeed, it is not simply the representation of pilgrims that involves distributed parameters. The literary access to the latter is managed by a practice of language which is itself distributed, as it relies on the reader’s propensity to activate perceptual-motor simulations in response to the text.<sup>9</sup> I will concentrate on a few portraits. Riding styles and the way one carries artefacts will be my focus of attention. A character’s way of being carried by his horse, of carrying himself physically (his *port*) and in relation to the group, as well as the artefacts he carries with and on himself, all these aspects are constitutive of who the narrator claims this person is. Finally, we will see that brain, body and world intersect in the embodied and emotional reactions of pil-

<sup>9</sup> Zwaan and Kaschak 2009; Spivey and Richardson 2009; Bolens 2012b, 2016.

grims to the stories they hear, as well as in Chaucer's use of language to convey his pilgrims' *condicioun* and fictional inter-reactions.

## Portraits on the Ride

The first qualification of the first character to be portrayed, a Knight, has to do with horse riding (ll. 43–6). The Knight's worthiness is enacted by this motor skill and his propensity to ride out, far and wide. This immediately connects in the next lines to positive social and behavioural abstractions ('Trouthe and honour, freedom and curteisie', l. 46). The distance the Knight has covered on horseback evinces his merit: no man had ridden farther than him ('And therto hadde he riden, no man ferre', l. 48). The main bulk of his portrait lists the various places he has been to: Alexandria, Prussia, Lithuania, Russia, Turkey, Granada, Morocco and more. His principal asset, the reason for his social credit, is his propensity to ride long distances in order to be present in exotic places at key historical moments – and to kill on demand. Meanwhile, his deportment, adds the narrator, was as meek as that of a maid ('And of his port as meeke as is a mayde', l. 69). This type of startling contrast is typical of Chaucer's *modus operandi* (Bolens 2011a). In this instance, the super-efficient killer is meek in his deportment and never uses swear words (l. 70).

When the narrator comes to describe the Knight's equipment and array, the first item he selects is the latter's horse, which is said to be good.<sup>10</sup> But he also notes that, in contrast, the Knight does not pay attention to his clothes. His tunic is stained by the traces of rust left by his coat of mail, suggesting long travels: 'Of fustian he wered a gypon / Al bismotered with his habergeon' ('He wore a tunic of coarse cloth / All stained (with rust) by his coat of mail', *CT*, Pro, 75–6). According to Laura Hodges, this is a striking departure from both 'the ideally shining knight errant of chivalric literature' (Hodges 2000: 27) and the allegorical spiritual warrior, wearing 'the breastplate of righteousness' and 'the shield of faith' (Hodges 2000: 31). Uncannily, Chaucer portrays an untraditionally realistic knight, failing 'to meet the social demands of ideal noble dress' (Hodges 2000: 33). This Knight fights on contract (Hodges 2000: 53) and wears dirty clothes, and yet is unquestionably respected by his fellow pilgrims.

Contrary to allegorical representations, the stains on the Knight are not symbolic expressions of his sins, but suggest more pragmatic and concrete traces left by his rusting habergeon. And what really matters to him is his means of transportation (his horse), not his looks. His son, a Squire who very much cares about his own looks, and one servant only, a Yeoman, accompany him. Attended by one servant only is the way the Knight likes to travel: 'for hym liste ride so'. For him to travel is

<sup>10</sup> The term *array* (Old French *arrai*) may refer to '(a) Equipment, furnishings, gear; the arms of a knight . . . ; (b) clothing, wearing apparel; garb, costume' (online Middle English Dictionary, 5a and b). Array has to do with the artefacts that a person wears, uses, carries and possesses, which define his or her looks, activity and relation to others, and which connect directly to his or her body.

to ride a horse. A knight was accompanied by others, some of them on horse too, whether equals or subordinates – unless he was an errant knight in an Arthurian fiction. Here, one multitasking yeoman is in order. And Chaucer writes the first yeoman's portrait in estate literature (a literary tradition representing the classes of society) (Mann 1973: 172), evincing again a close attention to the concrete and pragmatic reality of such a travelling man's condition.

A YEMAN hadde he [the Knight] and servantz namo  
 At that tyme, for hym liste ride so,  
 And he [the Yeoman] was clad in cote and hood of grene.  
 A sheef of pecok arwes, bright and kene,  
 Under his belt he bar ful thriftily  
 (Wel koude he dresse his takel yemanly;  
 His arwes drouped noght with fetheres lowe),  
 And in his hand he baar a myghty bowe. (*CT*, Pro, 101–8)

He (the Knight) had A YEOMAN and no more servants  
 At that time, for it pleased him so to travel,  
 And he (the Yeoman) was clad in coat and hood of green.  
 A sheaf of peacock arrows, bright and keen,  
 He carried under his belt very properly  
 (He well knew how to care for his equipment as a yeoman should;  
 His arrows did not fall short because of drooping feathers),  
 And in his hand he carried a mighty bow.

Kenneth Thompson offers a detailed and convincing reading of this portrait. In lines additional to the quote above, the Yeoman is said to be a forester, skilled at woodcraft, and his equipment includes a dagger, a sword, a bracer (i.e. an archer's wrist-guard), a buckler (or small shield) and a horn. 'The character's overlapping duties of lawman [protecting his lord's lands and forests], hunter, bodyguard, and soldier form the background for an intricately woven portrait of a consummate Bowman, well equipped to provide service in both peace and war' (Thompson 2006: 386–7).<sup>11</sup> 'The Yeoman's arms are the primary means of defining him' (Thompson 2006: 392). I will focus on the Yeoman's bow and arrows because, on the one hand, they are likely to induce a reflective use of perceptual-motor simulations on the part of the reader and, on the other, they contextually imply 'the integrated operation of social and technological-material processes at once' (Sutton 2014).

Chaucer specifies that the Yeoman's arrows are fletched with peacock feathers. The embodied and enactive information packed in the arrows and feathers'

<sup>11</sup> Thompson quotes Helen Cooper: 'A forester could be anything from a senior administrative official (one of Chaucer's own posts was a deputy forester of a royal forest in Somerset) to a game-keeper' (Thompson 2006: 388, quoting Cooper, *The Canterbury Tales*, 2nd edn, 1996, p. 37).

description is complex in terms of pragmatic ecology as well as historical and cultural connotations, related to the high reputation of English archers in the late Middle Ages (Phillips 1999; Rogers 2011; Whetham 2008). Pragmatically, Thompson explains the reference to peacock feathers by the fact that peacock *wing* feathers were valued as an alternative to goose feathers to fletch arrows (Thompson 2006: 396). Chaucer's readers thus need to infer that the peacock feathers implied in the Yeoman's portrait are wing feathers and not tail feathers. The latter were valued for their colours and beauty, and invested in religious symbolism. But they have a tendency to droop, while the density and exact quality of feathers are central to their use in fletching. This fact is alluded to in line 107, 'His arwes drouped nought with fetheres lowe' ('His arrows drooped not with feathers low'). The arrows are manufactured with sharp feathers (hence wing feathers since coming from peacocks), cut keenly so as to keep the direction imparted by the archer's propelling gesture. Because the *arrows* are the subject of the verb *droup* in line 107, the attribution of this un-drooping quality is debatable. What is it exactly that does not droop? The feathers, the trajectory of the arrows, the archer's efficacy? Owing to this ambiguity, the idea that the feathers are not drooping blends with the idea that their trajectory when properly effected is equally 'un-drooping'. In this sense, the text may be seen to lead the reader to cognitively combine the quality of the artefact with the way in which this very quality enhances the skill of the archer, suggesting in turn and by association that the Yeoman is endowed with an unbending potency.

Chaucer provides a type of information that relies on an ecological knowledge on the part of his readers. This knowledge is a prerequisite to trigger a mental simulation of the action consisting in using a bow to propel an arrow fletched with peacock feathers. This is not to say that readers may not enjoy the text when lacking this type of knowledge. Some readers may of course envisage a yeoman throwing pretty arrows, fletched with the fluttering feathers of a peacock's tail. Others could simply ignore the artefactual information and find enough relevance in sexual connotations of virile efficacy. In any case, such diverse readings are not exclusive and may be combined in the cognitive acts whereby we dynamically test interpretive possibilities.

To now turn to the Yeoman's bow, its qualification of *mighty* ('And in his hand he baar a myghty bowe', l. 108) is embedded in a cultural environment suggesting that it may be a longbow. Longbows were the type of bow famously used by English archers during the Hundred Years War (1337–1453), and thus at the time when Chaucer was writing the *Canterbury Tales*. Evelyn Tribble highlights the importance of 'cultural transmission of skill' in the practice of the late-medieval English longbow, as a life-long training was necessary for specific muscles to develop in the archer (Tribble 2015: 790). A longbow was thicker and taller than any other kind of bow. It was taller than its user, implying a remarkable strength in the latter, able to bend a bow 'with a draw weight of well over a hundred pounds' (Tribble 2015: 791).

In addition to the might of his bow, we are informed that the Yeoman carries his weapon in his hand. 'That the Yeoman holds the bow in his hand suggests that



the weapon is already strung, ready for use, rather than encased for transport' (Thompson 2006: 395). Of equal interest is the reference to the way the Yeoman carries his sheaf of arrows. He carries it under his belt *thriftily*, that is, properly, profitably, as he does with the rest of his equipment – an idea encapsulated in the adverb of manner *yeomanly*. *Thriftily* shares the etymology of the verb *to thrive*. In the same way as the Knight is defined by his activity and capacity to ride far and wide in order to fight, the Yeoman is portrayed by the way he carries the artefacts that socially define him. In the case of the arrows, he carries them under his belt. According to Thompson (who remains impervious to possible sexual connotations), 'the sheaf is suspended from, rather than bound by, the Yeoman's belt' (Thompson 2006: 397). This is unspecified in the text. The fact that Thompson reaches this conclusion suggests that he mentally enacted the possible pragmatic ways of reading the phrase 'under his belt', and that he parsed the text's linguistic information through deliberate and reflective perceptual-motor simulations. Indeed, the knowledge that a sheaf 'typically consisted of twenty-four arrows', which were 'likely as long as thirty-two inches in length' (Thompson 2006: 396), leads him to state that, 'whether the Yeoman were to ride or walk to perform his duties, holding such arrows in such quantity under a cinched belt would likely be a potentially uncomfortable and awkward proposition' (Thompson 2006: 396–7). To enact under- or un-specified information when reading a text is constant in the act of reading (Cave 2016). It is part and parcel of our enactive relation to the artefact of a text.

If the sheaf were suspended from the Yeoman's belt, it would 'allow the arrows to be held behind the Yeoman's hip, conveniently contained, comfortably situated, and yet readily available' (Thompson 2006: 397). Eventually, Thompson spells out the result of his cognitive engagement with the text by noting that, notwithstanding the exact positioning of the sheaf vis-à-vis the Yeoman's hips and legs, we are led to imagine the pilgrim 'ready to bend an available arrow onto a bow already in hand'. Importantly, '[a]s with the handheld bow, the tucked arrows succinctly suggest an immediacy of use, reinforcing the notions of readiness and efficiency that permeate the Yeoman's portrait' (Thompson 2006: 397). In short, Chaucer's linguistic choices are liable to convey a notably complex aspect in the Yeoman's portrait: a certain promptness to act.<sup>12</sup> In order to gain access to such an aspect, readers must possess or acquire a type of knowledge that is contextual and historical. But also, and most importantly, they need to combine it with a type of cognitive act that is embodied and dynamically enacted. Regarding in particular the aptly fletched arrows, Thompson grapples with the text in using both historical and perceptual-motor simulations, leading us to the convincing conclusion that Chaucer's description is really about a general *attitude*, that of a sharp and virile bodyguard-forester-hunter-archer always on the lookout and ready to shoot.

<sup>12</sup> Again, it is eminently possible that such an experience of the text may fail in a reader and be replaced by another, which may turn out to be equally satisfying, albeit for different reasons and in a way that would be less mindful of the historical and pragmatic embedding of the text itself.

Other interesting artefacts are featured in the ‘General Prologue’ of *The Canterbury Tales*, such as the spurs of the Wife of Bath, or the Miller’s bagpipe, with which the latter leads the company out of town. The reference to the Miller’s musical artefact involves a type of cognition that relates to sensorimotoricity (through the way one plays the bagpipe, with breath, fingers, and an arm pressing the air reservoir of the instrument), and to the spatial displacement of the whole group in response to the sound of the instrument (Krueger 2014a). Whether a musical instrument, or a weapon used to hunt or combat, whether a piece of clothing or of equipment inducing movement in one’s horse (e.g. spurs), artefacts relate to the body that carries and activates them, and to their human, animal and concrete environment by material, sensorimotor, cognitive and social reciprocal impact. Most significantly, the nature of this relation defines the carrier in what we *know* of him or her.

A reference to horses may convey information as to a character’s relation to geographic distance and duration, as is the case with the Knight. Other passages characterise people by the way they ride or by their horse’s breed or state of health. In the Squire’s portrait, the information pertains to the young man’s kinesic style in riding.

He was as fressh as is the month of May.  
 Short was his gowne, with sleves longe and wyde.  
 Wel koude he sitte on hors and faire ryde.  
 He koude songes make and wel endite,  
 Juste and eek daunce, and weel purtreye and write.  
 So hoot he lovede that by nyghtertale  
 He sleep namoore than dooth a nyghtyngale. (*CT*, Pro, 92–8)

He was as fresh as is the month of May.  
 His gown was short, with long and wide sleeves.  
 He well knew how to sit on horse and handsomely ride.  
 He knew how to make songs and well compose (the words),  
 Joust and also dance, and well draw and write.  
 He loved so passionately that at nighttime  
 He slept no more than does a nightingale.

The Squire’s portrait makes use of the cultural stereotype of the courtly lover, dressed in the latest fashion. Interestingly, its phraseology affords a distance with the stereotype, suggesting that the Squire is *performing* the role of the paramour, albeit sincerely – with consequences for his sleep.<sup>13</sup> Notably, his skills are listed together in a way that helps emphasise their common denominator, that is, moving well, in dancing, jousting and riding handsomely, as well as in drawing and writing.

<sup>13</sup> On the issue of social performance in literature and the performance of cultural types, see Bolens 2011a.

In the Merchant's portrait, talking skills are the focus of attention, combining his favourite topic of conversation (his financial profits) with his fashion choices (in terms of beard cut, boot design, hat material and origin). The Merchant's riding style is summed up by the sentence 'high on horse he sat'. Merging the rider's posture with the horse's size, the emphasis is placed on the way the Merchant sits in his saddle. The adverb *high* interestingly blends the rider's bearing (his kinesis is erect, lofty, further elongating the height of his horse) and his correlated attitudinal tendency (his general mood and moral stance), translated into the concepts of self-satisfaction and pride.

A MARCHANT was ther with a forked berd,  
 In mottelee, and hye on horse he sat;  
 Upon his heed a Flaundryssh bever hat,  
 His bootes clasped faire and fetisly.  
 His resons he spak ful solempnely,  
 Sownyng alwey th' encrees of his wynnyng. (*CT*, Pro, 270–5)

There was a MERCHANT with a forked beard,  
 Wearing parti-colored cloth, and proudly he sat on his horse;  
 Upon his head (he wore a) Flemish beaver hat,  
 His boots were buckled handsomely and elegantly.  
 His opinions he spoke very solemnly,  
 Concerning always the increase of his profits.

The Merchant takes himself seriously, he thinks *highly* of himself. His mind and riding style are coextensive with each other. Such a correlation between cognition and kinesis is further developed in the Monk's portrait.

### **A Manly Man in Boots, Horse and Storytelling**

Regarding the idea that the 'experience of the world is enacted or brought forth via skilful interaction' (Ward 2014), the portrait of the Monk in the 'General Prologue' is a case in point. One key feature in it is the Monk's relation to horse riding, a skilful interaction that requires a culturally valued physical training. This dominant feature in the portrait contrasts sharply with the stereotype of the cloistered monk – a contrast that draws the reader's attention to the pilgrim's sensorimotor relation to open space.

A MONK ther was, a fair for the maistrie,  
 An outridere, that lovede venerie,  
 A manly man, to been an abbot able.  
 Ful many a deyntee hors hadde he in stable,  
 And whan he rood, men myghte his brydel heere  
 Gynglen in a whistlynge wynd als cleere

And eek as loude as dooth the chapel belle  
 Ther as this lord was kepere of the celle. (*CT*, Pro, 165–72)

There was a **MONK**, an extremely fine one,  
 An outrider (a monk with business outside the monastery), who loved hunting,  
 A virile man, qualified to be an abbot.  
 He had very many fine horses in his stable  
 And when he rode, one could hear his bridle  
 Jingle in a whistling wind as clear  
 And also as loud as does the chapel bell  
 Where this lord was prior of the subordinate monastery.

The monk is a manly man who makes noise when he rides. Our understanding of the information is grounded in a perceptual-motor simulation, by means of which we supply the implied connection between horse movement and a bridle adorned with artefacts noisy when shaken, such as bells.

The Knight is defined by his activity and capacity to ride far and wide in order to fight; the Yeoman is defined by the way he carries bow and arrows, ready to shoot. The reference to the Monk's bridle achieves a similar purpose, and so does the reference to his boots and many horses, with a focus on the horse he rides to go to Canterbury: 'His bootes souple, his hors in greet estaat' ('His boots supple, his horse in excellent condition', l. 203). It matters that the pervading term *estaaat* is used in this sentence to refer to the state of the Monk's horse, when it more commonly refers to humans' social station. The Monk's boots are supple. They are the sartorial artefacts he uses to protect his feet and elicit a certain type of gait, which is perhaps, by extension, equally supple. Next comes his horse, said to be in great state. This suggests, also by extension, that the Monk's situation, his social station, is great. The state of his horse bespeaks his own. Horse and man are doing more than well. But also boots and horse bespeak a certain relation to space and mobility, specifically here to a socially acceptable or unacceptable spatial freedom of movement on the part of a monk. Oblivious to religious and social expectations regarding monastic behaviour, the man feels a bit too comfortable – with himself, in his boots, and on his jingling horse.

The narrator explains that the Monk is not keen to stay shut in a cloister obeying monastic rules, refuting the idea that a holy man cannot be a hunter. The Monk's posture clashes with social expectations vis-à-vis the triple vows of poverty, chastity and obedience required by monastic life. Such a clash can be found in satirical texts denouncing the transgressions of clerical figures, such as monks and friars. According to Jill Mann, 'Chaucer seems to have been most stimulated by the possibility of exploiting a rich literary tradition' in which the targeted features of the monastic stereotype are 'love of good food, luxurious clothing, a love of horse and hunting, contempt for patristic and monastic authority, laziness, a refusal to stay within cloister walls, the temptations of holding various monastic offices' (Mann 1973: 17). Chaucer's Monk has a check on most of these counts. However, Mann stresses an important fact about this portrait:

Like all the other satirists before him, Chaucer is giving his own slant to the traditional topic, but his originality lies, not in adding a bald head and gleaming eyes to the physical description of the greedy monk – although those features are indeed novel – but in making our attitude to the whole description uncertain. (Mann 1973: 20)

This is a central aspect of Chaucer's artistic *modus operandi*, which, I will argue, is particularly notable in the Monk's use of storytelling. But, first, we should note that one key aspect, emphasised by the narrator in his account of the Monk, is his love of speed.

Therefore he was a prikasour aright:  
 Grehoundes he hadde as swift as fowel in flight;  
 Of prikyng and of huntyng for the hare  
 Was al his lust, for no cost wolde he spare. (*CT*, Pro, 189–92)

Therefore he was indeed a vigorous horseman:  
 He had greyhounds as swift as fowl in flight;  
 Of tracking and of hunting for the hare  
 Was all his pleasure, by no means would he refrain from it.

The Monk's love of speed is explicitly presented as part of who he is and what he does, and how. He is a *prikasour*. A noun kin to the verb *priken*, from Old English *prician*, 'to prick, stab, pierce'. When speaking of a horse, it means to gallop, and when speaking of a person, it means to ride a horse especially at a gallop, to ride free or at large (*Middle English Dictionary*). The noun *prikasour* synthesises the Monk via the condensed information conceptualised within the implied movement of planting one's spurs into a horse's flanks to make it reach full speed as fast as possible. The term *prikasour* also has a sexual connotation, which the Host will insistently unpack and highlight before hearing the Monk's tale. He will claim that with such a manly body as his, the Monk should have been a breeder of sons.

Interestingly, the Monk's choice of story will counteract the general impression he seems to produce on the Host, the narrator, and presumably everyone else. For he goes through a tedious series of tragic situations, based on the wheel of Fortune *topos*, to the point of utterly boring everybody.<sup>14</sup> First the Knight, who is supposed to be overly polite, and then the Host will ask him to cut it out and talk about something else, hunting, for example – to no avail. Thus, the Monk is an ineffective storyteller, if merriment, entertainment or effective moral emulation is intended. But an alternative possibility could be that the intended effect is in fact image control. If such is the case, the Monk as storyteller does manage to get what he wants via

<sup>14</sup> His tale corresponds to the genre of *De casibus* tragedy, narrating the fall of great men; cf. Wallace 1997, ch. 11.

his enactive and enacted tale, namely, to cool off the Host's wish for an efficacious reproduction of the human species via his manly body.

The Monk controls the way in which he is perceived by means of his choice of tale. One of the numerous effects of storytelling is to shape the social perception of the storyteller himself or herself (Wortham 2001). Regarding the *act* of storytelling in the *Canterbury Tales*, the varying failure or success of storytellers emphasises the fact that storytelling is an activity that requires a certain type of skill. A storyteller must secure the audience's attention for the duration of his or her tale, or risk being interrupted. This happens to the Monk, but also to the Squire, who is cut off in mid-sentence, albeit very courteously, by the Franklin. In this latter case, the act of storytelling also alters our reception of the pilgrim's initial portrait, since the Squire was claimed to be a skilled mover with language (writing, composing) as much as the rest (riding, jousting and loving). Ironically, the intradiegetic character named Chaucer is also interrupted, as he turns out to be a rather poor storyteller, in need of a second chance.

The skill of storytelling entails an apt choice of topic, plot, genre and style. A suitable choice of story suggests the notion of a store of them, for instance in the image used by the Host claiming after the game has started: 'unbokeled is the male' ('the bag is opened', Miller's Pro, l. 3115), or when he addresses the Parson, saying: 'Unbokele, and shewe us what is in thy male' ('Unbuckle and show us what is in thy bag (of stories)', Parson's Pro, l. 26). Stories are artefacts that serve many purposes; they channel attention to avoid boredom, but also modify the perception of the world – and of the storyteller. The choice of tale defines the teller, who, in the case of the Monk, wards off unwanted intentions in others regarding his own generative potency.

Jill Mann rightly writes that

Chaucer's method is frequently to remind us of the traditional satire while discouraging or circumventing the moral judgements it aimed to elicit. One way in which Chaucer circumvents moral judgement is to show us the Monk from his own point of view. (Mann 1973: 27)

From the Monk's point of view, the *process* matters more than the *product*: speed more than catching the hare (with and without traditional sexual double entendre), intense riding more than reaching the right spot – say, heaven, through prayer and devotion. In sum, he likes moving for the sake of moving. He enjoys supple boots and a well-kept horse jingling in the wind. He claims his right to holiness by being a *prikasour* in his own right. And the Host approves. He wants to hear more about it. But the Monk knows better: surely not about patristic wisdom – Rodney Delasanta (1968) underlines the Monk's ineptitude in this regard – but about image control by means of speech and silence, by means of skilful interaction.

## Standing on Stirrups

Stories impact their audience cognitively and emotionally (Cave 2016). The narrative frame of the *Canterbury Tales* (the ‘General Prologue’ and links between the tales) shows that emotional redirection by means of narratives does not necessarily entail pacification in the audience (Cooper 1983). Chaucer’s fellowship of pilgrims is made of members who may share common views. For instance, they all agree that the Knight’s tale is worthy of being remembered.<sup>15</sup> But they also share disparity, tension and disagreement. Part of the game they all agreed to play is about *quiting* the previous storyteller – an explicit intention that tends to induce strong emotions, described kinesically in a context that is always already physically affective and socially emotional (Colombetti 2014). To play a game presupposes at least some affective propensity to relate to the other players, whether the act of playing ultimately triggers a desire to hit one’s opponent on the head, or not.

The Miller’s attitude is interesting in this regard. He is so drunk that he is barely able to sit on his horse (‘The Millere, that for dronken was al pale / So that unnethe upon his hors he sat’, ll. 3120–1), and starts shouting that he will be the one to match the Knight with a tale (‘With which I wol now quite the Knyghtes tale’, l. 3127). The Miller threatens to quit the company if he is not allowed to requite the Knight: ‘For I wol speke or elles go my wey’ (l. 3133). He succeeds in imposing his tale, a churlish one, which the narrator rehearses faithfully, albeit apologetically. The Miller’s tale makes fun of a carpenter, which will lead to the Reeve’s retaliation by means of an equally churlish tale ridiculing a Miller. The reason for the Reeve’s move is explained when the latter protests that the Miller ridiculed a carpenter in his tale because he knew he (the Reeve) was one by trade. The two pilgrims’ interpersonal understanding and emotional appraisals are expressed by verbal exchange, choice of story and narrative register (churlish), as well as kinesic reactions. Their moves in the game are such that speech and kinesis are irretrievably yoked together.

A similar storytelling altercation takes place between the Friar and the Summoner, which triggers the following cognitive and embodied emotional reaction on the part of the Summoner:

This Somonour in his styropes hye stood;  
 Upon this Frere his herte was so wood  
 That lyk an aspen leef he quook for ire. (*CT*, Summoner’s Pro, 1665–7)

This Summoner in his stirrups stood high;  
 Upon this Friar his heart was so enraged  
 That like an aspen leaf he quaked for ire.

<sup>15</sup> After the knight has told his tale, the group unanimously declares that it was a noble story, ‘worthy for to drawn to memorie [worthy to draw into memory]’ (Miller’s Pro, l. 3112).

The Host has the exact same kinesic reaction after hearing the Man of Law's tale. However, this time, he stands on his stirrups because he approves of the story they have just heard:

Owre Hoost upon his stiropes stood anon,  
 And seyde, 'Goode men, herkeneth everych on!  
 This was a thrifty tale for the nones!' (*CT*, Man of Law's Epilogue, 1163–5)

Our Host upon his stirrups stood up at once,  
 And said, 'Good men, listen every one!  
 This was an excellent tale for this occasion!'

This double example illustrates the fact that social cognition and kinesic communication are dependent on context: the same posture, or kinesic expression, may have radically different meanings. In addition, by the act of standing upon one's stirrups, the person's mind and emotional enactment are extended (mentally and physically) in the coupled dynamic embodiedness of horse and rider, upheld by the concrete scaffold of harness and stirrups. The kinesic act of standing on stirrups manifests a notable increase in muscle contraction, which we, as readers, infer pre-reflectively when reading the two passages. Our understanding of this move and unsteady posture implies a perceptual-motor simulation on our part, which we trigger by using our embodied knowledge of the sensorimotor implications of standing, both legs stretched on the sides of a mobile and much bigger animal (a horse), feet planted in a metallic artefact (the stirrups).

Pre-reflectively again, we then correlate our embodied knowledge of modified muscle tension to the emotion articulated by the text. In the Summoner, the move manifests anger, and the rider's overall tension is such that his entire body shakes like a leaf. In the case of the Host, standing on stirrups is, in contrast, a steady way of increasing his perceptual perspective, as well as his own visibility and audibility for others, while he calls for everyone's attention in order to make a claim and state that the tale they have just heard was thrifty. A thrifty tale is a profitable story. The adjective *thrifty* is also used to qualify the way the Yeoman carries his arrows. A thrifty tale is somewhat similar to a well-crafted, well-handed and well-propelled arrow. It reaches its target.

According to Lambros Malafouris, 'Meaning does not reside in the material sign; it emerges from the various parameters of its performance and usage as these are actualized in the process of engagement' (Malafouris 2013: 117). This is true of our understanding of such artefacts as arrows and stirrups. The meaning of the object, or of its iconic sign, is in the way it affords a certain type of action, such as to enact a direction (in the case of arrows – whether object or symbol), and to stabilise the rider's balance (in the case of stirrups), and thereby augment his capacity for action, such as shooting arrows or holding a jousting spear horizontally while galloping. But Malafouris's statement also applies when stirrups are referred to in yet another artefact, that of a written text, in which stirrups are part of a narrative. The



level of complexity is then higher because the access to meaning is mediated by language and by a type of cognition that is *a priori* abstract (or has been abstracted via language). Yet the cognitive processing of the narrative depends on the readers' ability and propensity to make sense of the physical implications involved in standing on stirrups. Mental enaction is necessary for any meaning to be grasped in the referred muscular manifestation of increased tension, and the concrete stretching this increase of tension exerts on stirrups, whose solidity is necessary for the rider to stand. This cognitive engagement also involves the perceptual-motor simulation Chaucer's readers are bound to trigger when blending muscular contraction with emotional meaning, all the more so since emotional meanings are at variance.

According to Wolpert, Doya and Kawato (2003: 593),

The study of motor control is fundamentally the study of sensorimotor transformations. We can view the motor system as forming a loop in which motor commands cause muscle contractions, with consequent sensory feedback, which in turn influences future motor commands. The transformation from motor commands to their sensory consequences is governed by the physics of the musculoskeletal system, the environment and the sensory receptors. The descending motor command generates contractions in the muscles and causes the musculoskeletal system to change its configuration. However, the same motor command can have very different consequences in different situations. For example, the same motor command will generate less muscle contraction when the muscles are fatigued. Moreover, the same motor command can lead to very different changes in body configuration depending on the nature of the physical objects we interact with.

Standing is foundational to mankind, but its manifold implications are physically relative, for example, to whether one is standing on the ground or on stirrups, that is, on artefacts invented to ride other animals. The emotional vectors and the pragmatic and communicational intentions accompanying the action of standing are equally variable. In addition, a reference to artefacts, such as stirrups, is by definition historically embedded. To wit, 'the stirrup was unknown until the first centuries ad and neither the Greek nor the Roman cavalry rode with stirrups. Once the use of stirrups became widespread, mounted soldiers could wield the lance and bowmen could shoot from the saddle, with very little training' (Clutton-Brock 1992: 13). From there, the technology of heavier armours developed and the breeding of larger horses ensued. Clutton-Brock (1992: 13) explains that 'the heavy horse was beginning to appear' in the Middle Ages, and that 'This period can justly be called "the age of the horse"':

Radical changes came about not only because the use of stirrups spread but also because of the invention of the horse collar, which meant that horses could pull loads with greater efficiency, and the introduction of the nailed horseshoe which came into universal use in the eleventh century. (Clutton-Brock 1992: 13)

The taming of horses transformed the niche and activities of humans, as well as horses themselves: new breeds were created and metallic horseshoes were nailed to their hooves. Horses were assigned by mankind a function that changed their contact with the ground, and their relation to a space and time previously unbound.

Distributed cognition is at work when we, twenty-first-century readers of Chaucer, trigger a perceptual simulation of a pilgrim standing on stirrups, that is, on an artefact that changed the history of horse and mankind, and with which we are able to engage mentally via embodied cognition, even if we have never set a foot in the actual object. Sensorimotor inference based on a perceptual knowledge of the artefact is enough to achieve relevance. By it we understand how a human can stand on stirrups, a posture that could have at least two contrasted affective meanings in one literary artwork.

In sum, literature – whether it tells us about a pilgrim erect with anger, a yeoman on the edge, a monk riding at full speed, a group of strangers playing together by means of stories, or about strictly anything else, realistic or unrealistic – is made of stories, of ‘cognitive artefacts’ (Herman 2003), whether they be a carved two-line poem or a cyclically performed epic, which mankind developed to train our knowledge of the versatility of the real (Spolsky 2001) and bolster the power of our imagination, providing a sense of both relevance and surprise in, and through, the ever-astonishing movements that shape our minds.

## Cognitive Ecology and the Idea of Nation in Late-Medieval Scotland: The Flyting of William Dunbar and Walter Kennedy

*Elizabeth Elliott*

The contested character of an authentic Scottish identity is foregrounded in a poetic quarrel between William Dunbar and Walter Kennedy, the *Flyting* (c. 1490–1505). One of the earliest vernacular texts to have been printed in Scotland (c. 1508), the *Flyting* belongs to a genre of literary contest where virtuosity in abuse becomes a means to establish poetic supremacy. Emerging in part from classical traditions of debate and invective, flyting in late-medieval Scotland is a genre distinguished by its connection to contemporary social practices, connecting the display of literary artistry with more spontaneous and acrimonious forms of argument (Lyll 1983). Deriving from the Old English *flitan* ('to quarrel'), flyting is also associated with violations of public order: a criminal offence, flyting was subject to a variety of punishments in Scotland, ranging from fines to the cucking stool or pillory (Bawcutt 1983). In Dunbar and Kennedy's *Flyting*, poetic contest becomes the medium of an argument with more serious social consequences: pitting the Lowland Dunbar and his heritage of 'Inglis' or English poetry against Kennedy and his association with the Gaelic-speaking region of Carrick, the *Flyting* raises provocative questions about cultural identity that impact upon its Scottish audience. Within the poem, the heterogeneity of Scottish tradition generates competing claims to authenticity in a debate that anticipates modern critical attempts to define Scottish literature in exclusive terms, privileging one aspect of the nation's story, the heritage of Lowland Scotland, at the expense of the exclusion of Gaelic and other languages (Craig 2007a, 2007b; Elliott 2010b). In Scottish studies, the damaging effects of this tendency are marked in the identification of early Scottish literature exclusively with writing in Scots, a starting point which, as the editors of the *Edinburgh History of Scottish Literature* argue, 'disenfranchises languages and communities from the nation's literary story' (Brown et al. 2007: 8). In their modern forms, the effects of such attempts to reify cultures as entities rather than dynamic patterns have been critiqued as detrimental to social cohesion, homogenising social groups, promoting essentialism and stereotyping (Adams and Markus 2004). The simplification underpinning this tendency towards reification of cultures suggests the inherent difficulties in conceptualising complex, dynamic phenomena. Yet, if the *Flyting* frames a debate over cultural authenticity in antagonistic terms, reading

the poem in light of current theories of extended mind suggests that its focus on the question of Scottish identity is not reductive, but instead contributes to the poem's holistic function as a means to model and inhabit the complexities of Scotland's diverse cultures.

In contrast to traditional forms of cognitive science, which conceive mental processes as occurring exclusively within the individual brain, theories of extended mind point towards the extension of mental processes across brain, body and world (Rowlands 2010). Extended mind theory recognises the human propensity to manipulate environmental resources to ease the burden of cognitive tasks, reflected in the development of technologies such as writing (Rowlands 2010: 14–15; Anderson 2015b: 1–4). More generally, distributed cognition informs approaches that situate cognitive activity in the context of dynamic systems, attending to the particular physical, social and cultural environments in which cognition develops and functions, and to the fluctuating patterns of correlation between interconnected elements, linked in a reciprocal web of ecological dependence (Hutchins 2010; Tribble and Keene 2011: 1–18). The unit of analysis within these studies is a cognitive ecosystem: the bridge of a navy ship as the site of a mode of navigation shaped by its particular context (Hutchins 1995), or the early modern theatre as site of a dynamic interplay between 'neural and psychological mechanisms underpinning the task dynamics; the physical environment(s), including the relationships between playing and audience space; cognitive artifacts such as parts, plots, and playbooks; technologies, such as sound or lighting; the social systems underpinning the company', and economic conditions (Tribble 2011: 151). This chapter reads the *Flyting* as a text that illuminates key aspects of a cognitive ecology that scaffolded the medieval attempt to conceive the complexity of Scottish identity, in alleviating the cognitive demands posed by the attempt to conceive Scotland as a cohesive community despite its internal tensions and ethnic divisions. The *Flyting* models the ways in which the experience of collectivity, or interdependent self-construal, is embodied and extended.

In its effects and origins, poetic flyting is identified as the harmonious counterpart of its prose namesake in the anonymous epistle 'To the Reader', published in early prints of the *Flyting*, between Alexander Montgomerie and Sir Patrick Hume of Polwart (1582):

No cankring Envy, Malice, nor Despite,  
 Stirr'd up these men so eagerly to flyte,  
 But generous Emulation; so in Playes  
 Best Actors flyte and raile, and thousand wayes  
 Delight the itching Eare [. . .]  
 Would all that now doe flyte would flyte like Those,  
 And Lawes were made that none durst flyte in Prose  
 How calme were then the World? perhaps this Law  
 Might make some madding Wiues to stand in aw,  
 And not in filthy Prose out-roare their Men:

But read those Roundelayes to them till then. [. . .]  
 Anger t'asswage, make Melancholy less,  
 This flyting first was wrote, now tholes the Presse<sup>1</sup>

Here poetic flyting is a consummate performance whose emulation might bring about social harmony; a consolatory aesthetic mode with the potential to transform divisive energies into a source of delight, its effects are to be renewed through the transition to print. If the evidence of the epistle is ambiguous, marking a need to distinguish the performative from the spontaneous for this early audience, the claim that such poetic contests originate from an atmosphere of mutual respect finds support in a comparison drawn with the modern poetic invective form of Hip Hop battle rap (Flynn and Mitchell 2014). As Flynn and Mitchell (2014: 70) argue, the thematic and aesthetic parallels between these historically disparate forms suggest that they may share an 'essentially constructive purpose': present-day emcees 'all express respect for their opponents and attest to the fact that their battles were meant to determine linguistic and artistic supremacy'. In contrast to the exuberant invective of the *Flyting*, Dunbar's later poem 'I that in heil wes' (c. July 1505) acknowledges Kennedy's poetic stature, with lines that evince both sorrow for Kennedy's ill health and a respect whose sincerity provides evidence that, here too, the rhetoric of competition is underpinned by familiarity and collaboration: 'Gud maister Walter Kennedy / In poynt of dede lyis veraly. / Gret reuth it wer that so suld be' ('Good master Walter Kennedy / Lies at the point of death, truly / It were a great pity that it should be so', Bawcutt 1998: I, 97, ll. 89–91; subsequent references are to this edition). Attempts to distinguish the performative from the spontaneous are further complicated by Margo Todd's finding that those apparent violations of public order termed flyting in the historical record had generic conventions of their own and themselves served a conciliatory purpose, functioning 'effectively as formal mechanisms to initiate mediation, to settle the quarrel rather than continue the disorder' (Todd 2002: 235).

An embodied cognition perspective illuminates the extent to which the cognitive ecology of late-medieval Scotland endorses collaboration: as Soliman and Glenberg (2014: 211) argue, from 'birth onward, the child's sensory and motor systems are immersed in tangible sociophysical environments with a tacit predominance of either independence/individualistic or interdependence/collectivistic practices'. Constructions of self are shaped by the patterns of connection or separation current in the structures and practices of everyday life (Adams and Markus 2004: 343). Cultural patterns prominent in late-medieval Scotland differ from those of the modern-day global north, promoting an interdependent construal of self: Soliman and Glenberg (2014: 211) comment in particular on the influence of childrearing practices such as breastfeeding on the development of self-other distinctions. In the absence of formula, breastfeeding was necessary for infant survival in late-medieval Scotland, and few women except the nobility and the very wealthy

<sup>1</sup> Montgomerie and Hume 1621: Alv sig.

hired wet nurses (Cowan and Walkling 2015: 27; Marshall 1984). By contrast, in 2014–15, 48.3% of babies were breastfed in the first ten days after birth, falling to 38.0% by six to eight weeks (NHS Scotland 2015); data from 2010 puts rates of breastfeeding at nine months at 21%, with exclusive breastfeeding dropping to 5% by five months (McAndrew et al. 2012, tables 2.11, 2.19). Although comparative data are not available for late-medieval Scotland, archaeological evidence available from England, and covering a period from the tenth to the sixteenth centuries, is consistent with cessation of breastfeeding between twelve and twenty-four months (Mays 2003: 739). The comparatively long duration of this feeding practice suggests particular distinctions between present and pre-modern forms of the shared activities through which human beings ‘find ourselves organized or integrated, in a . . . range of ways that tie us to the environment, each other, and our social worlds’ (Noë 2015: 6). Living conditions in late-medieval Scotland also favoured collectivism: private domestic space was comparatively rare, and ‘Urban society was characterised by the close proximity and interaction of people from all walks of life, both from within the town and beyond’ (Ewan 2011: 109). These conditions offer some indications of the ways in which everyday life in late-medieval Scotland was more predisposed to interdependent self-construals than mainstream modern practice. If the antagonistic invective of the modern rap battle, product of a culture in which independent constructions of self predominate, is founded in familiarity and mutual respect, the intradependent context of late-medieval Scotland offers still more fertile ground for readings of the *Flyting* as a work that produces cohesion, rather than fragmentation.

The collaborative form of the *Flyting* might itself contribute to such a cohesive effect: research conducted by members of Glenberg’s Laboratory for Embodied Cognition explored the effects of coordinated activity with a partner, finding that joint action affects participants’ perceptions of their own bodily sensations. Joint action induces an adjustment of the individual’s body schema to coordinate with the movements of the partner, manifesting an entanglement between participants’ perceptions of their own bodies and those of their partners, in a coupling effect that outlasts the performance of the activity. This adjustment is termed the Joint Bodily Schema (JBS). The effect of such collaborative activity was more striking where participants had an interdependent self-construal, producing a stronger JBS (Soliman and Glenberg 2014; Soliman et al. 2015). Glenberg’s team speculate that the JBS ‘may underlie the dynamics of cross-cultural differentiations’, mediating the relationship between the collective performance of synchronous activities such as marching, dancing and public commemoration, and the documented cohesive effects such performance produces, in promoting affiliation, cooperation, trust and even compassion (Soliman et al. 2015: 886). Soliman and Glenberg’s findings suggest possibilities for the reading of other collaborative activities involved in the production and reception of the *Flyting*, from its shared composition to the mechanisms of its later circulation and reception.

The composition of the *Flyting* was not a bodily activity of the same kind as those studied by Glenberg’s team, which entail observation of the partner’s physical

movements. Internal references such as an allusion to a section of the poem as a 'cedull' (document) and Kennedy's reference to 'Quhare thou writis' indicate that the poem probably originated as a collaboration written in instalments and exchanged between poets, rather than a spontaneous dramatic improvisation (ll. 48, 355). There is, however, some evidence for the court performance of the later flying of Montgomerie and Polwart, and this retrospectively lends support to the possibility that the *Flyting* of Dunbar and Kennedy was also performed (Bawcutt 1983: 11; Bawcutt 1992: 233). Such a performance has the potential to effect the kind of entanglement envisaged in the idea of the JBS, demanding an attention to the partner's rhythms of speech, and to bodily gesture.

Even a purely textual collaboration might be understood as a bodily performance, however: those trained to write in the later Middle Ages were highly conscious of the materiality of writing as an intensely physical labour, where quill pens must be sharpened with knives, nibs inked, and the surface was still often the resistant medium of parchment. As animal skin, bearing traces of its origins as flesh and hair, and marked only by means of violent abrasion, parchment itself serves as a reminder of the materiality of those bodies involved in the act of writing, human and animal (Kay 2011; Carruthers 1998: 102). Manuscript correspondence, in particular, was imagined in corporeal terms, with the physical traces of the hand and the forms of speech it preserves as surrogate for the absent writer's bodily presence (McGrady 2006: 41–3; Lerer 1997: 90–1). The poetic exchange between Dunbar and Kennedy functions as a joint action distributed across biological bodies and world via the technology of writing, with the conceptual link between body and text signalled in Kennedy's allusion to Dunbar's 'skaldit skrowis' (scabby scrolls) at once suggesting the imperfections of poor-quality parchment and anticipating the bodily diseases attributed to Dunbar in Kennedy's invective (l. 26).

The cohesive effects of the *Flyting* extend beyond the pairing at its heart, however: the poem implies its own origins in an invective challenge issued by Kennedy and Quintin, answered by Dunbar and his friend 'Schir Iohine the Ros' (ll. 1–2, 34, 39–40; Bawcutt 1998: II, 430). As Harold Love argues, one important societal function of the manuscript text 'was that of bonding groups of like-minded individuals into a community, sect or political faction, with the exchange of texts in manuscript serving to nourish a shared set of values and to enrich personal allegiances' (1992: 277). Despite its antagonistic subject matter, the circulation of the *Flyting* as a material text, both in the process of composition and as reading matter, endorses patterns of connection between poets and audience, building relationships into the structures of everyday life. Through immersive experience of these relationships, individuals construe themselves as part of a particular community (Soliman and Glenberg 2014: 211). Dunbar and Kennedy's association with the court of James IV suggests the *Flyting's* function in contributing to the bonding of the court as community. Competition for prestige and royal favour has been persuasively linked with a shift in emphasis towards independent self-construals: the emergence of individualism, with the courtly genre of petition cast

as the primary medium for the growth of autobiographical writing (Burrow 2008: 38; Bawcutt 1992: 114). The *Flyting*'s representation of intense rivalry interwoven within the larger frame of a poem is a fitting model of the court's competitive community.

The form and content of the *Flyting* evoke a wider audience, however: documents, including abusive verses, were often posted in public places, fixed to doors or other prominent structures to be read by the literate and heard by others. Edinburgh's market cross, the symbolic heart of the city which formerly stood north-east of St Giles, was one location where proclamations were made and displayed, as well as being the site of public punishments, and much other business (Bawcutt 1992: 234; Ewan 2011: 116). Within the *Flyting*, the market cross takes centre stage as the scene of punishment and penitence, suggesting the possibility that the invective poems were posted there for public reading.

Dunbar charges Kennedy: 'Thow bringis the Carrik clay to Edinburgh Cors, / Vpoun thy botingis hobland, hard as horne. / Stra wispis hingis owt, quhair that the wattis ar worne' ('You bring the Carrick clay to Edinburgh Cross / Hobbling upon your boots, hard as horn. / Wisps of straw hang out where the welts are worn', ll. 211–13). Dunbar's disdain for Kennedy's footwear anticipates his use of the epithet 'ruch rilling', 'the rough riving' or shoe of undressed hairy hide especially associated with the Highlander (l. 243; Bawcutt 1983: 15–17). Although the use of straw as an insole was common practice (Bawcutt 1998: I, 437), Dunbar's flyting casts Kennedy as a rustic intrusion on the civilised life of the city, traipsing the soil of his home into its centre. If he should come again, Dunbar threatens, 'We sall gar scale our sculis all the to scorne / And stane the' ('We shall dismiss all our schools to scorn you / and stone you', ll. 215–16). Dunbar paints a vivid image of the scene (ll. 217–32):

Off Edinburch the boyis as beis owt thrawis,  
 And cryis owt, 'Hay, heir cumis our awin queir clerk!  
 Than fleis thow lyk ane howlat chest with crawis,  
 Quhill all the brachis at thy botingis dois bark.  
 Than carlingis cryis, 'Keip curches in the merk.  
 Our gallowis gaipis, lo, quhair ane greceles gais!  
 Ane vthir sayis, 'I se him want ane sark,  
 I reid 3ow, cummer, tak in 3our lynning clais.'

Than rynis thow doun the gait with gild of boyis,  
 And all the toun tykis hingand in thy heilis.  
 Of laidis and lownis thair rysis sic ane noyis  
 Quhill runsyis rynis away with cairt and quheilis  
 And cager aviris castis bayth coillis and creilis,  
 For rerd of the and rattling of thy butis.  
 Fische wyvis cryis, 'Fy!', and castis doun skillis and skeilis,  
 Sum claschis the, sum cloddis the on the cutis.



The boys of Edinburgh throng out like bees,  
 And cry out, 'Hey, here comes our own queer clerk!  
 Then you take flight like an owl chased by crows,  
 While all the female hunting hounds bark at your boots  
 Then old women cry, 'Keep kerchiefs out of sight.  
 Our gallows gape, lo, where a graceless one goes!  
 Another says, 'I see he lacks a shirt  
 I advise you, friend, take in your linen clothes.'

Then you run down the road with the clamour of boys  
 And all the town mongrels hang at your heels  
 From boys and ruffians there rises such a noise  
 While horses run away with cart and wheels  
 And pedlar pack horses cast both coals and creels,  
 To din you and rattle your boots.  
 Fish wives cry, 'Fie!', and cast down baskets and wooden tubs,  
 Some strike you noisily, some pelt you with clods of earth on the ankles.

Dunbar's invective makes Kennedy the subject of a form of communal censure that shares features with charivari, or 'rough music', in its emphasis on a cacophonous noise made in part by domestic implements. As John McGavin argues, 'Such noise was customarily intended to signal the disapproval of neighbours for some local misdemeanour and, together with the large number of people usually involved, was a powerful weapon not just of criticism but of offence which, on occasion, drove the victim out of the town' (1995: 151). As in charivari, the townspeople's imagined reaction is figured as the ritualised form of a transgression that takes its occasion from a prior transgression, marking its irregularity (Crane 2002: 145). Here Kennedy's presence within Edinburgh is an offence to the social body: the role of boys, old women, itinerant pedlars, horses and bitches underline his exclusion as an aberration, beneath those who themselves occupy marginal positions within the social hierarchy of medieval Edinburgh. In rendering their subjects ridiculous, the ritualistic mode of such forms of public censure aims to evoke the spontaneous bodily response of laughter. For a listening audience, this shared response offers a further instance of a cue for collective activity of the kind Soliman and Glenberg identify as reinforcing interdependent self-construal.

Kennedy's response to Dunbar's ritualised public shaming in turn uses the site of the cross to assert his supremacy, calling Dunbar to a public act of penance for slander (ll. 325–8; Bawcutt 1998: II, 440):

Cum to the croce on kneis and mak a crya,  
 Confesse thy crime, hald Kenydy the king,  
 And wyth ane hauthorne scourge thy self and dyng.  
 Thus dree thy penaunce wyth *deliquisti quia*.

Come to the cross on your knees and make a cry,  
 Confess your crime, hold Kennedy the king,  
 And with a hawthorn scourge and hit yourself  
 Thus suffer your penance with 'since thou has sinned'.

If not the market cross, the cross here is perhaps that of a church altar, another location where those found guilty of slander might perform court-ordered acts of penitence, begging forgiveness of the injured party (Bawcutt 1983: 9). Identifying Dunbar as guilty penitent, Kennedy's charge reaffirms his own position within the social order, recognised and supported by civic authorities. In each case, the poets map their invective exchange on to the fabric of the city, keying the action of the poem to civic space and its significance in everyday life. This practice capitalises on the human tendency to use space as an integral aspect of planning and behaviour, as a resource to be manipulated in ways that simplify physical and mental tasks, sharpen perception, or reduce mental effort (Kirsh 1995; Tribble 2011: 32).

The particular value of space as an aid to memory is recognised in pre-modern writing on the arts of memory, which typically recommend the visualisation of a series of places, real or imagined, as backgrounds for the arrangement and storage of information (Yates 1966; Carruthers 2008). Memory training was an integral part of education in the pre-modern period, while its particular importance within Scottish culture is indicated by the later training of James VI and I in the arts of memory by the poet William Fowler, himself the author of a mnemonic treatise (Elliott 2010a). As Anderson argues, arts of memory reflect the extent to which pre-modern thought recognises cognition as an extended phenomenon: 'This suggests that mnemotechnics make use of the plasticity of concepts of mind and subjectivity, which enable humans to adopt external or internalised organisational structures to supplement biological modes of organising information' (Anderson 2015b: 126). The use of civic space within the *Flyting* at once lends force to the poets' invective and enhances its memorability for the inhabitants of late-medieval Edinburgh, in adopting patterns of spatial organisation already integral to their own experience. The work of the poem is displaced on to the environment in ways that reflect the embodied status of human beings, spatially located in the world. For the *Flyting's* first audiences, both within the court and in the wider community of readers in Edinburgh, the poem serves to associate the image of Scottish identity it constructs with the familiar urban landscape in which they lived. In doing so, the *Flyting* at once exploits the natural and learned function of places for memory and transforms the city itself into a cue for remembering the poem.

Supplementation of biological memory through manipulation of external resources is also reflected in the *Flyting's* use of striking visual imagery, emotive language and depictions of violence. Treatises on the memorial arts recognise the particular value of visceral imagery and violence as these engage the emotions and corporeal senses, where abstract information that lacks this encoding is more

difficult to memorise (Carruthers 2008: 163–72). In its visual drama and the intensity of its invective, the *Flyting* becomes more memorable for its audiences because it evokes this kind of emotional response.

The *Flyting*'s particular concern with bodily experience and bodily representation is also suggestive in light of the impact of collaboration on bodily schemata documented by Glenberg's team. If joint action alters perceptions of the boundaries between self and other, body and world, this carries implications for how we might read the *Flyting*'s persistent focus on the loss of bodily control. Claims of faecal incontinence feature in each poet's invective: Dunbar paints Kennedy as a 'Skitterand scorioun' ('defecating scorpion') and 'skyttand skarth' ('shitting cormorant') with 'the hurle behind' ('diarrhoea'), whose 'hostand hippis lattis nevir thy hose go dry' ('spluttering hips never let your hose dry', ll. 58, 194, 200). Kennedy offers a colourful account of Dunbar's sea voyage (ll. 457–64):

Quhen that the schip was saynit and vndir saile,  
 Foul brow, in holl thou preposit for to pas.  
 Thou schot and was not sekir of thy tayle,  
 Beschate the stere, the compass and the glas.  
 The skippar bad ger land the at the Bas.  
 Thou spewit and kest out mony a lathly lomp,  
 Fastar than all the marynaris coud pomp.  
 And now thy wame is wers than ewir it was.

When the ship was blessed and under sail,  
 Foul face, you intended to go in the hold.  
 You vomited and were not sure of your tail,  
 Beshat the helm, the compass and the glass.  
 The skipper ordered you be landed at the Bass Rock.  
 You spewed and cast out many a loathsome lump,  
 Faster than all the mariners could pump.  
 And now your stomach is worse than ever it was.

Drawing on continental philosophy, Anna Caughey's analysis of the scatological humour at work in the *Flyting* provocatively suggests some of the ways in which the poem impacts upon the perception of the body. Scatological humour reflects the comedic function of what Julia Kristeva identifies as the abject, the human response to the threat of a rupture in meaning as distinctions between inside and outside, subject and object, self and other, disintegrate (Caughey 2014; Kristeva 1982). For Kristeva, the possibility of such loss offers a violent and fascinating *jouissance*, a shattering pleasure of its own that persists in its intractability: 'abjection is above all ambiguity. Because, while releasing a hold, it does not radically cut off the subject from what threatens it – on the contrary, abjection acknowledges it to be in perpetual danger' (1982: 9). Dunbar's depiction of Kennedy as leper or 'laithly lene tramort' ('loathsome lean corpse') marks a similar threat to life, anticipating

Kristeva's sense of the cadaver as the paradigmatic example of the abject (l. 161; Caughey 2014: 132). As Caughey argues, the *Flyting* 'provides a source of *jouissance* acquired from using the confined space of the poem as a site to "play with" the notion of the bodily, sexually and socially abject' (2014: 133). In doing so, the *Flyting* offers a vivid reminder of the permeability of constructed human boundaries, laying conceptual groundwork for the shifts in perception of the limits of self and other, body and world, stimulated by collaborative action.

Caughey also draws attention to the function of insult as an act of recognition, and to the cumulative effect of Kennedy and Dunbar's invective in building their reputation as poets: 'By naming each other as abject outsider-figures, the poets thus paradoxically bring one another more securely *inside* the court circle regardless of the audience's decision as to "quha gat the war"', invited in a scribal colophon of the Bannatyne Manuscript ('who got the worst', 2014: 134, l. 554). This cumulative effect is also marked in the modern form of Hip Hop battle rap, with exchanges bringing prestige and publicity to both parties. Within the *Flyting*, however, the representative function of the two poets enables the positive impact of recognition to encompass culture as well as individual reputation. Dunbar dismisses Kennedy as an 'Iersche brybour baird, wyle beggar with thy brattis' ('Irish beggar bard, vile beggar with your rags', l. 49), and flyting itself as 'Sic eloquence as thay in Erschry vse' ('such eloquence as they use in Gaelic', l. 107), the object of a 'thraward appetyte' ('perverse appetite', l. 108). Gaelic is denigrated as Other, the mark of the uncivilised, and a linguistic betrayal of an English ideal: 'Thy trechour tung hes tane ane Heland strynd . . . I tak on me, ane pair of Lowthiane hippis / Sall fairar Inglis mak and mair parfyte / Than thow can blabbar with thy Carrik lippis' ('Your treacherous tongue has taken a Highland strain . . . I undertake, a pair of Lothian hips / Shall make fairer and more perfect English / Than you can blabber with your Carrick lips', ll. 55, 110–12). In answer, Kennedy identifies Gaelic as the root of authentic Scottish identity (ll. 345–52):

Thou lufis nane Irische, elf, I vnderstand,  
 Bot it suld be all trew Scottis mennis lede.  
 It was the gud langage of this land,  
 And Scotia it causit to multiply and sprede  
 Quhill Corspatrik, that we of treson rede,  
 Thy forefader, maid Irisch and Irisch men thin,  
 Throu his treson broght Inglise rumplis in.  
 Sa wald thy self, mycht thou to him succede.

You love no Gaelic, elf, I understand  
 But it should be the tongue of all true Scotsmen.  
 It was the good language of this land,  
 And Scotia caused it to propagate and spread  
 While Corspatrick, whom we accuse of treason,  
 Your forefather, made Gaelic and Gaels scarce,

Through his treason brought English tails in.  
 So you would yourself, if you might succeed him.

Kennedy's response is potent in its allusion to the origin myth that had become central to attempts to establish Scotland's historic right to self-determination against English claims of suzerainty. Recasting a legend ascribing the foundation of Ireland to Scota, daughter of a pharaoh, this mythic narrative offered an answer to English appeals to the myth of Brutus as founder of Britain (Goldstein 1993; Terrell 2008; Broun 1997).

In contrast to Dunbar's exploitation of the stereotype of the Gael as uncivilised outsider, then, Kennedy's mobilisation of legend evokes the crucial role of Gaelic in Scottish national culture. Other surviving evidence supports a courtly recognition, albeit limited, of the aesthetic pleasures of Gaelic that conflicts with Dunbar's image of absolute exclusion, in payments made to harpists and bards in accounts from the court of James IV, and the Spanish ambassador Pedro de Ayala's surprising claim that James himself could speak Gaelic (Meier 2007: 67). James's 1507 and 1508 tournaments of the Wild Knight and the Black Lady, in which James himself took on the role of the Wild Knight, offer further evidence of the hermeneutic importance of Gaelic culture to royal iconography (Stevenson 2006: 94–7; Fradenburg 2003: 525). Rather than denying his connection to Gaelic culture, Kennedy's response functions as a reminder of Gaelic's fundamental importance to the idea of Scotland.

Kennedy's own attack on Dunbar identifies his opponent as natural and spiritual heir to Gospatrick, eighth earl of Dunbar, and supporter of Edward I in the early years of the War of Independence (Bawcutt 1998: II, 439). Occupying several stanzas (ll. 262–88), the narrative of Gospatrick's treason is drawn from a well-known literary source, Blind Harry's *Wallace* (Bawcutt 1998: II, 439). Like the use of Edinburgh as setting, this intertextual allusion associates invective with familiar matter, making the poem's content more potent and memorable for its audience. The English themselves are defined as Other, bearing the tails supposedly inflicted in punishment for English mockery of Saint Augustine of Canterbury. Dunbar's treachery is offered as grounds for his exclusion from both Scotland and Scottish identity: 'Lat newir nane sik ane be callit a Scot' ('let never such a one be called a Scot', l. 483); 'In Ingland, oule, suld be thyne habitacione' ('In England, owl, should be your habitation', l. 409). Yet, if Dunbar is censured for disloyalty to Scotland and dislike of Gaelic, the linguistic medium of the *Flyting* itself serves as a reminder that the form of poetic supremacy contested within the poem is an anglophone ideal, with the distinction between Scots and English only nascent at the end of the fifteenth century (McClure 1982). Gaelic emerges as a language of Scottish identity, but its representation is subordinated to English, asserting the primacy of anglophone, Lowland culture. In this respect, the idea of Scottish identity modelled within the *Flyting* mirrors and parallels the anglophone court for which it functions as entertainment, and the political structure of a country whose language of parliamentary record was English.

For Jacquelyn Hendricks, the irreducible nature of the conflict between models of Scottish identity proposed within the *Flyting* ‘questions “true” Scottishness, mar- rying the unifying possibility of the text and its potential for constructing a homog- enous Scottish national identity’, so undermining community (2012: 79). Such a negative reading of the *Flyting*’s effect invites the question of why the poem was sufficiently popular that it survives in four witnesses including the Bannatyne Manuscript (c. 1568). A poetic anthology compiled by George Bannatyne, the manuscript’s contents reflect the tastes of the middling sort, rather than the courtly elite, and favour works popular in Bannatyne’s own social circle, transcribed from both manuscript and print exemplars. The earlier survival of a partial text of the *Flyting* amongst the Chepman and Myllar prints (c. 1508) is more ambiguous: these nine small books, around fifteen centimetres high and preserved in a single binding, were perhaps part of a test run for a fledgling press, perhaps chance survivals of a print culture whose more ephemeral products were read to destruction (Mapstone 2008; Fox 1977). As one of the first products of Scotland’s earliest press, the poem occupies a significant place within the ‘historical procession of potent cognitive technologies’ that constitute what Andy Clark has called ‘a cascade of “mindware upgrades”’: cognitive upheavals in which the effective architecture of the human mind is altered and transformed’ (2003: 4). The Chepman and Myllar prints are distinctive as vernacular literary texts, unusual in the early history of most nations’ printing, and unusual for the products of a press licensed by the Crown in 1507 to print books of law, acts of parliament, mass books and breviaries. Dunbar is well represented amongst the surviving texts, with three poems including the *Flyting*. Even as test products, the material chosen offers a reflection of the literary tastes of the printers, Walter Chepman and Andrew Myllar, and their sense of the poten- tial of their press. The texts are primarily Scottish in origin, with the inclusion of ‘the mayng or disport of Chaucer’ (May celebrations), a misattribution of John Lydgate’s ‘Complaint of the Black Knight’, implying a conception of Scottish ver- nacular tradition common to Dunbar and his fellow poets such as Gavin Douglas, who invoke Chaucer, Gower and Lydgate as progenitors of a distinctive Scottish tradition of writing in ‘Inglis’ (Mapstone 2008: 109–33; Elliott 2010b: 588–9). The place of the *Flyting* alongside such courtly texts as Dunbar’s ‘Ballade of Lord Bernard Stewart’ and *Goldyn Targe* within Chepman and Myllar’s output suggests that it was not understood as divisive and detrimental to contemporary concep- tions of an anglophone Scottish cultural tradition, but fully consonant with them.

Rather than staging a cultural deadlock between the Gaelic and English strands of Scottish literature, or offering the homogenised versions of culture found in many modern constructions of national tradition, the debate at the heart of the *Flyting* acknowledges the heterogeneity and permeable boundaries that charac- terise the dominant culture of Lowland Scotland. The particular difficulty of concep- tualising the dynamic nature of cultures is reflected in the problematic human tendency to reify cultures, endowing them with the characteristics of static objects (Adams and Markus 2004: 337–8). In contrast to the historical tendency of Scottish studies, where early Scottish literature is often narrowly identified with writing in

Scots, the *Flyting* models a more fluid and complex idea of nation, its form and content anticipating Alasdair MacIntyre's definition of 'living tradition' as 'an historically extended, socially embodied argument, and an argument precisely in part about the goods which constitute that tradition' (1981: 222). Taken as a whole, the *Flyting* becomes a cultural object that shapes, embodies and transmits the complexity of Scottish identity, its structure as a debate between individuals who give concrete representation to important elements of Scotland's diversity alleviating the difficult work of imagining the idea of a dynamic nation. Invoking an urban geography familiar to its first audiences, the poem functions as an instance of and a cue for the forms of collective activity that organise us as human beings, and reflects the propensity to manipulate environmental resources to ease the burden of cognitive tasks recognised in extended mind theory. In reading or hearing the *Flyting*, the audience experiences the unity of the poem's structure as a reinforcement of the idea of a nation whose borders contain a range of voices and conflicting cultures. The poem forms part of a distributed cognitive system in which the work of thinking nation and national identity is scaffolded by the processes of collaboration, circulation and reception that make thinking nation part of the structure of everyday life. In this respect, the *Flyting* not only occupies a significant place within the historical cascade of 'mindware upgrades' by virtue of its status as a product of Scotland's first press, but functions as a specific mindware upgrade, shaping the particular ways in which those who encountered the poem thought about the nature of Scotland and Scottish national identity.

## The Mead of Poetry: Old Norse Poetry as a Mind-Altering Substance

*Hannah Burrows*

This chapter explores the significance of the Old Norse myth of the mead of poetry, in which poetry is represented as an alcoholic drink, for our understanding of the ways in which early Scandinavians thought about the mind and specifically about poetry's relationship to and effect on it. I begin by introducing the two main types of Old Norse poetry and go on to describe one of those types, skaldic poetry, in more detail. Skaldic poetry can be understood as a specialised 'cognitive niche' (Clark 2006) in which its complex form and diction scaffold various cognitive processes, including composition, memorisation and interpretation. I then describe the myth of the mead of poetry and the metaphorical complex surrounding it. I argue that the myth offers the possibility of understanding poetry as 'mind altering' and that certain poets used it to express processes of socially shared cognition, the enabling of new modes of thought and the mental and affective work poetry does in the world. In the final section I analyse examples from skaldic poetry and argue that they suggest understandings of the mind that are akin to certain elements of the distributed cognition hypothesis.

This is not the place for a full investigation of the semantics of mind and cognition in Old Norse, but before I begin it is worth highlighting a key point. The sources reveal a largely cardiocentric understanding of the mind,<sup>1</sup> and, unsurprisingly for a pre-modern, pre-Cartesian society, a corresponding closeness between cognition and emotion, thought and feeling.<sup>2</sup> This affective-cognitive perspective and implied 'non-trivial participation of the body' in cognition (Anderson 2015b: xi) will be found later in my discussion and should be borne in mind throughout.

Modern scholarship generally divides Old Norse poetry into two broad types:

<sup>1</sup> See Godden 1985 and Lockett 2011b on related Anglo-Saxon understandings of the mind; I borrow the term 'cardiocentric' from Lockett.

<sup>2</sup> For instance, see the versified list of poetic synonyms entitled *Hugar heiti ok hjarta*, 'Names for mind and heart' (ed. Gurevich 2017: 964), and the longer list of synonyms in Snorri Sturluson's *Edda* (trans. Faulkes 1987: 154). For *hugr*, commonly translated as 'mind' or 'thought', which 'prevails in this semantic field', Gurevich (2017: 964) lists the senses "'heart, temper, mood, disposition, desire, wish, feeling, affection"', "mind, thought, reason, frame of mind", "courage, valour".



eddic and skaldic. The word ‘eddic’ derives from the so-called *Poetic Edda*,<sup>3</sup> a collection of anonymous poems with mythological and legendary subjects, preserved in an Icelandic manuscript (GKS 2365 4to) of c. 1270. The age of the poems themselves is difficult to establish: some are likely to be around three centuries older than their manuscript witness, passed down in oral tradition from before Iceland’s official conversion to Christianity c. 1000. Others are probably younger or have been altered during transmission. Poetry of a similar style is also found in other medieval Scandinavian contexts with similar legendary or supernatural subject matter.

Skaldic poetry, on the other hand, is generally composed about ‘real world’ people and events. The name comes from the Old Norse word for ‘poet’: *skáld*. It probably originated as praise-poetry for kings and leaders, but during the long period in which it was an active art form (roughly between the ninth and fifteenth centuries) it was put to a variety of other purposes including insult and satire, love poetry, social commentary and, later, praise for the Christian God. Contrary to the case with eddic poetry, the names of individual skalds are often known. The form and characteristics of skaldic poetry, the main focus of my investigation, will be discussed in more detail below.

## Skaldic Scaffolding

Old Norse poetry (both eddic and skaldic) is alliterative and syllabic. Different metres were available for different purposes, whose use of or adherence to these formal features was more or less strict. Eddic metres have fixed numbers of stressed positions, but are not rigorously syllable-counting. Skaldic metres, though developed from eddic forms, are much tighter.<sup>4</sup> The archetypical metre of skaldic poetry is *dróttkvætt* (court metre), which placed rigid demands on the poet. Each line has three stressed and three unstressed syllables. In a typical eight-line stanza, one or commonly two words of each odd line must alliterate with the first stressed syllable of the following even line. In addition, odd lines carry internal *skothending* (half-rhyme), while even lines carry internal *aðalhending* (full rhyme). This can be exemplified in a stanza by the prolific eleventh-century poet Sigvatr Þórðarson, the first stanza of a longer poem composed for his patron King Óláfr Haraldsson of Norway in c. 1019. In the stanza below *skothending* has been italicised and *aðalhending* represented in bold type.

Hugstóra biðk heyra  
**hressfœrs** jöfurs, þessar  
 — þolðak *vás* — hvé *vísur*,

<sup>3</sup> That the collection got the name *Edda* seems to be the result of a seventeenth-century misunderstanding; on this matter and the possible meanings of the term see Clunies Ross 2005: 7, 160.

<sup>4</sup> For further details about the various eddic and skaldic metres and the characteristics of skaldic poetry in general, see Clunies Ross et al. 2012.

verðung, of fqr gerðak.  
 Sendr vask upp af qndrum  
 austr (svafk fátt í hausti)  
 til Svíþjóðar (síðan)  
 svanvangs í fqr langa.

I ask the mighty-hearted retinue of the energetic ruler [Óláfr] to hear how I composed these verses about a journey; I endured hardship. I was sent up from the skis of the swan-plain [SEA > SHIPS] on a long journey east to Sweden; I slept little after that in the autumn.<sup>5</sup> (Fulk 2012: 583, my formatting in Old Norse text)

These strict metrical requirements necessitate and engender further specialist features and diction. First, word order can be highly disrupted. The inflected syntax of Old Norse makes this less of a problem than it might be in Modern English, for example, but compared to Old Norse prose texts it still represents unusual linguistic usage that would require more interpretative work than ordinary speech. The stanza given above, if represented with the word order of Old Norse prose, would read as follows:

Biðk hugstóra verðung hressfœrs jofurs heyra, hvé gerðak þessar vísur of fqr; þolðak vás. Vask sendr upp af qndrum svanvangs í langa fqr austr til Svíþjóðar; svafk fátt síðan í hausti. (Fulk 2012: 583)

Stanzas often fall into two equal parts of four lines and word order is not usually dispersed beyond the boundaries of each half-stanza, but listeners must still wait until each set of four lines has been recited before they can begin to unscramble the words into a meaningful order.

Second, in order for the alliteration, rhyme and syllables to fall in the right places, the skald needs a wide repertoire of alternative ways of saying what needs to be said. One solution was the development of a vast number of poetic synonyms, called *heiti*. An example from Sigvatr's stanza above is *jofurr* ('ruler' or 'prince'), a word found commonly but almost exclusively in poetry, here referring to King Óláfr (the standard Old Norse word for 'king' is *konungr*).

Another solution was the employment of poetic circumlocutions called kennings. There are two kennings in Sigvatr's stanza, one embedded within the other. The compound word *svanvangr* ('swan-plain') is made up of what modern scholarship terms a base-word, namely *vangr* (plain), and a determinant, namely *svanr* (swan). Considering what 'the plain of the swan' might be gets us to the referent – the thing the poet really wants to talk about but which is not expressed – that is, the sea. The latent concept 'sea' then forms the determinant of another kenning with

<sup>5</sup> According to standard conventions, small capital letters inside square brackets aid the reader in understanding the periphrastic diction of skaldic poetry: here the 'swan-plain' is the sea and the 'skis of the swan-plain' are ships. This specialised diction is explained later in this section.

the base-word 'skis'. The skis of the swan-plain = the skis [a means of travelling] of the sea = ships.

Skaldic poetry is dazzlingly cerebral: one needs to do a lot of mental work either to compose or to understand it. In many ways, that is the point. It was in the interests of skalds, patrons and audiences to make it so (Lindow 1975). Being a court poet was a lucrative profession, precisely because it was a rare and difficult skill. Meanwhile, the members of the court who knew how to understand skaldic verse could celebrate their elite mental capacity: this was court poetry in every sense, not accessible to the uninitiated, ordinary folk.

Almost paradoxically, some of the features that make skaldic poetry seem so difficult actually facilitate, or scaffold, both composition and interpretation, once one knows the rules. The existence of its specialised diction in particular carries some of the 'cognitive load' (Sweller 1998) for poets and their audiences.

Skalds did not tend to create kennings about absolutely anything they wanted. The modern classification of extant kennings by Rudolf Meissner (1921) recognises 106 kenning referents, but in fact around two-thirds of extant kennings point to just ten referents, those most relevant or necessary for poets to write about their heroic, noble patrons ('man' alone accounts for more than 20 per cent of all kennings) (Wills, forthcoming). Moreover, for any given referent, there are certain 'patterns' that govern the way the kenning is formed. For instance, it could be said that the ship-kenning 'the skis of the sea' falls into the pattern '[means of transport] of [body of water] = ship'. To create more ship-kennings the base-word and determinant can each be varied by means of *heiti*, other kennings, metonymy or other rhetorical devices, but the semantic field of reference behind each part remains roughly the same. One could equally say 'the horse of the ocean' or 'the sea-chariot' or 'the steed of the wave'. When a noun falls into more than one semantic field, the possibility of further variation is opened up. For example, a horse is a means of transport but it is also an animal. So it is possible to say 'the wolf of the river' or 'the elk of the sea' or even 'the elephant of the wave' (see Meissner 1921: 218–20). Alternatively, a ski is a means of transport but it is also a wooden object (as was, at the time, a ship, making it conceptually closer to the referent than the animal-related version). So it is possible to say 'the tree of the sea' or 'the sea-bench' (Meissner 1921: 221–2). Neither an elephant nor a bench is (in the Old Norse world at least!) a means of transport, but they come from the same semantic fields as things that are means of transport.<sup>6</sup> The more of this type of variation that occurs, the more cognitively dissonant the resulting kennings, an effect which seems to have been valued. Rather remarkably, many kennings are unique in their precise combinations of base-word and determinant: a recent analysis by Wills (forthcoming) estimates around 85 per cent of a corpus of c. 10,000 extant kennings are unique.

Although the poet's choice of base-word and determinant could create very different effects, then, ultimately familiar patterns governed the parameters of those choices. The cognitive load was accordingly reduced: if poets wanted to talk

<sup>6</sup> Compare the theory of 'conceptual blending' advanced by Fauconnier and Turner (2002).

about ships, the framework with which they could do so already existed. And if listeners heard a ‘transport’ word and a ‘water’ word, they could have a reasonable expectation that a ship was floating somewhere in the sea of words washing over them. While for someone unfamiliar with the system it is possible to ‘solve’ many kennings, like solving a riddle or crossword clue, the mental effort is reduced for the experienced listener who simply needs to recognise common semantic-field combinations.

Whether many listeners could understand skaldic poetry as it was being recited, however, is another question.<sup>7</sup> A classic example from the sagas has a woman memorise a verse and then go home to work out its meaning (*Gísla saga Súrssonar* ch. 32). As this case highlights, a further reason for the complexity of skaldic verse is to scaffold another mental process: memory. In another incident, a man gives a message in verse to a woman so that she can pass it on exactly to someone else in her household (*Grettis saga Ásmundarsonar* ch. 47). In the prologue to his history of the kings of Norway, *Heimskringla*, the Icelandic author, skald and chieftain Snorri Sturluson explains why he is confident in using skaldic poetry as a source for the lives of kings that lived in the past: ‘En kvæðin þykkja mér sízt ór stað færð, ef þau eru rétt kveðin ok skynsamliga upp tekin’ (Aðalbjarnarson 2002: 7; ‘As to the poems, I consider them to be least corrupted if they are correctly composed and meaningfully interpreted’, Finlay and Faulkes 2011: 5). Snorri is saying that if all of the expected rules of skaldic verse – alliteration, rhyme, syllables and so on – are still in place and the stanza makes sense, it must have been preserved as the poet intended it, even many years later. The complex interaction of the familiar and the bizarre in kennings probably also contributed to their memorability (cf. Heslop 2014: 79).

In turn, as Snorri’s quotation further implies, poetry ‘provided early medieval historians with a marvellous peg upon which to hang their narratives, especially those that covered the preliterate period’ (Clunies Ross 2005: 52). Deeds of kings and earls, and battles otherwise forgotten, were recorded in oral praise-poems that Snorri and other historians used as the basis for their extensive prose histories. The poems facilitated the further cognitive work of interpretation and elaboration, allowing medieval scholars to piece together their understanding of what happened in the past. (The fact that the poetry was crystallised in their written texts is of course why we still have it today.)

Skaldic verse, then, could well be described in the terms of Gallagher and Crisafi (2009: 48, emphasis in the original), namely that it is ‘*cognition produced*, in the sense that it is the product of many (and perhaps generations of) cognizers’ (here poets), and that it is ‘*cognition producing*’, both in the sense that further poetry is produced along similar lines and in the sense that remembered poetry acts as a

<sup>7</sup> In a similar vein, although the sagas give many examples of people supposedly composing stanzas of skaldic verse on the spot, for the longer poems in complex metres ‘improvisation was not an option’, as Heslop (2014: 78) puts it. Since it was a predominantly oral medium, poets recited their own work from memory.

cognitive prop for remembering – or constructing – larger narratives. I will also argue below that it is ‘cognition producing’ in that it offers new ways of perceiving and thinking about the world. Yet poetry is not an ‘institution’ in the way that Gallagher and Crisafi’s examples of the legal system or museums are. It is perhaps better described as a system of ‘enculturated cognition’ (Hutchins 2011) or ‘cognitive integration’ (Menary 2013), in which ‘the mind [is] extended by social/cultural practices that are specifically targeted at cognitive tasks’ (Menary 2013: 26). Nonetheless, elements from all these hypotheses (which are not in all particulars incompatible) are useful in thinking not about how we might describe skaldic poetry, which is not the primary aim of this chapter, but about how skaldic poets understood it, which is what I am interested in here. Although Old Norse poets did not think or express themselves in terms of modern cognitive theories, I suggest that they understood poetry and its cognitive impact in some kindred ways. I think there is evidence that at least some poets saw poetry in a way akin to what we might now describe as a ‘thought-enabling cognitive niche’ (Clark 2006: 370) and felt that it allowed them to ‘develop new, culturally endowed, cognitive capacities’ (Menary 2013: 27). These capacities do not just relate to the composition of poetry but, as we shall see, to other tasks as well. This understanding was not only expressed by but developed from the metaphorical complex surrounding the myth of the mead of poetry, which I describe in the next section.

### The Myth of the Mead of Poetry

The mead of poetry, according to Norse mythology, is a drink ‘hverr er af drekkur verðr skáld eða frœðamaðr’ (Faulkes 1998: 3; ‘whoever drinks from which becomes a poet or scholar’, Faulkes 1987: 62).<sup>8</sup> The myth of this poetic mead is found in its fullest extant form in another text called *Edda*, this one put together in the 1220s by Snorri Sturluson. Snorri’s *Edda* is a treatise on skaldic poetry, which, as part of its specialised diction, often refers allusively to mythic figures and stories. More than two centuries after the Christianisation of Iceland, Snorri worried that knowledge of the old myths was diminishing. As he puts it:

En þetta er nú at segja ungum skáldum þeim er girnask at nema mál skáldskapar ok heyja sér orðfjöldað með fornum heitum eða girnask þeir at kunna skilja þat er hulit er kveðit. (Faulkes 1998: I, 5)

But these things now have to be told to young poets who desire to learn the language of poetry and to furnish themselves with a wide vocabulary using traditional terms; or else they desire to be able to understand what is expressed obscurely. (Faulkes 1987: 64)

<sup>8</sup> The mead’s bestowal of scholarship tends to be overlooked since the extant, largely poetic, sources naturally privilege poetic ability.

Parts of his work are thus dedicated to elaborating the mythological narratives necessary for understanding older poetry or for composing new poems in the traditional style. Snorri has long been charged with elaborating, systematising, misinterpreting or otherwise shoehorning his sources into neat narratives. His take on the myth of the mead of poetry is no exception. Several scholars (Stephens 1972; Frank 1981; Orton 2007) have argued along the lines that the myth originally stemmed from a cognitive metaphor, that of oral-poetry-as-alcoholic-drink, which is the aspect I am most concerned with here. However, Snorri's version provides a convenient explanation of the poetic diction relating to the myth, some of which will be found in my analysis of skaldic sources below. I therefore paraphrase Snorri's account below, but later concentrate on the work of early (pre-Christian, insofar as that can be established) poets who will not have been influenced by Snorri and who are unlikely to have been (directly) influenced by learned Christian ideas about the mind.

The story begins by explaining that the two 'races' of gods, the Æsir and the Vanir, had had a dispute and as a sign of their truce all parties spat into a container, mingling their saliva to seal the deal. In order not to let this symbol of peace be lost, the Æsir make a man out of the saliva, whom they name Kvasir. This 'incarnation of dialogic knowledge, of verbal resolution' (Quinn 2010: 203) is said by Snorri to have been 'svá vitr at engi spyrr hann fleira hluta er eigi kann hann órlausn' (Faulkes 1998: 3; 'so wise that no one could ask him any questions to which he did not know the answer', Faulkes 1987: 62). When Kvasir encounters two dwarfs, Fjalarr and Gjalarr, they kill him and blend his blood – the embodied essence of his knowledge – with honey to make a potent mead. The dwarfs cover up the act by telling the Æsir that Kvasir 'hefði kafnat í mannviti fyrir því at engi var þar svá fróðr at spyrja kynni hann fróðleiks' (Faulkes 1998: 3; 'had suffocated in intelligence because there was no one there educated enough to be able to ask him questions', Faulkes 1987: 62). Although this is a blatant lie – and perhaps a humorous warning about being too clever for one's own good<sup>9</sup> – it is also an interesting articulation of ideas of shared cognition: the need to 'geði . . . blanda' or 'mingle minds' (Neckel and Kuhn 1983: 24), as the eddic poem *Hávamál* (st. 44) also advises.

The dwarfs have a mishap when out to sea with a giant, Gillingr, who drowns. The pair soon tire of the weeping of Gillingr's wife and contrive to kill her too. The giants' son, Suttungr, captures the dwarfs and imprisons them on a tidal skerry and to save their lives they offer him the mead in compensation for his parents' deaths. Suttungr keeps the mead in three vats (named in the story as Óðrerir, Boðn and Són), which he conceals within the mountain Hnitbjörg and sets his daughter Gunnlōð to guard over it. The god Óðinn (Modern English Odin), in disguise, seduces Gunnlōð and she allows him three swigs of the mead. Being Óðinn, he is able to drain the entire supply in three mouthfuls and promptly turns himself into the form of an eagle and flies back to the home of the gods, with Suttungr (also in

<sup>9</sup> Cf. warnings in the poem *Hávamál* (sts 54–6) about being too wise.

eagle form) in hot pursuit. The Æsir are waiting with containers and Óðinn regurgitates the mead as he flies in, thus making it available to distribute ‘þeim mönnum er yrkja kunnu’ (Faulkes 1998: 4; ‘to those people who are skilled at composing poetry’, Faulkes 1987: 64). In Snorri’s telling the myth even accounts for the existence of bad poetry: in the drama of his near miss in getting caught, Óðinn ‘sendi aprt suman mjöðinn’ (Faulkes 1998: 4; ‘sent some of the mead out backwards’, Faulkes 1987: 64); this was not the preserve of the chosen few but taken up by ‘hverr er vildi, ok køllum vér þat skáldfífla \*hlut’ (Faulkes 1998: 4; ‘anyone . . . that wanted it, and it is what we call the rhymester’s share’, Faulkes 1987: 64).<sup>10</sup>

As Snorri points out (and later illustrates with citations of examples from the poetic canon), the many stages of the narrative lead to a plethora of ways in which poets could refer, in kennings or otherwise, to the mead of poetry and by extension poetry itself. For instance, he points out:

Af þessum køllum vér skáldskap Kvasis blóð eða dverga drekku eða fylli eða nakkvars konar lög Óðreris eða Boðnar eða Sónar eða farskost dverga, fyrir því at sá mjöðr f[lut]ti þeim fjørlausn ór skerinu, eða Suttunga mjöð eða Hnitbjarga lög. (Faulkes 1998: 4)

That is why we call poetry Kvasir’s blood or dwarf’s drink or the contents or some term for liquid of Odrerir or Bodn or Son, or dwarfs’ transportation, because this mead brought them deliverance from the skerry, or Suttung’s mead or the liquid of Hnitbjorg. (Faulkes 1987: 62)

Later he adds ‘fengr ok fundr ok farmr ok gjöf Óðins’ (Faulkes 1998: 11; ‘Odin’s booty and find and cargo and gift’, Faulkes 1987: 70) to the catalogue. This is what I mean by the ‘metaphorical complex’ surrounding the myth. To call poetry ‘dwarf’s transportation’ or ‘Óðinn’s find’ does not explicitly reference alcoholic drink, but the mead underlies the kennings if one knows the full story: the myth generates a whole complex of possible metaphorical expressions.

## Poetry as a Mind-Altering Substance

Judy Quinn (2010) has carried out an extensive and nuanced analysis of the places in the *Poetic Edda* where knowledge is conceptualised as liquid. The many instances and layers of this representation identified by Quinn show that it is what Lakoff and Johnson (1980) would consider a conceptual metaphor: one which is more than just a literary effect, but which actually shapes thought about the world. Although the metaphor is still familiar to Modern English speakers – we are perfectly used to the

<sup>10</sup> The rather charming story about Kvasir and the (less charming) tale of Óðinn’s rear-end excretion of some of the mead are the prime candidates for being later accretions to the myth; whether Óðinn was always understood to have ingested the mead in bringing it back for the gods or was in other versions thought to have carried it back in its containers is also a point of speculation.

idea of ‘drinking in’ or ‘absorbing’ knowledge – Quinn (2010: 183) notes that the metaphor is one that is particularly apt for an oral society: ‘knowledge flow[s] from mouth to mouth’ but may be ‘poisoned, or spilt’ in the process. Quinn’s essay and the examples she analyses are illuminating, but most ultimately relate to knowledge as input, rather than revealing much about cognition as an active mental process.

I suggest that the mead of poetry myth is related to this metaphor of ‘liquid knowledge’ (Quinn 2010) but is fundamentally different because of the nature of the liquid involved: alcohol. Alcohol is not, of course, nowadays considered (in either scientific or popular accounts) to have effects that are particularly positive or productive. Articulation of the negative effects of alcohol can also be found in Old Norse texts (for instance, Snorri himself coins a humorous kenning for wine: ‘strúgs . . . galli’ (‘destruction of dignity’, Gade 2017b: 1131). Alcohol is also not immediately relevant to the distributed cognition hypothesis because although it is an external substance, its effects are only felt once internalised and are unidirectional.<sup>11</sup> I counter these objections in two ways. First, as a cultural concept, ‘alcoholic drink is generally coded positive in Old Norse mythology’ (Quinn 2010: 187). Mead, in particular, is not just any alcoholic drink, but one that, at the time, would have been fairly rare and thus prestigious (Guerrero Rodríguez 2007: 10). It may even have had a semi-legendary status of its own (Guerrero Rodríguez 2007: 56–7). Since the mead of poetry is a mythic form of alcohol, it need not be equated exactly with real-world alcohol. Second, it is not the particular transformative effects of alcohol that, I argue, the myth is concerned with: it is the transformative effects of what the mead symbolically represents, namely poetry. Whatever our modern scientific understanding of alcohol’s effect on the brain, it is subjectively observable that it has an impact on the mind. I posit that the mead of poetry metaphor invites the interpretation that poetry also has a thought-changing (indeed, augmenting) effect on the mind, but that the two effects are not necessarily identical.

The mead of poetry shapes the consumer: it makes them into a poet or scholar. Analogously, the recitation of poetry shapes the shaper, who in turn shapes more words and more poetry (cf. Anderson 2015b: xiii). One of the clearest articulations of this two-way relationship is found in the eddic poem *Hávamál* (sts 140–1). The poem is presented as the first-person perspective of the god Óðinn, who describes how he gained enhanced cognitive ability with regard to poetry and speech, instigated by a swig of the mead of poetry:

Fimbulliód nío                    nam ec af inom frægia syni  
                     Bǫllþors, Bestlo fǫður,  
 oc ec drycc of gat            ins dýra miaðar,  
                     ausinn Óðreri.

<sup>11</sup> On the importance to the distributed cognition hypothesis of reciprocity, feedback loops and ‘two-way flow of influence between brain, body and world’ see, for example, Clark 2003: 87, 113–14.



Þá nam ec frœvaz,      oc fróðr vera  
                               oc vaxa oc vel hafaz;  
 orð mér af orði          orðz leitaði  
 verc mér af verki        vercs leitaði. (Neckel and Kuhn 1983: 40)

Nine mighty spells I learnt from the famous son  
 of Bolthor, Bestla's father,  
 and I got a drink of the precious mead,  
 I, soaked from Odrerir.

Then I began to quicken and be wise,  
 and to grow and to prosper;  
 one word from another word found a word for me,  
 one deed from another deed found a deed for me. (Larrington 2014: 32)

For Quinn (2010: 214), the 'cognitive process' that leads to creativity and productivity described in these stanzas is 'rather obscure': 'once initiated into knowledge, speech and action somehow flow in a self-perpetuating manner, as though, once internalised, the precious mead becomes a cataract of the mind'. Here she seems to classify the mead of poetry as just another form of liquid knowledge, implying that imbibing it is like downloading large amounts of data into the mind, a one-way process that would indeed leave a lacuna in understanding how that input becomes a different and augmented output. I would argue, however, that the symbolic mead should not be understood as conferring static knowledge but as conferring enhanced cognitive ability. It is *alcoholic* liquid: a mythic mind-transforming substance. It is not a cataract, but rather a catalyst for the mind.

Arguably, the processes of learning and working with poetry – processes symbolically represented by the mead of poetry motif – are not only generative of more language. In addition, they actually offer new ways of thinking about the world. For instance, any kenning could be said to propose a new take on the world: a ship is (imaginatively) perceived as a horse, poetry as an intoxicating drink, a sword as a snake. These new perspectives are rather like Hutchins's (2011: 441) example of viewing a constellation: each 'exists only by virtue of someone enacting it via a cultural practice that allocates . . . attention in a particular way'. These new ways of seeing the world can be extended further: poets could draw on the component parts of kennings to create new imagery, comparisons or meanings in what are known as *nýgervingar* (new creations). Consider, for instance, Egill Skallagrímsson's *Skjaldardrápa* (ll. 5–8):

skalat of grundar Gylfa  
 glaums misfengnir taumar,  
 hlýðið ér til orða,  
 erðgróins mér verða. (Jónsson 1912–15: II, 42)

It won't happen to me that I lose grip of the reins of the Glaumr <mythical horse> of the ground of Gylfi <mythical sea-king> [SEA > SHIP] of the earth-grown being <dwarf> [POEM]; hear my words.<sup>12</sup>

Here, Egill ultimately draws on a conventional kenning-pattern for poetry ('ship of the dwarf', which as we have seen relates to the mead of poetry myth). He builds this kenning, however, from other kennings, once again utilising conventional patterns: the sea is the land of a mythological sea-being, in this case Gylfi, which then forms the determinant of a conventional 'ship' kenning pattern (that is, a ship is the horse of the sea). This allows Egill to bring 'horse' imagery, unusually, into his description of a poem. Instead of simply using the 'horse' base-word as a poetic commonplace, Egill uses it dynamically, extending it outwards from the kenning ('I won't lose grip of the reins of the horse') to create a new comparison between himself controlling the poem ('I won't lose grip of the poem') and himself as skilled rider handling his horse. In turn, the poem-as-horse is imbued with life and vigour, the horse and rider, or poem and poet, envisaged in tandem in another two-way interaction. The familiar rules of poetry, that is, the cognitive props already in place – a ship is a horse of the sea – lay the foundations for new metaphors which turn out to have an aptness – 'truths' about the world – of their own. As Clark (1998) has argued for language in general, the words create the thoughts (cf. Anderson 2015b: 55).<sup>13</sup>

Although myth is good to think with, a problem arises around the extent to which it can be relatable to human experience. How do the actions of a god and a mythical substance made from divine spit and curated by dwarfs and giants affect 'real life' poets? Quinn (2010) reads the mead of poetry as described in *Hávamál* as something that should be taken literally: Óðinn physically drinks an actual material, liquid substance. Quinn argues that the poem deliberately highlights the difference between humans (who, the poem suggests, cannot handle drink) and gods (who can) and concludes that 'audiences of eddic poems can only marvel at [the mead's] momentary appearances . . . for men it is just to be . . . kept alive as an idea of what they might "get" if they win the favour of the gods' (Quinn 2010: 226). This reading has validity and it is true that the knowledge Óðinn goes on to relate in *Hávamál* is numinous and not fully revealed to the audience. However, it is also true that there were, of course, real human poets, who also used the mead of poetry myth self-referentially.

It was certainly in the interests of 'real-life' poets to perpetuate an aura of mystery and, as is commonly observed, some use the myth to suggest they are indeed among

<sup>12</sup> My translation.

<sup>13</sup> Clark (1998: 176) also discusses poetry specifically: 'it is often the properties of the words (their structure and cadence) which determine the thoughts that the poem comes to express'. Skaldic poetry could be said to both limit and extend the possibilities for the expression of thought: its rules put constraints on word choice, but also, as in the example discussed here, lead to new choices that might not otherwise have been envisaged.

the chosen few (Clunies Ross 2005: 91). Clearly they were not, however, actually drinking a supernatural substance. Yet there was a way of drinking that divine mead – metaphorically speaking. Óðinn’s literal drinking of the physical mead is analogous to poets’ metaphorical ‘drinking in’ of poetry itself. By hearing, interpreting, repeating and appreciating poetry, words find other words for poets: they eventually have the repertoire, experience and understanding necessary to compose their own.

Initiation ceremonies, where knowledge was transferred, may well have included ritual drinking. Skaldic verse would have been recited at feasts and celebrations, where it would have gone hand-in-hand with alcohol consumption. There are certainly good ‘literal’ reasons why poetry and mead may have come to be associated with one another, but there are perhaps even better symbolic ones. The fragmented, dissonant language of skaldic poetry may be reminiscent of intoxication. Frank (1981: 170) has gone so far as to claim ‘inebriation was the goal [of poetry]’, imagining the ‘sudden unaccountable surge of power, of exhilaration, that came with comprehension’. The myth may even incorporate notions of alcohol’s tendency (like that of other addictive substances), subjectively observable, to generate desire for more alcohol (Wang et al. 2015). Drink follows drink. Words follow words.

Modern neuroscience can explain the extension of cognitive capacities by socio-cultural learning: ‘cultural practices and artefacts can get under the skin and transform the processing and representational structure of cortical circuitry . . . This is the clearest possible case of the extension of a cognitive ability; basic neural processing is transformed’ (Menary 2013: 29). The Old Norse world did not have access to this knowledge or this language, but the mead of poetry metaphor was a way of thinking about how ‘processing routines cross from the world into the brain’ (Menary 2013: 29). It encapsulates the idea of ‘transforming our basic biological capacities, allowing us to complete cognitive tasks’ (Menary 2013: 29). In the following section I examine some examples of how poets used the mead of poetry motif in ways that I think support the reading of poetry as a transformative substance and the hypothesis that poets consciously used it to explore poetry’s relationship to, and effect on, the mind. That is not to say that this reading pervades all references to the mead motif or that other interpretations of other examples are invalid. The myth and the metaphorical complex surrounding it were clearly flexible and put to multiple uses. Neither do I suggest that the poetic expressions discussed here equate to a systematic philosophy or even folk psychology of the mind that was widely understood throughout early Scandinavian society; these examples are idiosyncratic but, taken together, speak interestingly to some of the issues explored in these volumes.

## Poets on Poetry

It is surely telling that the largely poetic noun *óðr* (which the name Óðinn relates to) means both ‘mind’ and ‘poetry’. Evidence that skaldic poetry could be thought of as a way of extending the mind of the poet outwards into the world can be found in an anonymous half-stanza preserved in Snorri’s *Edda*:

Bæði ák til brúðar  
 bergjarls ok skip dverga  
 sollin vind at senda  
 seinfyrð götu eina.

I have both, my swollen wind of the wife of the mountain-jarl [GIANT > GIANTESS > THOUGHT]<sup>14</sup> and the never-forgotten ships of dwarfs [POEMS], to send in the same direction. (Gade 2017a: 512)

Unfortunately, almost nothing is known about the composition of this fragment; although a tenth-century provenance has been suggested, it cannot be securely dated (Gade 2017a: 512). Snorri uses it to illustrate the poetry-kenning type ‘ship of dwarfs’. The mead of poetry motif thus underlies the kenning, but alcoholic drink is not explicitly mentioned. The poetry-as-ship metaphor additionally imparts its own conceptual domains: poetry is something material, poetry is something wrought by craftsmen,<sup>15</sup> poetry is something which travels in the world. The fragment thus juxtaposes (internal, abstract) thought and (external, material) poetry, with the particular diction employed by the poet further suggesting that the ‘wind’ of his thought is propelling the ‘ships’ that are his poems. The poet highlights the memorability of poetry, suggesting a hope that his own mind will likewise continue to exist in the minds and mouths of others. Translating something abstract and intangible (mind/wind) into something material (ships/poems) offers a permanent record of thought.

Skaldic poets are famously not shy about celebrating their own intellectual brilliance, but it is possible to find expressions of the cognitive debt they owe to other minds. The following examples hint at an understanding of skaldic poetry as a product of shared cognition, or what Gallagher (2013) terms the ‘socially extended mind’.<sup>16</sup> Building on his and Crisafi’s 2009 article on ‘mental institutions’, Gallagher describes such institutions thus:

We create these institutions via our own (shared) mental processes, or we inherit them as products constituted in mental processes already accomplished by others. We then engage with these institutions – and in doing so, participate with others – to do further cognitive work. (Gallagher 2013: 7)

As noted earlier, poetry does not sit easily alongside the concept of a ‘mental institution’ as exemplified by Gallagher and Crisafi. However, Gallagher’s (2013)

<sup>14</sup> On this difficult-to-explain kenning for ‘thought’, see Quinn 2012.

<sup>15</sup> On poets as craftsmen, see Clunies Ross 2005: 84–91.

<sup>16</sup> On portraying poetry as a gift from Óðinn as a modesty topos, see Clunies Ross 2005: 95–6. This topos differs from what I am discussing here in that in my examples, I argue that cognitive processes are explicitly highlighted to show that poets are part of a chain of active thinking rather than merely passive receiver-givers in a chain of gift-giving.

description does fit well with certain notions implied in skaldic poetry. The earliest-known skaldic poet Bragi Boddason (active c. 850–70) characterises himself thus:

Skald kalla mik  
 skapsmið Viðurs,  
 Gauts gjafrotuð,  
 grepp óhneppan,  
 Yggs qlbera,  
 óðs skap-Móða,  
 hagsmið bragar.  
 Hvats skald nema þat?

They call me poet, smith of Viðurr's <= Óðinn's> mind [(*lit.* 'Viðurr's mind-smith') POETRY > POET], getter of Gautr's <= Óðinn's> gift [(*lit.* 'Gautr's gift-getter') POETRY > POET], unscanty poet, server of Yggr's <= Óðinn's> ale [(*lit.* 'Yggr's ale-server') POETRY > POET], creating-Móði <god> of poetry [POET], skilled smith of poetry [POET]. What's a poet if not that? (Clunies Ross 2017: 64)

Here the poet is depicted as a smith, or craftsman of someone else's mind. On one level, 'Óðinn's mind' is a standard circumlocution for poetry: Bragi is simply saying he is a craftsman of poetry. But his choice of kenning both acknowledges his own product as 'constituted in mental processes already accomplished by others' – alluding to the myths surrounding Óðinn's own acquisition of the mead of poetry (and thereby the ability to compose) – and indicates the 'further cognitive work' he will himself undertake as a 'smith' of poetry, crafting a material already imbued with cognitive possibilities. Highlighting the social dynamics of poetry, Bragi goes on to point out that he is both receiver (or 'getter') and 'server' of the potent mead, culminating in his own elevation to godlike status as creator.

Perhaps the objection could be raised that Bragi's stanza is not truly dealing with socially cognitive processes, because the mind that constitutes his workable material is that of a supernatural being. However, further examples can be found in which poets allude to their intellectual debt to their predecessors or contemporaries and to their own role in stimulating others to compose poetry. The mead of poetry motif once again proves useful, since the sharing of mental resources is likened to the sharing of drink at a social gathering. For instance, in a poem dedicated to his foster-father Gizurr gullbrárskáld ('Gold-eyelash-poet'), the early-eleventh-century skald Hofgarðr-Refr Gestsson says that Gizurr 'oft kom . . . at helgu fulli / hrafnásar mér' ('often brought me to the holy cup of the raven-god [=Óðinn > POETRY]', Marold et al. 2017a: 255). As hospitality always requires hospitality in return, Hofgarðr-Refr repays like for like: that is, he creates poetry in return for (and enabled by) the tuition in poetry given to him by his foster-father!<sup>17</sup>

<sup>17</sup> See Gurevich 1996 on the lack of evidence for poets' training.

Þér eigum vér veigar,  
Valgautr, salar brautar  
Fals, hrannvala, fannar,  
framr valdr, ramar gjalda.

Valgautr <= Óðinn = Gizurr>, we have to repay you for the powerful drinks of the hall of the Falr <dwarf> of the path of the snow-drift [MOUNTAINS > GIANT = Suttungr > CAVE > POETRY], outstanding owner of wave-horses [SHIPS > SEAFARER]. (Marold et al. 2017a: 256)

Elsewhere, the poet Úlfr Uggason describes the intellectual dynamics between himself and his patron Óláfr Høskuldsson:

Hjaldrgegnis telk Hildar  
hugreifum Óleifi  
(hann vilk at gjöf Grímnis)  
geðfjarðar ló (kveðja).

I recite the water of the mind-fjord [BREAST] of the promoter of the noise of Hildir <valkyrie> [(lit. ‘noise-promoter of Hildir’) BATTLE > = Óðinn > POEM] for the glad-hearted Óláfr; I want to summon him to the gift of Grímnir <= Óðinn> [POEM]. (Marold et al. 2017b: 405)

Here Úlfr depicts himself as pouring a drink (that is, a poem) for Óláfr’s consumption. As in Bragi’s stanza above, Úlfr draws explicit attention to the mental potency of the liquid (it comes from the *geðfjarðr* or ‘mind-fjord’) and thereby to the mental potency of his words. His stanza juxtaposes Óðinn’s chest cavity and its product with Óláfr’s psychosomatic state (he is *hugreifr*, ‘glad hearted’), suggesting a blending of minds and an active mental effect (and affect) on the poem’s hearer.

The image of liquid contained in the chest cavity points to the culturally widespread ‘container metaphor’ of the mind.<sup>18</sup> That raises the question of whether it is actually cognition, as understood by some distributed cognition theorists, that is being described. To quote Gallagher again:

Cognition is not about content . . . being carried by vehicles; cognition is an enactive and emotionally embedded engagement with the world by which we are able to solve problems, control behaviour, understand, judge, explain, and generally do certain kinds of things. (Gallagher 2013: 11)

It must be admitted that the mead of poetry motif lends itself to container imagery, where the poet is a vehicle carrying content. For instance, Egill Skallagrímsson describes his journey to the court of Eiríkr *blóðax* (‘bloodaxe’), the Norwegian king of Northumbria (r. c. 947–8 and 952–4), thus:

<sup>18</sup> See, for example, Lakoff and Johnson 1980: 148; Lockett 2011b: 5 and references.

Vestr komk of ver,  
 en ek Viðris ber  
 munstrandar mar

...

hlóðk mærdar hlut  
 munknarrar skut. (Jónsson 1912–15: I, 30–1)

I went west over the sea and I carried the sea of Óðinn's mind-shore [BREAST > POETRY] . . . I loaded the cabin of my ship with a cargo of praise. (Slightly adapted from Fell 1975: 190)<sup>19</sup>

However, Egill is a poet for whom it is very clear that poetry does things in the world. In fact, Egill's poetry does (or is intended to do) almost all of the processes Gallagher enumerates. According to *Egils saga Skallagrímssonar*, the biographical text in which it is preserved, the very poem this stanza is part of (*Höfuðlausn* ('Head Ransom')) is composed to ransom Egill's life from Eiríkr. It persuades, it flatters, it memorialises, creating a panegyric to Eiríkr which, as Egill says later – 'svá fór þat fram / at flestr of nam' (Jónsson 1912–15: I, 33; 'it has progressed so that most have heard it', Fell 1975: 192) – now exists in other people's minds and will go on doing work in the world through their consideration and repetition of it.

Moreover, even at the same time as representing himself as vessel, Egill complicates implications of the passivity of both his 'cargo' and himself. His poetry-kennings draws on the poetry-as-liquid concept, but his choice of determinant – 'Óðinn's mind-shore' – makes clear the cognitive involvement in the product he presents to the king. Later in the poem, he refers to his own creative process (st. 19):

Jøfurr hyggi at,  
 hvé ek yrkja fat;  
 got þykkjumk þat,  
 es ek þogn of gat;  
 hrærðak munni  
 af munar grunni  
 Óðins ægi  
 of jøru fægi. (Jónsson 1912–15: I, 33)

Prince consider what I have composed. It is good that I had silence. I stirred with my mouth from the depths of my mind Óðinn's flood [POETRY] about the artist of battle [= Eiríkr]. (Slightly adapted from Fell 1975: 192)

<sup>19</sup> In this and subsequent quotations from Lucas's translations (in Fell 1975), as well as those from Turville-Petre 1976, I have slightly adapted the presentation to provide the kenning referents in square brackets and other explanatory details in angle brackets, in keeping with the standard elsewhere. I have also regularised the spelling of Old Norse names.

Egill creates a connection with the first stanza of the poem, describing poetry as Óðinn's sea, but by now it is no longer Óðinn's mind that is in focus but Egill's own. The comparison between the stanzas suggests that the mental abilities of god and poet have blended, the language suggesting both a literal transferring of cognition from Óðinn to Egill and a metaphorical reading in which the potency of the poetic cargo has been realised. The creative process is represented as an embodied one, with the mouth playing a crucial role in 'stirring' up the mind to generate the poem. Further, the poem, the result of Egill's mental activity, will continue to blend with other minds, creating further cognition; Eiríkr is encouraged: *hyggi at* ('consider, think about') it.

Other poetry of Egill's performs other functions. Consider, for example, his poem *Sonatorrek* ('Loss of Sons'), which is worth analysing in some detail here owing to its many references to the mind and affect. According to *Egils saga* (ch. 79), Egill composes the poem shortly after the drowning death of his son Bøðvarr. Overcome by sorrow, Egill locks himself in his room, refusing food or drink, but is persuaded by his daughter to stay alive long enough to compose a poem in Bøðvarr's memory (the plural in the title includes Egill's other son Gunnarr, who has also died shortly before). The poem thus has multiple types of mental and emotional work to do.

Egill opens the poem with reference to poetry and the act of its creation. This is a standard beginning: whatever the subject of the poem, the work in itself is always noteworthy (Faulkes 1993: 12). But instead of noting the ease with which words (or, figuratively, the poetic mead) pour out of the poet, Egill unusually draws attention to his difficulty of composition, thanks to an oppression of mind and body caused by grief:

Mjök erum tregt  
tungu at hrœra  
eðr loptvæi  
ljóðpundara;  
era nú vænlegt  
um Viðris þýfi,  
né hógdrægt  
úr hugar fylgsni.

Era auðþeystr,  
þvíat ekki veldr  
høfuglegr,  
úr hyggju stað  
fagnafundr  
Friggjar niðja,  
ár borinn  
úr Jötunheimum.



It is very hard for me to stir my tongue or the steel-yard of the song-weigher [TONGUE]; prospects of the theft of Óðinn [POETRY] are not hopeful now, nor is it easily drawn from the hiding place of thought [MIND, BREAST].

The joyful find of the kinsmen of Frigg [POETRY], brought long ago from the world of giants, is not easily driven from the home of thought [MIND, BREAST], and cruel grief causes this. (Turville-Petre 1976: 28–9, trans. slightly adapted)

Although to Egill poetry can still be seen as a ‘joyful find’ (ON *fagnafundur*), he fears that sorrow – depicted as a physical force acting on both mind and body, both of which he suggests are needed for the cognitive act of producing poetry – will be the stronger emotion. Moving through the poem, he continues to represent the labour involved in composing in physical terms:

Þó mun ek mitt  
ok móður hrør  
föður fall  
fyrst um telja;  
þat ber ek út  
úr orðhofi  
mærdar timbr  
máli laufgat.

But yet I will first tell of the death of my mother and the fall of my father; I bear these timbers of praise [POETRY], adorned with the foliage of speech, out from the temple of words [MIND, BREAST]. (Turville-Petre 1976: 31, trans. slightly adapted)

Although Egill has to drag out the ‘timber of praise’, the description becomes more optimistic. Through the creative act, the poem is something alive and growing: a way of keeping the memory of his family alive. Tree imagery is used again later in the poem with reference to one of Egill’s sons:

Þat man ek enn  
er upp um hóf  
í godheim  
Gauta spjalli,  
ættar ask,  
þann er óx af mér,  
ok kynvið  
kvánar minnar.

This I remember yet, when the friend of the Gautar [= Óðinn] raised up the ash-tree of my race [SON] which grew from me and the family branch of my wife into the home of the gods. (Turville-Petre 1976: 39, trans. slightly adapted)

It is a commonplace in skaldic poetry to describe people in terms of trees, as Egill does here twice (see Meissner 1921: 265–72). However, Egill’s juxtaposition of depictions of both poetry and his sons as tree-like, things which grow from him, may be a reflex of the literary-output-as-child topos (cf. Anderson 2015b: 141), something not often explicitly expressed in Old Norse literature.<sup>20</sup> Egill’s (male) children are no longer alive to continue the family line; his poetry must represent him instead. Indeed, by the end of the poem Egill has come to consider his poetic ability as fitting compensation for the loss of his sons. Though he first rails against Óðinn for allowing his sons to be taken, he concedes:

Þó hefr Míms vinr  
mér um fengnar  
bǫlva bœtr,  
ef hit betra telk.

Gáfumk íþrótt  
ulfs um bági  
vígi vanr  
vammi firrða,  
ok þat geð  
er ek gerða mér  
vísa fjandr  
af vélundum.

The friend of Mímr <mythical being> [= Óðinn] has given me recompense for my harms if I count better.

The enemy of the wolf [= Óðinn], accustomed to battle, gave to me that skill devoid of faults, and such a spirit that I made certain enemies out of tricksters. (Turville-Petre 1976: 40, trans. slightly adapted)

Poetry is a way to keep his family members figuratively alive, or at least present in the minds of Egill and anyone who hears his poem. It is also cathartic. The fears with which he opened the poem have been dispelled: both body and mind have shaken off the sluggishness that threatened to overwhelm his verbal powers and indeed his very life. Though Egill accepts he is near the end of his life, he has regained control of his mind and is no longer suicidal; in the final stanza he says ‘skal ek þó glaðr / með góðan vilja / ok óhryggr / Heljar bíða’ (‘happy, in good heart and fearless, I shall await the goddess Hel [i.e. death]’) (Turville-Petre 1976: 41). We might even say that Egill recognises poetry as ‘cognition-enhancing

<sup>20</sup> Clunies Ross (2005: 93) suggests that the gods’ actions in spitting into a bucket to generate a living being, Kvasir, is an example of pseudo-procreation, which ‘mimic[s] female processes of pregnancy and giving birth’.

self-stimulation’ (Clark 2006: 370): by forcing himself to compose, he has gained a new perspective on his grief and his situation in life.

This section of *Sonatorrek* seems to indicate a further purpose for poetry: the revelation of truth.<sup>21</sup> Egill describes poetry as a ‘skill devoid of faults’, implying its pure moral status. He associates this purity with the ability to ‘ma[k]e certain enemies out of tricksters’, that is, to expose tricksters for who they really are; to reveal what is truly in their minds even if they hide behind facades or speak lies. That is, Egill sees poetry as enabling him to ‘perform cognitive tasks that he otherwise would be unable to’ (Menary 2013: 28). Compare *Hávamál*’s warning against the consumption of (ordinary) alcohol, bringing us back to the aptness of the mead of poetry motif (st. 17):

Allt er senn, ef hann sylg um getr  
 uppi er þá geð guma. (Neckel and Kuhn 1983: 19)

It’s all up with him if he gets a swig of drink;  
 the man’s mind is exposed. (Larrington 2014: 15)

In this folk understanding both alcohol and poetry expose true minds.

## Conclusions

I have explored some of the ways in which Old Norse poetry, and the myth of the mead of poetry in particular, interface with hypotheses of distributed cognition. The way in which skaldic poetry works to defy straightforward comprehension, but also to aid composition, interpretation and memorisation, as I discussed above, is nothing new to the field of Old Norse studies, but I hope provides a useful case study here. Seeing skaldic poetry as enabling cognition created by words is I think a helpful way of understanding the creativity of poets as they engaged with the traditions of skaldic poetry and the kenning system in particular.

The myth of the mead of poetry and its applications in skaldic verse have been well studied before, including in terms of cognitive linguistics and cognitive metaphor theory, but have not to my knowledge been explored in terms of distributed cognition, or for what they can tell us about poets’ understandings of the mind and cognitive processes in the explicit and sustained way as I have done above. While the myth and the metaphorical complex surrounding it allow for the creation and utilisation of various fields of reference including mind-as-container, poetry-as-divine-inspiration and others which have not been considered in detail here (such

<sup>21</sup> The idea of art as truth is a cross-culturally pervasive one, but it is in many ways a startling claim for something as deliberately obscure as skaldic poetry. Thirteenth-century Icelandic law took a dimmer view: ‘Sua scal vera orð huert sem mælt er. scal ecke at scáldscapar male raða’ (Finsen 1852: II, 181; ‘Every word is to be as it is spoken. No word is to be taken according to the language of poetry’, Dennis et al. 2000: 195).

as oral-poetry-as-roaring-sea), it also invites the interpretation that poetry is ‘mind altering’. I have discussed some examples in which I think poets took up this invitation and found that they do so in ways that chime with certain recent hypotheses pertaining to the notion of distributed cognition. These understandings include: that ‘processing routines cross from the world into the brain’ (Menary 2013: 29); that the mind can be extended into the world and over time in poetry; that the mind’s cognitive processes (in this case, the composition of poetry and the ways of thinking about the world it entails) are constituted in the minds of others and allow further cognitive work by engaging with them (cf. Gallagher 2013); that cognition is embodied and the body plays a non-trivial role; that sociocultural practices are two-way and extend the mind’s cognitive abilities. Not all the modern theories I have drawn on in this paper are fully compatible with each other. My aim is not to elide differences between them, but neither is it to trace the particulars of any one specific theory in Old Norse thought. As there are different possibilities for thinking about the mind and cognition now, there were then. And perhaps there are more similarities in past and present thinking about thinking than we might have expected.

## Enculturated, Embodied, Social: Medieval Drama and Cognitive Integration

*Clare Wright*

In his 2013 article ‘The socially extended mind’, Shaun Gallagher argues that cognitive processes can be extended by and ‘constituted in various social practices that occur within our social and cultural institutions’ (4). These ‘mental institutions’, establishments like law courts and museums, are identified, he suggests, by their fulfilment of two criteria (Gallagher 2013: 6; Gallagher and Crisafi 2009):

1. that they include cognitive practices that are produced in specific times and places;
2. that they are activated in ways that extend cognitive processes when individuals engage with, interact with, or are ‘enactively coupled’ to them. (Gallagher 2013: 6)

They should, therefore, ‘offer structures that support and extend our cognitive abilities’ so that, not only are they ‘institutions with which we accomplish certain cognitive processes’, but without them ‘such cognitive processes would no longer exist’ (Gallagher 2013: 4–6). Gallagher’s article marks an important step in the theory of extended mind because, ‘where social cognition has been considered in the [extended mind] debate, it has typically been in terms of the possibility of using another person as some sort of memory resource’ (Merritt et al. 2013: 1). This chapter, however, questions the wider applicability of Gallagher’s theory, inviting further developments by offering a very different example of socially distributed cognition, one which shares features with mental institutions, but diverges in crucial respects.

Like Gallagher’s museums and law courts, medieval performance was a fundamentally collaborative act. As Greg Walker reminds us,

[t]he spaces in which [drama] was performed and the audiences who witnessed it in those spaces had crucial roles to play in the creation of a play’s ‘meaning’ alongside the actors who performed it and the writers whose words they spoke. (2008: 75–6)

In other words, it was only through the ‘negotiative alchemy of performance’ (Walker 2008: 76), through the symbiotic interaction between actors (their words and actions), audiences and performance sites, that meaning was generated. Each performance was tailored exclusively to a specific location and community and was therefore ultimately unrepeatable, its outcomes dependent on who was present, their dispositions and their relationships with a given site at that particular moment. Plays, however, were not always limited to performance in a specific location. While they included cognitive practices that were produced in specific times and places, to use Gallagher’s terms, and were activated in ways that extended their participants’ cognitive processes, medieval plays were often spatially flexible in ways that Gallagher’s museums and law courts generally are not.<sup>1</sup> So, while their cognitive aims remained broadly the same, the specific cognitive outcomes achieved would vary, depending on the unique network of relationships mentioned above.

Moreover, as records suggest, medieval plays were highly adept at supporting and enhancing the cognitive processes of their participants and were clearly recognised as doing so. The 1388–9 guild return from the city of York, for instance, records the foundation of a religious fraternity, whose primary responsibility was to manage the city’s *Pater Noster* play in ‘future times for the health and reformation of the souls’ of citizens, those producing and performing in the play and those hearing it (Johnston and Rogerson 1979: 863). This was because the play had had ‘such and so great an appeal’ at its first performance that there was a general desire from within the community for it to be established as a permanent feature of the city’s cultural life. Drama in the medieval period, then, was evidently valued for more than its ‘recreational diversion’:

[i]t mattered not only to the commonality and those who made their livings by entertaining them, but also to the sophisticated, the rich and the powerful . . . when even shrewd politicians such as Thomas Cromwell can be found sponsoring actors and encouraging playwrights, it strongly suggests that there was more to patronizing drama than simply self-indulgence. (Walker 1991: 7–8)

‘Mental institution’, therefore, seems too rigid a concept to apply to this highly fluid, malleable cognitive medium, whose outcomes were contingent upon an array of variables, which shifted even during performance. This chapter will instead argue that, in the case of medieval drama at least, it was the particular combination of place, time, culture and the embodied engagement of participants

<sup>1</sup> The notion of an institution is somewhat under-specified by Gallagher. In principle, therefore, it might ultimately allow for the kind of site-specific fluidity and malleability that I am arguing medieval drama exhibits (see, for example, Gallagher’s description of the family as an institution (2013: 7–8). Nevertheless, Gallagher’s two main examples of mental institutions, the legal system and museums, do tend, in the modern era at least, to be associated with specific locations and physical structures, and so look to be relatively fixed and static.

with these and with each other that allowed plays to cultivate a socially distributed cognition. The cognitive work of medieval drama, I want to suggest, is therefore best understood through the concept of cognitive integration, and in particular niche construction.

Briefly, and very simply, cognitive integration proposes that cognition occurs through the ‘co-ordination of bodily processes . . . with salient features of the environment’ (Menary 2007: 3). This coordination, or ‘integration’, between internal and external cognitive vehicles via the body allows the individual either to perform cognitive functions that he or she would be unable to do otherwise, or to do so ‘in a way that is distinctively different [from] and is an improvement upon’ the individual’s ability to perform those functions via neural or bodily processes alone (Menary 2007: 3). Neural, bodily and environmental vehicles, therefore, combine to form a cognitive system with distinct yet interacting parts (Menary 2013: 28), each of which ‘make complementary contributions to cognitive processes’ (Menary 2009: 42).<sup>2</sup> It is, furthermore, the interaction between the system’s components that constitutes cognitive processing (Menary 2010a: 227; Menary 2007: 138). This model of cognition, therefore, does not assume a pre-existing cognitive agent who extends his or her cognitive capacities by coupling with features in the external environment (Menary 2007: 75). Rather, cognitive integration understands distributed cognition not just as a process which externalises or causally supports what already exists ‘in the head’, but as the basis of cognition itself. An individual’s interaction with and manipulation of his or her environment is consequently both a ‘prerequisite for higher cognition’ (Menary 2010a: 232) and the means through which ‘the organism becomes a cognitive agent’ (Menary 2007: 75; Menary 2012: 148).

A key feature of cognitive integration is its development of the concept of niche construction. As Michael Wheeler and Andy Clark observe, ‘all animals act on their environment’ by building specially constructed spaces, or niches, that ‘transform processes of individual and cultural reasoning and learning’ (2008: 3564). Cognitive niches, which can be both educational ‘practices’ and human-built structures (artefacts), therefore have the capacity to dramatically alter the ‘fitness landscape for individual lifetime learning’ (Wheeler and Clark 2008: 3564; Clark 2008: 62). Humans ‘are cultural niche constructors *par excellence*’ (Menary 2014: 472), constructing cognitive webs to develop ‘new, culturally endowed, cognitive capacities’ (Menary 2013: 27). But we do not do so only through the alteration of the physical environment; we also

epistemically, socially and culturally engineer the environment. Humans are born into a highly structured cognitive niche that contains not only physical artefacts, but also representational systems that embody knowledge . . . skills and methods for training and teaching new skills. (Menary 2014: 472)

<sup>2</sup> Clark in *Supersizing the Mind* emphasises that the Parity Principle also does not preclude differences between internal and external cognitive processes. See Clark 2008: 77–8 and Clark 1997: 220.

This means that human culture and cultural artefacts, as well as physical tools and spaces, can be understood as part of our distributed cognitive processes. On this account, then, ‘mental institutions’ are only one type of cognitive niche, tailored to achieve a particular cognitive task, in a particular cultural moment (Menary 2013: 28); art (whether pictorial, dramatic, musical or literary) can be understood as another (Menary 2014: 471).

To explore the ways in which medieval drama might exemplify both social cognition and niche construction, I want to focus on one form of early English performance: biblical drama, and in particular one short pageant from the famous York Corpus Christi Play. *The Play of the Crucifixion* is probably one of the best-known and most-studied plays in the corpus of Middle English drama. This makes it well suited to the broad scope of this interdisciplinary collection, but also means that its key spatial, cultural, social and theatrical contexts and features are well established (at least in comparison with most other plays from the period), providing a solid foundation on which to make an argument for it as an example of socially integrated niche construction. Situating the pageant within key cultural practices, I will first discuss the ways in which it integrates the Crucifixion narrative within the fifteenth-century here-and-now, before moving on to consider the nature of social interaction in the pageant and its role in achieving its cognitive aims. The pageant, I argue, capitalises on the unique nature of the dramatic medium to enable a more nuanced, rich, textured and highly personal devotional imagining. It is, then, an example of niche construction focused not on rational problem solving, but on stimulating emotion and feeling as a way of enhancing the cognitive work of late-medieval piety. The chapter will conclude by exploring *The Play of the Crucifixion*’s impact on other cognitive niches and how it might have transformed cognitive processing in other cognate practices, forming feedback cycles that extended beyond the performance itself.

## Cognitive-Cultural Practices

On the cognitive integration model, cognition is constituted by our interactions with the environment, but it also recognises the cultural specificity of those engagements. Cognitive capacities, Menary suggests, are extended by sociocultural practices, ‘patterns of activity spread out across a population’, which regulate and structure our engagement with and manipulation of cognitive niches (2013: 27–9). Indeed, the main extension of our cognitive abilities is through processes that are cultural in nature (Menary 2012: 151–2), passed on from one generation to the next (Wheeler and Clark 2008: 3564–5). Our ability to engage with and manipulate external vehicles is, consequently, normative and ‘largely dependent on our learning and training histories’ (Menary 2010a: 233), meaning that our brains are ‘enculturated’ as well as embodied and environmentally embedded.<sup>3</sup> The individual ‘cognizer’ is

<sup>3</sup> Wheeler and Clark make a similar observation in their exploration of niche construction (2008: 3571–2).



therefore intrinsically integrated with a unique set of social and cultural environments, which themselves contain cultural norms that determine the form of external cognitive vehicles and how we engage with them. Therefore, to understand *The Play of the Crucifixion* as an example of cognitive niche construction, we first need to situate it within the cognitive-cultural practices, the ‘habits of thought’ (Brantley 2007: 1) and behaviour, that gave it shape, life and substance.

The Corpus Christi Play was part of the City of York’s cultural life for about two hundred years. The earliest surviving record for the play is dated 1376 and it continued to be performed until 1569, despite the abolishment in 1548 of the feast with which it was associated and subsequent attempts by later Protestant governments to ban its performance (Beadle 2008: 99). The Corpus Christi feast, observed in England from 1318, celebrated the doctrine of Transubstantiation, a belief solidified at the Fourth Lateran Council of 1215, which stipulated that Christ’s body and blood were truly, not merely symbolically, present in the Eucharist (Duffy 1992: 43–4). During the fourteenth and fifteenth centuries, Corpus Christi became one of the most popular feasts among England’s lay population.<sup>4</sup> The York Play, however, while embedded within the traditions of formal religious worship, functioned independently from ecclesiastical authority, being organised by the city’s civic governors, and produced and performed by its craft and merchant guilds (Beadle 2008: 100).

As part of this corporate, civic endeavour, each guild was allocated one pageant, a short ‘playlet’ depicting a key episode in salvation history, from Creation through to Doomsday (Beadle 2008: 102). At the heart of the play was a series of pageants depicting Christ’s Passion, concluding with the Crucifixion. As Robert Swanson observes, ‘Christ’s death on the Cross marks the culmination of the work of redemption, God’s supreme self-sacrifice to remove the stain of sin, free humanity from the Devil, and offer hope of salvation’ (1998: 1). These episodes were then vital to the entire narrative of Christian salvation and were conceived as a spiritual process (Swanson 1998: 3), marked in the York Play by the division of the Passion into nine discrete pageants, performed sequentially. The Passion episodes were equally central to late-medieval devotion. ‘Affective piety’ in particular encouraged a focus on Christ’s humanity, on his birth, his human relationships and especially the physical torments of his death. In this sense, the Passion was very closely associated with the feast of Corpus Christi, ‘the apex of the worship of Christ as God in man, and of the late medieval obsession with the physical nature of Christ’s redemptive sacrifice’ (Crouch 2000: 99). Initially a monastic practice, ‘affective’ devotion soon became a popular form of lay piety, producing a rich and diverse body of literature, art and performance that guided lay practitioners and augmented their devotional experience.<sup>5</sup> By the fourteenth and fifteenth centuries, the Passion had become the main focus of many people’s meditative and devotional attention, foregrounded as it was by ‘a myriad of devotional exercises . . . aimed to

<sup>4</sup> For studies of the Corpus Christi feast see Rubin 1991 and Beckwith 1993 and 2001.

<sup>5</sup> For a summary of ‘affective piety’ see Atkinson 1983: 129–56.

direct the thought of meditators' and to elaborate on the sparse scriptural account in order to build a detailed vision of Christ's physical torments (MacDonald et al. 1998: ix).

Devotional manuals, like Nicholas Love's *Mirror of the Blessed Life of Jesus Christ*, for example, took devotees through a weekly cycle of meditations, encouraging them to draw on their own bodily and emotional experiences to cultivate powerful feelings of compassion and pity, and through that a more immediate, very personal relationship with the Saviour. In the *Mirror*, Love instructs his reader to visualise and mentally animate key events in Christ's life, providing descriptive detail, direct speech and devotional prompts to help the meditator develop a rich mental vision to contemplate. When it comes to the Crucifixion, Love instructs his reader to 'make þe þere present in þi mynde, beholding all þat shal be done aʒeynus þi Lorde Jesu' ('make yourself present, in your mind, beholding all that shall be done against your Lord Jesus') (2004: § 43, 7–8), the slippery tense of the sentence marking the event's fluid temporality, as something that has already happened, is happening in the present and will happen in the future. So, in contemplating this most central moment in Christian history, devotees should not simply imagine the scene, voyeuristically viewing it from an external vantage point, but should visualise stepping into it, becoming a part of it; they should imagine being present, on Mount Calvary, occupying a space in the crowd and witnessing first-hand Christ's suffering.<sup>6</sup> Some devotees went even further to achieve this sense of devotional immediacy. Many pilgrims to Jerusalem, for example, tried 'to imitate Christ as absolutely as possible, even to the extent of following his ways to the places of the Passion' (MacDonald et al. 1998: ix), while others situated themselves 'imaginatively in the roles of the people who were actually there at the Crucifixion' (Rogerson 2009: 16–17).

These, then, are the cognitive-cultural practices central to *The Play of the Crucifixion*, those patterns of activity and habits of thought that shaped both the form and the content of the pageant as a cognitive niche.<sup>7</sup> These practices emphasised Christ's humanity, his body and his suffering, and encouraged practitioners to develop a very personal connection with the events of his life, in particular his Passion, even to the extent of imagining themselves present at the Crucifixion. As such, the cultural practice of affective piety, in all its forms, and the ideas circulating around the concept of Corpus Christi would also have determined how participants engaged and integrated with the Crucifixion pageant, their individual responses dependent on their particular devotional aims, preferences, previous experiences and personal 'learning and training histories'.<sup>8</sup>

<sup>6</sup> For a cognitive approach to late-medieval devotional practice see Karnes 2011.

<sup>7</sup> The strong similarities between Love's account of the Crucifixion and York's dramatic rendering support this claim. Cf. Love 2004: § 43.

<sup>8</sup> Love also acknowledges his readers' personal preferences, providing an alternative account of events for those unaffected by his first description; see Love 2004: § 43.

## Spatial and Temporal Integration

*The Play of the Crucifixion* built on the imaginative principles that underpinned the diverse media of affective piety. But rather than practitioners having to imagine themselves transported across time and space, the York pageant brought the event into the immediate here-and-now, creating a live simulation in which participants, both those playing and those watching, could experience real, embodied responses to the re-enacted Crucifixion. Wheeler and Clark suggest that a significant amount of human niche construction ‘involves the active exploitation of space, often by way of culturally inherited artefacts and culturally transmitted strategies’ (2008: 3564). This is certainly true of the York Play, though, as I will go on to explore, the manipulation and exploitation of space was only part of its enablement of social cognition. *The Play of the Crucifixion*, Beadle suggests, was probably composed initially around 1422 (2008: 116), while the earliest evidence we have for the play being organised and performed as we find it in the surviving manuscript is 1415, roughly seven years before Beadle’s estimated composition of *The Play of the Crucifixion* and sixty years before the surviving manuscript was compiled (1463–77) (Beadle 2009: xii–xix). This means that the York Play, and probably a pageant re-enacting the Crucifixion, had been performed around the time of Corpus Christi for about 100 years before this version of it was written down, and pageant wagons and a designated route through the city used from at least 1415. *The Play of the Crucifixion* as we have it, then, was working with both ‘culturally inherited artefacts’ and ‘culturally transmitted strategies’ relating to both performance and piety.

Many guilds chose to perform their pageants on specially made pageant wagons, which were pulled by members of the guilds along a specific route through the streets of York. Far from being basic, wooden platforms, these wagons (the play’s ‘culturally inherited artefacts’) could be highly elaborate and costly, as the famous Mercers’ Guild indenture of 1433 exemplifies. This inventory details the wagon’s structures and elaborate decoration, including mechanisms to animate nine painted angels and elevate Christ when he ascended to heaven (Johnston and Rogerson 1979: 55–6). Starting at Micklegate, then heading over Ouse Bridge, through Spurriergate, Coney Street and Stonegate, the wagons would process to Minster Gate and finally Pavement, one of York’s main marketplaces, stopping along the route at between twelve and sixteen prearranged ‘stations’ (Johnston and Rogerson 1979: 10–12). Beginning with *The Creation*, the pageants performed in sequential order, each pageant stopping and performing at each station, meaning multiple performances for each pageant, and potentially between twelve and sixteen performances happening simultaneously along the route.<sup>9</sup> As Walker points out, the shifting variables of drama and the ‘negotiative alchemy’ of performance meant that medieval plays were ‘reinvented’ each time they were performed (2008:

<sup>9</sup> For more on York Play staging practices see McKinnell 2000, Mills 2005 and Twycross 1992 and 2003.

# YORK

## PAGEANT ROUTE 1486

© Meg Twycross 2012

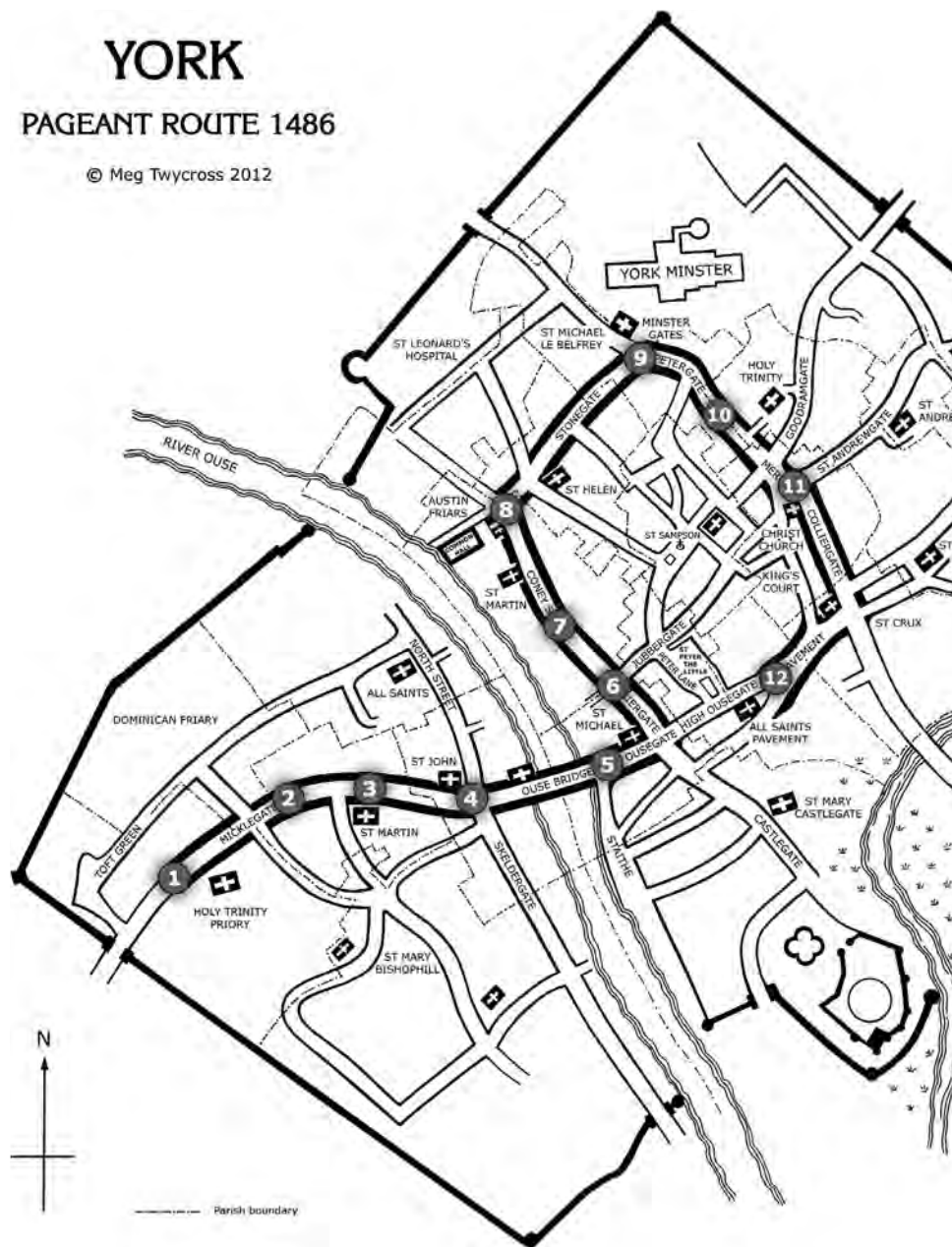


Figure 7.1 York pageant route. Image provided courtesy of Meg Twycross.

76), as one generation of participants modified the ‘culturally transmitted strategies’ of the last in the moment to suit their particular culture and context.

In the case of the York Play, such reinvention (or niche modification) would probably have occurred not only each year it was held, but each time a guild

performed their episode along the pageant route, as the pageant responded to the specifics of each site and those who occupied it at that moment. Discussing modern site-specific performances, Mike Pearson describes the addition of such staging to a place as an interruption, an ‘intersection of environment and human activity . . . to draw attention to, frame or harness natural elements’ (2010: 33). Even though *The Play of the Crucifixion* occurred in the man-made rather than natural sites of York, and ones already transformed through the extra-daily activities of festival and the other pageants that preceded it, it can still be seen as an interruption to the place of performance, bracketing it off from its previous functions and reframing it for the performance that follows. Having just watched the previous pageant, *The Road to Calvary*, and seen that wagon packed up and processed out of the space by the Shearmen’s Guild, audiences waiting at any of the stations along the route would have seen and perhaps have heard the *Crucifixion* wagon approach. They would have seen the guildsmen stop and arrange their wagon, preparing it and themselves for performance. In the terms of cognitive integration, the spectators would already have been coupled to the environment; the exit of one wagon and the entrance and set-up of the next would then alter that relationship, recasting it and the audience to initiate a new niche focused on a very particular cognitive task, the next stage in the devotional process: engagement with and contemplation of the Crucifixion.

Furthermore, as Pearson’s work suggests, performance in everyday sites, like the stations in York, would not involve the occlusion of those sites, but would actively work with and rely on the tangible relationships between place and the people who inhabited it (2010: 92–139). Each station along the pageant route would have held particular associations and memories for the pageant’s participants, both performers and spectators. Re-enacting the Crucifixion, for example, would have had a very different resonance performed at Micklegate Bar, the traditional ceremonial entry for royal processions into the city,<sup>10</sup> compared with Pavement, the city’s commercial centre and also the site of criminal executions. Furthermore, those resonances and echoes would have been different for each individual, dependent on their own experience and habitation of that site.<sup>11</sup> Consequently, each performance of the *Crucifixion* on Corpus Christi Day would have varied from the last, its effects slightly different for the audiences gathered at different sites along the route and for each individual participant.

What is more, contrary to Clark’s examples of niche construction (2008: 65), *The Play of the Crucifixion* did not reduce the spatial complexity of these sites but added to it, and not only by introducing a new physical structure and activity, but by affixing fresh spiritual significance to the mundane site of daily activity, a point to which I will return. As I have argued elsewhere, late-medieval biblical drama did not operate on the assumption of an illusion-reality binary, in which charac-

<sup>10</sup> For discussion of medieval performance at this site see Haddad 2014.

<sup>11</sup> For recent discussions of site-specific performance and medieval drama see Badir 2014, Haddad 2014, Teo 2014 and Wright 2014.

ters occupy a play world separate from the real world; instead, participants, those performing and those perceiving, inhabited ontologically the same time and place (Wright 2017: 192–200). As in liturgical ceremony and affective devotion, the York *Play of the Crucifixion* brought the biblical past into the medieval present through the re-enactment of this key historical event, as what was recreated and remembered was revived, and the past given immediacy in the present moment. In doing so, the “then” of history [became] the “now” of the individual, as contemporary man was given a ‘rôle in a constantly on-going process . . . of our continuing salvation and damnation’ (Mills 2000: 4). York itself would not, therefore, have disappeared from the audience’s awareness during performance, nor would the immediate present.<sup>12</sup> Both would instead have been used as part of the pageant’s devotional aesthetic, the cognitive apparatus that facilitated an affective engagement with the events portrayed.

We can gain a sense of how this spatial and temporal integration of the Crucifixion narrative might have been achieved from modern productions. Plate 1 shows a still from the 2014 York Mystery Plays production of *The Crucifixion and the Death of Christ*. This is, of course, a modern interpretation of the medieval text and a twenty-first-century solution to the practical problems of medieval staging practices; nevertheless, its performance in the streets of York provides some insight into the ways in which performance can achieve such geographic and temporal ‘assimilation’ (Stevenson 2010: 98). In this image, the wagon clearly forms a *locus*, a fixed representational space (Weimann 1978: 74) that, in this instance, marks the site of Christ’s Crucifixion. However, the *locus* does not appear removed or detached from the town surrounding it. We still see the physical features of 2014 York, the wrought-iron benches, the concrete paving slabs, the sign-post, a bicycle, a tree, some colourful bunting, shops and restaurants and rubbish bags set out ready for bin collection, while other stray bits of plastic and wrappers litter the ground. York’s people too are present, though not all appear to be audience members. Some are probably having lunch in Pizza Express in the background, while another seems to be casually walking past at this spiritually crucial moment, as the audience themselves look on with varying degrees of attention and interest. This modern site, then, is in no way associated with either devotional or spiritual activities, but is a place where individuals can indulge in bodily and worldly doings, where they can eat and drink, shop, socialise and entertain themselves, as evidence of that material

<sup>12</sup> Jill Stevenson, positing a theory of cognitive blending, similarly observes that York spectators did not ‘necessarily lose their frame of reference in the real world entirely, but instead oscillate[d] between that frame and the performance event’s frame’ (2010: 201, 95). My argument here and elsewhere (2017), however, does not require this kind of oscillation between conceptual ‘worlds’ because character and spectator inhabit the same time and space. That is not to say that a spectator’s mind did not move between different modes of awareness or degrees of attention, for example, only that that mental movement was not based on the perception that what was presented was distinct from the here-and-now. Compare Stevenson 2010: 95–9. See also Mills 2000 and Njus 2011.

existence lies scattered in their midst.<sup>13</sup> And yet, despite these profane associations, the Crucifixion wagon does not appear to dissociate itself from that contemporary environment. Instead, it appears integrated with it, to inhabit it to the same extent, though not in the same way, as the other visible objects. The wagon and shops, the players and audience occupy the same spatiotemporal location for the moment of performance and there is no sense of an ontologically separate ‘play world’ as there is in other modern dramatic modes (Wright 2017: 192–200). The introduction of the wagon has, then, reframed the site, encouraging the perception of time and space as fluid. While a spectator would obviously know that the action taking place is not ‘real’ in the sense of the actor actually being crucified (thankfully), there is still a sense that the event represented is part of the here-and-now of York in 2014. The site is both itself and Calvary as the two disparate times, places and peoples of the Bible and modern York overlap, merge, unite into one liminal here-and-now.<sup>14</sup>

In late-medieval York, the rendering of the characters would also have contributed to this impression. The Soldiers, for example, would have been costumed in contemporary clothing, as was conventional in the art and iconography of the period. The figures in Jan van Eyck’s diptych of *The Crucifixion and the Last Judgement* (Plate 2), for instance, all wear modern garments, a feature that projects the scene beyond the borders of the image to connect directly with the viewer.<sup>15</sup> The Soldiers’ clothing might similarly locate them in the present moment and, though not necessarily echoing precisely the spectators’ own attire and stations, might well mark them as members of the wider, modern community, not alien Roman soldiers, but modern knights or men-at-arms, bringing their actions and spiritual complicity that little bit closer to home.

In addition, the Soldiers spoke to and interacted with one another as contemporary, local, Yorkshire craftsmen, which likewise contributed to the blending of time and space, but also would have made them appear more familiar and thus more proximate to an audience. While all of the York pageants are written in a Northern dialect of Middle English, the Soldiers’ exchanges are characteristically conversational and colloquial in register. They are, for instance, anxious that their ‘wirkyng be noght wronge’ (‘working be not wrong’) (26), that it is done properly and on time (15) in order to earn them ‘worshippe’ (14), or honour and respect.<sup>16</sup> As they work together to achieve these goals, we get a sense of professional pride, as well as professional rivalry and competition (‘Late see who beres hym best’ (‘Let’s

<sup>13</sup> This is, of course, my personal response to this site as an academic, a medievalist and a visitor to York in the summer of 2014. Other spectators may well have had different associations with the site.

<sup>14</sup> For a similar argument see Stevenson 2010: 95–9.

<sup>15</sup> Note also in this image the modern European city depicted in the background, again suggesting a spatial and geographic merger.

<sup>16</sup> All quotations from the *Crucifixio Christi* (2009), in R. Beadle (ed.), *The York Plays*, Early English Text Society s.s. 23, Oxford: Oxford University Press. All translations mine. I have also consulted the *Middle English Dictionary* and modern editions edited by Beadle and King (2009) and Davidson (2011) for clarification on certain words and phrases.

see who bears himself the best') (84)), their irritation at one another's laziness and incompetency expressed in terms still familiar to the modern ear. When they come to the point where they must nail Jesus's hands to the Cross, for example, they find that one hand 'failis [fai]s a foote and more' (107) short of the hole. The Third Soldier suggests that it is because Christ's 'senous are so gone ynne' ('sinews are so contracted') that his arms have shortened, but the Fourth Soldier thinks instead that the hole for the nail has been bored wrongly (108–9). The Third Soldier echoes this suspicion: '[i]n faith, it was ouere-skantely scored' (111), he says – in other words, it was barely or deficiently marked.<sup>17</sup> The First Soldier, who assumes the role of the gang's foreman, ignores their moaning, suggesting a practical fix for the problem and receiving further complaints in return:

- I MILES:           Why carpe 3e so? Faste on a corde  
                          And tugge him to, by toppe and taile.
- III MILES:         3a, þou comaundis lightly as a lorde;  
                          Come helpe to haale with ille haile.
- I MILES:           Nowe certis þat schall I doo –  
                          Full sne[ll]y as a snayle. (113–18)
- SOLDIER I:        Why chatter you so? Fasten on a rope  
                          And tug him into position, top and bottom.
- SOLDIER III:     Gah! You command as easily as a lord;  
                          Come and help to haul him, damn you.
- SOLDIER I:        Now, certainly, that shall I do –  
                          As quickly as a snail.

Here, then, realistically portrayed, are the working relations between the four men, whose colloquialisms ('Why carpe 3e so'; 'tugge him to, by toppe and taile'; 'Full sne[ll]y as a snayle') would perhaps have helped the audience of 1460s York to identify them as ordinary, modern, local men. The humour of these moments might have encouraged, for some at least, a further level of identification, as an act shared between players and audience. These are not, then, monochromatic stage villains or the inherently wicked servants of the Devil depicted in the period's art, but contemporary workmen doing a job, bickering and joking as they do so.<sup>18</sup> The rendering of the Soldiers as contemporary Yorkshire workmen, therefore, worked to close the temporal, spatial and conceptual distance between biblical and contemporary moments, but it also highlights the importance of social interaction to the ways in which meanings were produced in this pageant.

<sup>17</sup> Pamela King notes that this sequence links with the traditional legend of the animate Cross, which changed its size and shape, either to conspire with Christ as his 'faithful retainer' (as in the Old English poem *The Dream of the Rood*) or, as here, to add to his torments as he is stretched to fit the pre-bored holes. See King 2006: 147–8.

<sup>18</sup> The guildsmen players were perhaps also known to some in the audience from their trade interactions and connections within the city.



## Social Integration

The audience's embodied engagement with the physical artefacts and spatiotemporal manipulations of the pageant was only one aspect of *The Play of the Crucifixion's* effectiveness. The driving force behind the lasting impact of the pageant, I want to argue, was social, the embodied presence of the actors, their occupation of the site, their vocal and bodily performances and handling of the wagon, affecting the ways in which the audience integrated with the space and the action. The niche might have been initiated by the introduction of the wagon into the site, but it would only have been fully activated when the performance proper began, when the players started to move and speak in their roles, to interact with each other and with the audience. It was not, however, the pivotal figure of Christ who began this process, but the Soldiers, and it is they who verbally and physically dominated this pageant. Christ only speaks twice in the course of the play, accounting for only twenty-two out of 300 lines of verse. This is characteristic of the York Play's Passion sequence, in which Christ speaks just thirty-five of the 1,852 lines available (Johnston 2000: 185), withdrawing further into himself as the Passion sequence progresses and retreating from the falsity of a language misused by his judges and accusers (Johnston 2000: 191). Similarly, where his tormentors are physically active, busily working to ensure the job is done correctly, Christ is predominately still; the Soldiers' lexis indicates this contrast, their words imitating the physical intensity and difficulty of their task. For instance, they must 'tugge' ('tug'), 'rugge' ('violently tug') and 'lugge' ('pull') (114, 132, 137) Christ into position and 'haale' ('haul') (116) on ropes attached to his limbs to make him fit the Cross, the words' phonetic units emulating the specific actions they describe, functioning as kinetic onomatopoeia. In contrast to their kinetic activity, Christ is static, as impassive and reserved as in previous episodes. If gestures and actions are, as Augustine suggests, visible words, then stillness is a similar retreat from language, a closing down of communication via conventional socio-corporeal signs.<sup>19</sup>

However, rather than undermining devotional efficacy, the Soldiers' verbal and kinetic dominance of the pageant was potentially both dramaturgically and devotionally helpful. If, as medieval theological conventions dictated, the player-Christ remained still and silent as the Soldiers busied themselves with their work,<sup>20</sup> then the pageant might, as Beadle and others have noted, encourage a spectator's 'absorption' in the Soldiers' work and their verbally and kinetically vibrant activity (Beadle 2008: 117; McGavin and Walker 2016: 9).<sup>21</sup> As Jill Stevenson writes, in medieval drama it is 'the transgressive characters – here the soldiers – who

<sup>19</sup> For discussion of Augustine's ideas about gesture and language see Mazzeo 1962: 179.

<sup>20</sup> See Johnston 1998.

<sup>21</sup> Again, physical proximity is important here. Someone standing very close to the wagon would probably be more aware of the actor's physical, lively body than a spectator positioned further back, seeing him breathing, blinking and the details of the stage business as the Soldiers go about their work.

typically display the more engaging and attractive body rhythms' (2010: 138); '[a]lthough not all spectators may have vicariously fallen into "rhythm" with the soldiers' bodies', she writes, 'the spectacle of enjoyment and excess had the potential to overwhelm' the visual and auditory field (2010: 139), drawing attention to them over attention to and contemplation of the figure of Christ. On the other hand, Jesus's impassive body, especially for those trained in affective contemplation, might instead have emphasised his spiritual strength and obedience to the will of the Father, the incessant chatter and continual movement of the Soldiers foregrounding, rather than obscuring, his presence. Whatever the individual response, it is likely to have been rooted in the ways in which spectators engaged with the pageant's verbal and kinetic activities; in other words, in its social affordances. The pageant offered, then, via these social affordances, the 'possibility of a far more immediate and substantial empathetic and affective engagement' with the embodied, corporeal Christ (McGavin and Walker 2016: 15), 'drawing them into a *felt* as well as reasoned response to what they were experiencing' (Walker 2008: 78).

The response to and effects of the Soldiers' performances were perhaps further enhanced by the positioning of Jesus for most of the pageant. Following the end of his first speech at line 60, and the Soldiers' mockery of his prayer, Christ voluntarily lays himself down on the Cross, much to the surprise of his executioners (75–6). While the Soldiers then occupy themselves with the task at hand, Jesus is again both still and silent on the Cross, which was probably laid horizontally on top of the pageant wagon, until line 223 when it is finally raised. For many of those standing in the street around the edges of the wagon, 'having the actor playing Christ lie down on the Cross on top of the pageant wagon [meant] that he effectively [disappeared] from view' (McGavin and Walker 2016: 9), diminishing further his spatial presence and the human body that would (ideally) prompt compassion, pity and sorrow as it was tortured.<sup>22</sup>

Such a perspective was perhaps mitigated (or for some enhanced) by the Soldiers' handling and manipulation of this sacred body, and the way in which they referred to it and the play's other devotional objects. Their vocabulary is indicative of this because it focuses not on Christ and the actions of which he is accused, or on the anachronistically sacramental nature of what they do, but on their work and labour. For instance, attention is repeatedly drawn to their 'gere' ('gear') (29): hammers and nails (30, 102, 120, 239); a wooden cross (39, 43, 74, 193, 229, 247); ropes (113, 131, 133); a mortise (161, 220, 230); and wedges (235, 237, 242). References to these objects are generally prefaced by deictic 'pis' ('this'), suggesting also, perhaps, a presentational gesture that would likewise have drawn attention to these items, collectively known as the Instruments of the Passion, the iconographic,

<sup>22</sup> McGavin and Walker also discuss the differing experiences made possible through proximity with and distance from the wagon (2016: 12–15). For their exploration of the potential experiences of those looking on from elevated windows see McGavin and Walker 2016: 15–16.

contemplative image of the *arma Christi*.<sup>23</sup> As Beadle notes, therefore, the '[s]trong deictic element in the language of the Soldiers' emphasises both 'the nascent symbolic nature of the objects they are handling' and 'the ignorant, physical, painful work of man [as] the cause of sin and death' (2008: 118). It is then significant that the Soldiers refer to Christ's body in a similar manner. Rather than employing the masculine determiner when referring to his limbs, they instead often use *this* ('þis hande', 98), *the* ('þe senous', 108) or *it* ('it failis a foote and more', 107). They even conceptually combine Jesus and the crucifix into one 'vnthrifty thing' ('unthrifty thing') (90), reducing him to an object, a prop, in their eyes a passive, inanimate 'thing'.

In objectifying Christ's body and linguistically aligning it with the instruments of his Passion, the pageant highlights both his body and the objects that torment him as devotional icons. However, it was the ways in which the Soldiers interacted with and used these objects that gave them this iconic significance in performance. For example, the body of the guildsman actor by itself would not implicitly signify 'Christ' and neither would it produce the spiritual and dramaturgical efficacy the pageant sought on its own. Only the player's interactions with the Soldiers and the way in which they treated his body, and the spectators' socially informed and embodied responses to those interactions, enabled the pageant's devotional potential. They might assume that the figure before them represented Christ, but the emotional responses so central to affective devotion were dependent on his interactions with the other figures present. Similarly, although the props used were objects of the *arma Christi*, they were also simply everyday, mundane objects (a hammer, nails, rope, mortise); again, what gave them their spiritual and devotional significance was how they were used by one person to interact with, to inflict pain on, another live, fleshly human being. Bruce McConachie has suggested that the manipulation of objects on stage 'links the prop to an actor/character's intentionality' (2008: 83), imbuing it with the same interactive significance with which it is used. In *The Play of the Crucifixion*, then, the *arma Christi* probably gained their symbolic devotional meaning by functioning as objects that inflicted pain upon the body of Christ, thereby signifying that divine-human body who felt as we feel, who experienced as we experience.

<sup>23</sup> The *arma Christi* (the 'arms' or 'weapons' of Christ) was a devotional iconographic device used by viewers as a way to engage with and contemplate Christ's suffering. It consisted of a group of images representing individual objects associated with the Passion, which could include both the 'instruments' that caused Christ's suffering and death (for instance, the column on which he was scourged and the scourges themselves, the crucifix, the sponge dipped in vinegar, the lance, the crown of thorns, the hammer and nails) and other items from the Passion narrative, according to both Gospel and apocryphal accounts (objects like Christ's robe, the dice representing the soldiers casting lots for ownership of the robe, the cockerel who crowed at Peter's betrayal and Veronica's veil). See Schiller 1971–2: II, 184–230 for a thorough study of the visual tradition. Contemporary images of the *arma Christi* can be accessed via the British Library's Illuminated Manuscripts Catalogue. See, for example, manuscripts Royal VI E VI, f. 15, Harley 3000, f. 138 and Egerton 1821, f. 8v.

The processes of the pageant as cognitive niche were, therefore, inherently social, and this was achieved through a combination of direct actor-audience interactions, player-to-player interactions, the actors' use of the props, and how each spectator responded emotionally to verbal and physical affordances. Moreover, as with the cognitive cultural practices, those responses would be dependent on each individual's 'learning and training histories', including her or his empathetic proficiency and other aspects of personal identity, such as gender, social status or intensity of faith. *The Play of the Crucifixion*, then, made use of the unique qualities of its medium, a medium that is inherently collaborative, based on social and embodied interactions situated in a particular time and space. It therefore did not create a singular objective cognitive outcome, but opportunities for individuals to respond directly and personally to the objects, bodies and actions represented.

## Feedback Loops

Towards the end of the pageant, those standing in the street would have seen the player finally become the iconic image of the crucified Christ (219–300). Those spectators who temporarily side-lined him would then be 'reminded of the seriousness of what they [were] witnessing' and 'allowed to register the impact of the casual brutality in which they [had] been complicit' (McGavin and Walker 2016: 9). This moment would also position those in the street in a very particular relationship to the Cross. If it was elevated on the wagon, it gave them the opportunity 'to stand quite literally at the foot of the Cross' (McGavin and Walker 2016: 15), as we see depicted in van Eyck's diptych.

This is the most significant moment in the pageant, its cognitive 'pay-off', in which Christ, from his elevated position on the Cross, directly addresses the audience gathered before him:

Al men þat walkis by waye or street,  
 Takes tente 3e schalle no trauayle tyne.<sup>24</sup>  
 Byholdes myn heede, myn handis, and my feete,  
 And fully feele now, or 3e fine,<sup>25</sup>  
 Yf any mourning may be meete,  
 Or myscheue measured vnto myne. (253–8)

All men that walk by way or street,  
 Pay attention, so you miss none of my suffering

<sup>24</sup> The meaning is not clear here. *Tyne* can mean to suffer the loss of or to fail to maintain something. It can also mean 'to perish spiritually', so perhaps the meaning is 'pay attention, so you do not waste the spiritual good that comes through my and your worldly suffering'. See the *Middle English Dictionary*, *finen* (v.2).

<sup>25</sup> Or *3e fine* here means both 'before you end/leave the pageant' and 'before you end/leave this life', which ties in with the double meaning of *tyne* two lines above, the rhyme implicitly connecting the concepts. See the *Middle English Dictionary*, *fine* (adv.2).

Behold my head, my hands, and my feet,  
 And fully feel now, before you pass,  
 If any mourning may be equal  
 Or misfortune measured to mine.

The playwright has adapted this speech from Lamentations 1: 12, a passage used as an antiphon in Good Friday worship and as a responsory on Holy Saturday (King 2006: 144–5). As Pamela King observes, the ‘impact [of *The Play of the Crucifixion* was] enhanced by the way in which the pageant references practices of worship’ (2006: 144), though the pageant also adds to this appropriated material. Where Lamentations calls only on ‘all ye that pass by the way’ (*o vos omnes qui transitis per viam*), Christ also includes those in the ‘street’, a clear reference to the performance site on the York pageant route. Both the position of the audience in the street, now occupying space at the foot of the Cross, and this direct address imply complicity; whether this was achieved through an identification with Christ’s tormentors or through the passivity of not intervening, it is an effect reliant on spectators abiding by the implicit rules of performance. To drive home the message, Christ then directs all those gathered in the space before him to behold ‘myn heede, myn handis, and my feete’, bringing focus directly to his tortured body, asking them to directly compare their worldly suffering with his, to contemplate it in human, corporeal terms. This reinforces the extent of his sacrifice, once again merging the material reality and immediate presence of the player’s body with the devotional, spiritual and sacramental significance it has assumed.

This moment, then, directly links the events portrayed in the pageant with the liturgical and devotional activities undertaken beyond the frame of performance, and points towards the ways in which it might have affected ‘future modes of understanding and interpretation’ (Stevenson 2010: 17). For example, this moment of standing at the foot of the elevated Cross provided the spectator with a chance to feel what witnessing the Crucifixion ‘or something very like it is like in the real time experience of performance’ (McGavin and Walker 2016: 8–9), enhancing devotional cognition by blending time and space, and situating the fifteenth-century viewer corporeally in the biblical scene, as affective piety encouraged them to do imaginatively. But they could also then take these experiences forward with them, even after the pageant ended, because, as Stevenson observes, performance embeds itself ‘inside our bodies in such a way that we carry [it] with us, not only to other theatrical events, but also to our other encounters and experiences in the world’ (2010: 1–2). Jessica Brantley argues that the late-medieval laity often ‘enlivened the silent page with the imagination of noisy scenes, enriched individual prayer through association with liturgical celebration, and made the individual’s private encounter with the static book itself a species of sacred performance’ (2007: 2). Perhaps, then, spectators of *The Play of the Crucifixion* drew on their experiences to further enhance their cognitive practices beyond the boundaries of the dramatic niche, at the Good Friday service, but also in their own private devotional encounters, the pageant, therefore, transforming ‘what

the individual [could] do cognitively, both synchronically and diachronically' (Menary 2007: 39).<sup>26</sup>

Furthermore, the pageant might have similarly affected how individuals integrated with the sites and material culture of the city. As Tim Ingold writes, '[a] place owes its character to the experiences it affords to those who spend time there' (2000: 192); a site is, therefore, always 'a work-in-progress, perpetually under construction', and performance in an everyday site both works with those characteristics and becomes 'a lasting part of the story of that place' (Pearson 2010: 15–16). The devotional and spiritual meanings generated by *The Play of the Crucifixion*'s social affordances had the potential, then, to linger at performance sites throughout the city, offering spatial prompts for pageant participants to contemplate their experiences and their role in salvation history. The dual status of the props used in the pageant might offer similar opportunities. As discussed, the pageant places emphasis on the objects of the *arma Christi* and in performance this would probably also have highlighted the objects' material, real-time presence marking them as the everyday, ordinary tools of the medieval craftsman, as well as three-dimensional versions of images used in devotional contemplation. Their use in the pageant perhaps, then, generated later opportunities for participants to use these everyday objects as devotional prompts when encountered in their daily lives, recalling their use in the re-enactment of the Crucifixion and the personal experiences and emotional responses they elicited. This was perhaps especially true for the Pinners' Guild, the company of men who made and sold iron nails and pins, and who produced and performed in this pageant.

*The Play of the Crucifixion* can be understood, then, as a cognitive niche that both supported and enhanced devotional processes, and was reliant on social interactions to do so, to tie the spiritual meanings and devotional possibilities of the pageant to the city, its material culture and its people. It also enabled a symmetrical cognitive coupling between participants and their environment, and between different cognitive niches (Menary 2007: 78), leading to extensive 'new feedback cycles' (Wheeler and Clark 2008: 3564). The pageant was coupled with a matrix of distinct devotional webs, each influencing the other 'through a constant process of feedback' (Menary 2007: 44). It was dependent on the practices of affective piety and regular worship, but it also influenced those practices, fleshing them out with personal emotional and bodily experiences. Social cognition in this instance, then, required much more than a specific place and time to be enabled; it also required the right 'habit of mind' and a cultural practice that shaped and gave meaning to the social interactions witnessed by a particular community at a specific historical and cultural moment.

<sup>26</sup> For suggestions on how viewing the York Play probably influenced the mystic Margery Kempe, for example, see Njus 2013.

## Ben Jonson and the Limits of Distributed Cognition

*Raphael Lyne*

By the end of Ben Jonson's play *Bartholomew Fair* (1614), Justice Adam Overdo has found out what he needs to know, in two senses. He has made numerous 'discoveries' about Londoners' immoral behaviour at the Fair and he has learned enough about his own vulnerability to realise that he cannot entirely raise himself above his fellow citizens. Quarlous, a young gentleman who ends up being one of those who gains most from the plot, challenges the Justice, who is on the point of moral pronouncements, to take care of his drunk and nauseous wife, and to reconcile himself to all:

Nay, sir, stand not you fixed here like a stake in Finsbury to be shot at, or the whipping post i' the Fair, but get your wife out o' the air – it will make her worse else. And remember you are but Adam, flesh and blood! – you have your frailty. Forget your other name of Overdo, and invite us all to supper. There you and I will compare our 'discoveries', and drown the memory of all enormity in your biggest bowl at home. (Jonson 2012b: 5.6.78–83)

At the Fair, you have to keep moving in accordance with its dynamic circumstances; Overdo gets enough of the message to invite everyone back to his house. Quarlous appeals to a sense of common humanity that resides in the Justice's first name. He is 'Adam', and so is everyone else, all sinners, all capable of 'frailty', and that claim wins him over.

A different claim is made at the end of another Jonson play, *The Alchemist* (1610), also set in London, amid the street life of the Blackfriars district rather than at a famous Fair. A servant, Jeremy, known as Captain Face, and two accomplices have set up a fake alchemist's laboratory in the house of a gentleman, Lovewit. He returns at the end of the play to find the chaotic aftermath of Face's schemes, and opportunistically proves to be their main beneficiary, marrying a wealthy widow. He decides to be indulgent to his servant and asks for the audience's indulgence too:

That master  
That had received such happiness by a servant,

In such a widow and with so much wealth,  
 Were very ungrateful if he would not be  
 A little indulgent to that servant's wit,  
 And help his fortune, though with some small strain  
 Of his own candour. Therefore, gentlemen  
 And kind spectators, if I have outstripped  
 An old man's gravity or strict canon, think  
 What a young wife and a good brain may do:  
 Stretch age's truth sometimes, and crack it too.  
 [*To Face*] Speak for thyself, knave. (Jonson 2012a: 5.5.146–57)

He seeks tolerance for any way in which he has fallen short of the proper maturity of a property-owning citizen. He then orders Face to account for himself as well, and he does so, directly addressing the spectators as the play comes to a close, in a kind of epilogue:

So I will, sir.  
 [*Addressing the Audience*] Gentlemen,  
 My part a little fell in this last scene,  
 Yet 'twas decorum. And though I am clean  
 Got off from Subtle, Surly, Mammon, Doll,  
 Hot Ananias, Dapper, Drugger, all  
 With whom I traded, yet I put myself  
 On you, that are my country, and this pelf,  
 Which I have got, if you do quit me, rests  
 To feast you often, and invite new guests. (5.5.157–66)

He too, like Quarlous, proposes that the fortunate should bear the burden of hospitality, but there seems to be more of a gap between intent and outcome: it is a big 'if', whether what he sees as 'pelf' (stuff, booty) will be translated into festivity for all. Face will sneak away without welcoming anyone into his house; after all, he does not have one. His comment on 'decorum' is resonant. The claim from Face-the-character is that he kept within the bounds of propriety, and the claim from the actor playing Face is that he did not spoil his 'part' in all the stress and tension of the plot's unfolding. 'Decorum' is quite a heavy word, denoting seemliness and consistency in morals and artistic practice, and it is a regular touchstone for Jonson, concerned as he was with social mores and classical literary standards. Face, however, throws it out casually, letting any serious implications hang awkwardly in the air.

These two closing Jonsonian thoughts are, in some ways, quite different from one another. However, they are both concerned with the question of who Overdo and Face are: how they should see themselves and be seen; what their irreducible qualities may be; what fits them and what does not; what the parts of the part add up to. They both ensure that the audience is thinking about what makes a person a



person, and what makes a character a character, until the very end. The dual focus on person and character is important: in a play, the definition of a self is a dynamic thing. It is contingent and provisional, dependent on costume, props and other features of the social and material context. It can of course posit or imply such qualities in selves outside the theatre as well, but the theatre puts a special premium on the distributed nature of its fictional minds. They depend on contributions from many other constituent parts of the onstage and offstage worlds.

Both Jonson's depictions of London life happen in a particular social and material context, where a plethora of goods for sale, and a plethora of relations with these goods (especially, whether they are or can be owned), afford characters ways of orienting themselves and defining themselves. This might be conceived as an extension of mind along the lines defined by Andy Clark and others. Miranda Anderson's study of the *Renaissance Extended Mind* explores the idea of 'extended subjectivity' in a number of contexts, offering thereby a helpful validation of the thought that Jonson's characters are defining a kind of selfhood through their interactions with the marketplace (Anderson 2015b: esp. 154–66). Edwin Hutchins, whose *Cognition in the Wild* is a founding text in the field of distributed cognition, suggests another nuance in the way we should think about minds and things. He asserts that 'the cultural world is dynamic . . . cultural practices are not simply mental representations', the point being that the world of material goods has a life of its own that is not simply spoken to, and for, by the projected human subject engaging with it (Hutchins 2011: 443; also Hutchins 1995).

The network of goods for sale could also be seen as a 'cognitive ecology', another model of minds in the world. In the work of Evelyn Tribble and John Sutton, the emphasis is not on the location of cognition but on the problem-solving combination of minds and environment in practice (Tribble and Sutton 2011). Tribble has portrayed the mnemonic world of Shakespeare's theatre in these terms: text, props, set, patterns of entrances and exits, cues and so on are all designed to make the actors' work possible (Tribble 2011). Jonson's portraits of characters buying and selling may well lack such manifest purpose, but they may offer a kind of practical convenience as material possessions offer means of defining complex interpersonal relations through small shifts rather than attempts at absolute definition. It may be symptomatic of dramatic engagement with the field of 'The History of Distributed Cognition' that the phenomena to be observed in Jonson's plays have a number of possible intersections with this extended–embedded–ecological spectrum. For characters on the stage, with no brains and no bodies of their own, the distinction must be radically unclear. One dramatist may differ from another, or indeed one play may differ from another, in how they present characters' minds interacting with their worlds, and the kind of implications these interactions may have for the world beyond the theatre. Jonson seems to worry more than most about what may be reserved for, and attributed to, the individual. The evocative question asked by Clark and Chalmers in their founding paper, 'Where does the mind stop and the rest of the world begin?', is very much at issue (Clark and Chalmers 1998: 7).

Individual identity is an endemic concern for English city comedy in Jonson's time. As well as exploring the predicament of the individual in a changing urban society, dramatists portrayed new configurations of social rank as citizens and gentlemen asserted their claims. Social mobility and aspiration are also crucial concerns, as characters seek to redefine themselves. These concerns have already been identified by scholars of Renaissance literature and culture, and in some ways the questions addressed by extended–distributed–ecological models have already been anticipated. Ulinka Rublack, for example, has written about the 'meanings of leather' for the Augsburg merchant Hans Fugger (Rublack 2013). In the landmark collection *Subject and Object in Renaissance Culture* several scholars broach the complex ways in which individuals explored versions of themselves in their interactions with the material world (De Grazia et al. 1996). Margreta de Grazia's essay focuses on selfhood in *King Lear* and its interest in different ways of defining oneself through economic transactions and material goods (De Grazia 1996). De Grazia focuses on the play's negotiation of the history of economics and the transition towards mercantile values. It is worth wondering what a cognitive context can provide to an essay that, in some ways, traces related patterns. Perhaps the main difference is the attention on process that I aim to bring, wherein the construction of identity is more a matter of ongoing formative orientations than the summative outcome. Also important is the open question, as has been established, as to where a self constituted in relation to the environment should be seen to reside. Another purpose behind this chapter is to address the field opened up by Clark and Hutchins; to see what happens to their questions when they are acted out in a complex stage representation of London life.

Pertinent links between economics and psychology have been explored by Don Ross, who has aimed to make the two disciplines test and validate one another (Ross 2007). Human societies have always depended on the means of production, distribution and exchange, and it makes sense that self-orientation should be tuned to these means. Ross's selves are the products of social interactions and these almost inevitably have economic contours (Ross 2006). There is some overlap between this concept and the 'soft selves' described by Andy Clark. For Clark, we are the result of 'open-ended processes of physical and cognitive self-creation', but he finds a place for human agency in self-definition. We have evolved, he argues, to be 'engines of ecological control', able to exert some sort of steering through the mass of contingent possibilities (Clark 2007). Another attempt to portray this aspect of the relationship between cognition and environment comes in the work of Daniel Dennett, whose idea of a 'narrative self' captures the ongoing, dynamic, process-oriented aspect of selfhood, but with an important nuance similar to Clark's 'ecological control', in that a self-concept may act as a counterweight to a changing world, as he puts it, a 'centre of narrative gravity', as well as being shaped by that world (Dennett 1992; see also Gallagher 2011). It is clear that many of Jonson's characters respond to social and economic circumstances, but the emphasis on agency is telling. They are not all equally victims and they do not all respond with equal moral uprightness to the challenges of the world of buying and selling.

The place of money and class in Jonson's comedies has been explored by a number of critics, and it is clear that his plays deal with economic changes and local London tensions in a variety of sharp ways (Burlinson 2010). Katherine Gillen has identified an adventurous commodification of sexuality in *Bartholomew Fair*, wherein female characters seem willing and able to pursue power and agency by seeing their bodies as things to be sold to their own advantage (Gillen 2015). Gillen sets this argument usefully in the context of other images of the self in Jonson, which emphasise or question masculine control and civic interactions.<sup>1</sup> Sarah Dustagheer has localised the issues in *The Alchemist*, drawing out the ways in which the play speaks specifically to the real London locales in which the fiction is set (Dustagheer 2011). A similar focus on the interaction of people and locality animates the discussion of Jonson in Adam Zucker's *The Places of Wit in Early Modern English Comedy*, with the interplay of money and class frequently pressing on the lives of his characters.<sup>2</sup>

I want to pin the issues down by looking at a particular kind of speaking that features in *Bartholomew Fair*, namely the street cries with which traders advertised their wares. They make up something like a cognitive ecology in which those inhabiting the market are confirmed or challenged by a relationship with a matrix of goods. They have been noted as a feature of the early modern cityscape, but not necessarily as a form in which economic selfhood might constantly be tested.<sup>3</sup> In *Bartholomew Fair* there are various sorts of vocal advertising. Leatherhead the toy-seller does the fullest performance and his generic sales cries appear at some key moments:

What do you lack? What is't you buy? What do you lack? Rattles, drums, halberds, horses, babies o' the best? Fiddles o' the finest? (*Bartholomew Fair*, 2.2.24–5)

The 'halberds' are toy weapons; the 'babies' are dolls; Leatherhead stands for a whole range of voices in the Fair. His calls are juxtaposed interestingly with a speech by Overdo that come just before, wherein he praises his ruse of disguising himself in order to find examples of immorality:

Never shall I enough commend a worthy worshipful man, sometime a capital member of this city, for his high wisdom in this point, who would take you now the habit of a porter, now a carman, now of the dog-killer in this month of August, and in the winter of a seller of tinderboxes. And what would he do in all these shapes? Marry, go you into every ale-house, and down into every cellar, measure the length of puddings, take the gauge of black-pots and cans, ay, and custards with a stick, and their circumference with a thread; weigh the loaves of

<sup>1</sup> Compare Greene 1970; Christensen 1996; Hutson 2002.

<sup>2</sup> Zucker 2011, esp. pp. 54–101 on Jonson.

<sup>3</sup> Smith 1999: 63–71; Howard 2009: 96–7; Wilson 1995. I am grateful to Amy Bowles for first introducing me to the songs that will be discussed below.

bread on his middle finger; then would he send for 'em home, give the puddings to the poor, the bread to the hungry, the custards to his children; break the pots, and burn the cans himself: he would not trust his corrupt officers, he would do't himself. Would all men in authority would follow this worthy precedent! (2.1.11–25)

The target of Jonson's satirical mockery would very likely have been identified by his first audiences as Thomas Middleton, the puritan grocer mayor of London in 1613, who was notoriously keen to regulate both prices and morals.<sup>4</sup> Overdo, however, does not see any great significance in his disguise, unlike many characters in Renaissance drama, especially cross-dressers, who feel that some more significant change has happened: it affords him the freedom to spy, but it does not change who he is. What is distinctive, perhaps, is the way that his confidence and indeed delight in the disguise express themselves so vividly in depictions of weighing and measuring.

Jonson juxtaposes the Justice's belief in his own control over goods, as he is the one who measures, with the different note struck by Leatherhead's sales pitch. The street cry reminds us of a more unruly world of things, where the alluring question – what do you lack? – pertains to trinkets as well as staples. Technically, as Zucker notes, the kind of things mentioned by Leatherhead were not regulated in the way bread and perhaps custards were (Zucker 2011: 86). They provide a more spontaneous and speculative way in which the participants in the Fair might extend themselves.

The street cry 'what do you lack?' (or similar formulations, such as 'what lack you?') is a standard, and probably the standard, seller's call. It can be seen in numerous city comedies of the period: *The Fleir*, *Michaelmas Term*, *What You Will*, *The Second Part of, If You Know Not Me, You Know Nobody*, *The Roaring Girl*, *Greene's Tu Quoque*, or *The City Gallant*, *The Honest Whore*, *Eastward Ho*. At times it is just a piece of local colour, a way of making a street scene seem like a street scene. At other times it can be rather more than this: it can encapsulate a whole demeanour towards the world, firstly on behalf of the seller, who is there to inculcate a sense of need, and then satisfy it, and then secondly on behalf of the buyers, who experience street life as a kind of strange echolocation, in which they are constantly coming into contact with things they do not have. This is evident in a pair of intriguing appearances of the phrase in satirical pamphlets.

Nicholas Breton's *Wit's Trenchmour* (1597) is a comic dialogue between a scholar and an angler, in which both offer indirect reflections on social issues. The scholar talks about his travels, weaving improbable tales of exotic possibilities. In one of the places he visits, he finds that society has undergone a great change:

In an other Country I found by the speech of the people, a great alteration of men, for a number of Gentlemen of auncient race, by the wretched course of

<sup>4</sup> See John Creaser's notes on this passage in Jonson 2012b: 422–4.

fortune, or folly of their owne or their friends indiscretion, were gone from the Court to the Cart, and the son of What lacke you, was become the onely right worshipfull. (Breton 1597: E2v)

Two opposite journeys are made: one is from the court, and the right to be addressed as 'right worshipful', to the street, and perhaps specifically selling from 'the cart'; and the other, equally arresting, is from the ignominious world of the street seller (the son of the one who speaks the iconic 'what lack you?') to the upper echelons. The phrase is also efficiently evocative in Thomas Dekker's plague pamphlet *The Seven Deadly Sins of London* (1606), where again it changes places with another evocative phrase:

Everie one spent and spent, but who tasted the sweetenes? In stead of selling their wares, they plyed nothing now but getting of children, and scowring of pæces. In stead of what doe you lacke? was heard Arme, Arme, Arme. This geere was to be looked into, and therefore they desired their gracious Emperesse (Money) not to lye lasing thus in a chamber, but either that she would be more stirring, that they (her Subjects) might have better stirrings too. (Dekker 1606: F4v)

The profligacy of Londoners has had disastrous results. The normal business of commerce, now suspended, is summed up in the phrase 'what do you lack?'. Instead, the ominous military cry 'Arm, Arm, Arm', the desperate call of a besieged city, is heard on the streets. Again the phrase is more than just a typical part of the urban soundscape; it denotes a way of life.

Leatherhead's other use of the phrase could be routine, were it not for another juxtaposition with a piece of purposeful, magistrate-like thinking from Overdo. The Justice suffers a few blows as he sneaks around, but he resolves to keep on with his plan. He says that people should not abandon the tools of their trade after one setback, which, given his disguise, is somewhat ironic. However, where before he was bolstered by the validating power of his role as measurer, now he is validated by his orientation with justice, the King and the commonwealth:

The husbandman ought not, for one unthankful year, to forsake the plough; the shepherd ought not, for one scabbed sheep, to throw by his tar-box; the pilot ought not, for one leak i' the poop, to quit the helm; nor the alderman ought not, for one custard more at a meal, to give up his cloak; the constable ought not to break his staff and forswear the watch, for one roaring night, nor the piper o' the parish – *ut parvis componere magna solebam* – to put up his pipes, for one rainy Sunday. These are certain knocking conclusions: out of which I am resolved, come what come can, come beating, come imprisonment, come infamy, come banishment, nay, come the rack, come the hurdle – welcome all! – I will not discover who I am till my due time; and yet still, all shall be, as I said ever, in justice' name, and the King's, and for the commonwealth. (3.3.20–31)

The plough, the tar-box, the helm of a ship, the alderman's cloak and the constable's staff are significant enough objects that they can stand metonymically for the relevant professions; the piper's pipes collapse role and tool together even further. Overdo, on the other hand, cites less material things as his protection against the fear of the rather more tangible beating, rack and hurdle.<sup>5</sup> This may reflect his self-confidence; it may perhaps reflect a less coherently manifest identity in comparison with the weights and measures of earlier in the play, and therefore a step towards the Adamic frailty he will acknowledge at the very end of the play.

Very soon after, we are with Leatherhead again: the invocation of things in their place and the naming of legitimate authorities rub shoulders in the Fair – not just in the Fair – with the world of 'what do you lack?', the opportunity to extend yourself into proliferating possessions:

What do you lack, gentlemen? What is't you buy? Fine rattles? Drums? Babies?  
Little dogs? And birds for ladies? What do you lack? (3.4.3–4)

Again, alongside the orderliness of selves and things imagined by Overdo, Jonson places trivial things, offering ephemeral satisfaction or perhaps something a bit more significant, an improved relationship with ladies who want birds, for example. The restlessness of marketplace commerce impinges just enough to reveal the problem with Overdo's certainty: there is too much to measure.

The qualities of London street cries, their individual character and their collective plurality, proved appealing to musicians of the period. A number of part-songs, which were entirely woven out of street cries, survive in manuscripts. They mostly feature straightforward selling of food, textiles and other commodities, but they also feature pleas for charity from the poor and from prisoners, advertisements for undertakers and quirky stories, such as the one about a lost mare with three legs, no eyes and various other issues. Richard Dering's contribution to the genre features the characteristic cry:

What do ye lack, do ye buy, Sir, see what ye lack: pins, points, garters, Spanish gloves or silk ribbons? Will ye buy a very fine cabinet, a fair scarf, or a rich girdle and hangers? See here, Madam, fine cobweb lawn, good cambric or fair bone lace.<sup>6</sup>

It is difficult to know exactly what to make of these songs. Philip Brett, their modern editor, dates them to around 1599 because in that year John Wolfe entered

<sup>5</sup> A hurdle is 'a kind of frame or sledge on which traitors used to be drawn through the streets to execution' (*OED*).

<sup>6</sup> Brett 1974: 133. The other songs in Brett are: Thomas Weelkes, 'The Cries of London', pp. 102–13; Orlando Gibbons, 'The Cries of London', pp. 114–26; Anon., 'The Cry of London', pp. 127–32; and Richard Dering, 'The Country Cries', pp. 148–57, which is a rural counterpart and takes a more parodic turn on the linguistic quirks of the countryside.

something apparently similar in the Stationers' Register, though as far as we know none of the songs was ever printed. The manuscripts themselves are musicians' collections, displaying some association with wealthy households (who could afford to pay musicians professional enough to have their songs written down), but they offer limited information about provenance (Brett 1974: 173–5, 186–9). It seems reasonable to assert that the written record does not convey that the songs were popular art with a street life of their own, but on the other hand it is probably excessive to see the songs as parodies looking down on the market from higher social strata. It seems better to see them as a kind of testimony to, or intimation of, the way street cries are more than just functional parts of the urban landscape. They make up a not-quite cacophonous pattern with which, and against which, Londoners located themselves. Bruce Smith sees them as an attempt in literature to 'hear the city whole' (Smith 1999: 68).

Ben Jonson's plays are often tuned to the cadences and content of these cries, as are numerous city comedies. *Bartholomew Fair* is more or less written out of them. In *The Alchemist* too the different characters, obsessed with wealth and status, are ready to register this network of words and things. They do more than just register it, and in doing so engage with a more pointed question in the extended–distributed–ecological field. In his online 'History of Distributed Cognition' seminar (2014), Andy Clark asks a question about the extended minds of technologically enhanced humans: 'what, if anything, limits the range of all this snowballing self-reinvention?' A version of this question is applicable to the economically oriented selfhood of Jonson's characters. While they are not, as Clark's subjects are, hypothetically enhancing their mental capacities with implants, they are testing and stretching what they are in relation to the material world. In *Bartholomew Fair* the range-finding and range-limiting posited by Clark are a constant buzz, as propriety and boundaries are tested. In *The Alchemist* the question is more sharply posed and more structural to the plot's main turns.

When the issue pertains to Jonson's characters, however, it has a different complexion. For Andy Clark, the question is practical and philosophical: what things can an extended human never do? At some point, do we have to stop thinking about the result as a self, or a human? But dramatic characters in Jonson's hands become means of making this an economic issue and a moral one. They put these things back into the picture where the scientists leave them out: it is not always interesting, in the course of a hypothetical scenario, to wonder whether imaginary subjects will have trouble paying for technological enhancement, or whether it is morally right to opt for such extensions. Jonson faces down both these things: self-extension in a world of purchasable and unpurchasable things is unequally afforded and it may be morally problematic.

Another crucial difference between philosophical treatments of extended, soft and economic selves and dramatic depictions of characters is that the contextual network in a play is liable to be both a rich and complex combination of elements, and also relatively elusive. It is not easy to determine the point at which contextual factors are, or are not, part of the material network. This, indeed, is something that

literature may demonstrate: that there is no clear way of isolating or bounding the distributed components of the mind. For example, one of the contexts for the marketplace life in *Bartholomew Fair* comes in Horace's *Satires*. Overdo himself mentions Horace as he takes pleasure in his disguise:

Fain would I meet the Lynceus now, that eagle's eye, that piercing Epidaurian serpent (as my Quint. Horace calls him) that could discover a justice of peace – and lately of the Quorum – under this covering. (2.1.3–5)

Lynceus is one of the Argonauts, famed for his excellent sight; the Quorum was an inner circle of respected magistrates. The reference to Horace (his first name, Quintus, abbreviated probably in speech as well as in print) concerns the snake, an animal reputed to have good vision, and sacred to Aesculapius, the God of Medicine, who was worshipped at Epidaurus in Greece. In fact the Horace reference, to *Satire* 1.3.26–7, is misapplied in that the original point is that many are keen-eyed about others' faults, but not about their own.

Although the link is a bit abstruse (which is the point here), Horace is a precedent for depicting self-definition through marketplace interactions, and since Jonson was such a devoted follower of Horace, all such nuances are potentially weighty.<sup>7</sup> In the *Satires* Horace depicts himself, with multiple layers of irony, shopping for wholesome greens (the Latin *holus*; best thought of as a kind of cabbage).<sup>8</sup> The choice of greens becomes a motif that divides those who adhere to the proper behaviour of the past from those who are liable to the corrupt excesses of the present.

*panis ematur, holus, vini sextarius, adde / quis humana sibi doleat natura negatis* (1.1.74–5)  
buy bread, greens, a measure of wine, things that would hurt human nature if they were denied.

*quacumque libido est, / incedo solus, percontor quanti holus ac far* (1.6.111–12)  
I go out alone, wherever I want, asking the price of greens and flour.

*nugari cum illo et discincti ludere, donec / decoqueretur holus, soliti* (2.1.73–4)  
They [Scipio and the other noble Romans of the past] used to chat with him, hanging loose, while the greens were cooking.

*'non ego' narrantem 'temere edi luce profesta / quicquam praeter holus fumosae cum pede pernae'* (2.2.116–17)

I was never one to eat rashly on a working day, except for greens and a bit of smoked ham hock.

<sup>7</sup> On Jonson and Horace, see Moul 2010.

<sup>8</sup> On the topic of food in Latin literature, see Gowers 1993.



*O quando faba Pythagorae cognata simulque / uncta satis pingui ponentur holuscula lardo?*  
(2.6.63–4)

When will they give me beans, Pythagoras's children [this is a joke about Pythagoras's reputed belief that beans had souls], and little greens mixed with fat bacon?

*si nusquam es forte vocatus / ad cenam, laudas securum holus ac, velut usquam / vincitus eas, ita te felicem dicis* (2.7.29–31)

if it happens that you're not asked out for dinner, you praise cabbage, and tell yourself you're happy not to be out [in this poem Davus the slave turns the tables on his master and undermines many of his pronouncements].

The six mentions of *holus* create an idiosyncratic pattern, a potentially innocuous way of pinning down the moral guidance Horace has to offer. They could be taken rather differently: if the frequent references to greens seem excessive, they may guide the reader to suspect that some other failing (sexual licence, for example, or political corruption) is the true topic, veiled behind something less edgy. The choice of food as a topic may also act as a commentary on society's tolerance level for free satirical speech: satirists are reduced to praising the culinary habits of the past because other topics are too hot to handle. On the whole, though, the vision of Horace's satirical persona, exposed to a marketplace just as hectic as London's but keeping his mind on healthy, simple things, is another instance of the sort of material self-orientation that happens more chaotically in *Bartholomew Fair*.

Horace's *Satires* are invoked by the play and they offer their own model of economic selfhood. The presence of that model in Jonson's play, or in Jonson's other plays (*Poetaster*, an extreme case, includes Horace as a character and dramatises translations of two *Satires*, 1.9 and 2.1), is relatively intangible in comparison with Leatherhead's street cries. However, it stands for the sort of subtle layering that any literary version of distributed subjectivity is likely to evoke. This intertextuality, however, stands for other sorts of subtle layering that must apply to any real-world processes: the differences between individuals, their histories, their particular exposure, mean that there is infinite variety, surely, in the potential consequences of this soft selfhood. Literary representations strike a balance between the boundedness and the multiplicity of such processes.

Although there are some patterns in Jonson's way of thinking, and a probing anxiety about self-reinvention is evident throughout, different plays offer different configurations. One last quotation from *Bartholomew Fair* illustrates the fluidity with which that play represents its characters moving through the London market. At the Fair there is to be a puppet show, in which the story of Hero and Leander is to be told. The childish gentleman Cokes asks whether it will follow Christopher Marlowe's famous unfinished poem, first published in 1598. He is told by Littlewit that the story has been adapted to local needs:

It pleases him to make a matter of it, sir. But there is no such matter, I assure you: I have only made it a little easy, and modern for the times, sir, that's all: as, for the Hellespont I imagine our Thames here; and then Leander, I make a dyer's son, about Puddle Wharf and Hero a wench o' the Bankside, who, going over one morning to Old Fish Street, Leander spies her land at Trig Stairs, and falls in love with her. Now do I introduce Cupid, having metamorphosed himself into a drawer, and he strikes Hero in love, with a pint of sherry – and other pretty passages there are o' the friendship that will delight you, sir, and please you of judgement. (5.3.81–100)

In order to appeal to the audience at the Fair, the story has been relocated and repopulated with dyers and pints of sherry. One booth on the market has been made to resemble the other booths of the market by evoking the same socio-economic landscape. The draw of this urban world, in which the characters have to move and define themselves, looks like a comic deflation of the legendary love story, but in the overall context of *Bartholomew Fair* it is part of an often genial, if not untroubled, evocation of a material community.

The atmosphere of *The Alchemist* is rather different. Here ambition and greed motivate individuals to plot new relationships with their private circles and the wider world. The occupants of Lovewit's house, and their visitors, are all trying to gain an edge. When Jonson represents them imagining the potential for new status in the world in terms of material goods there is a different moral demeanour. When Sir Epicure Mammon figures his wish for the famous philosopher's stone, and all the gold he will make with it, he sets the fabled riches of far-off places against current struggles conceived in material terms:

Come on, sir. Now, you set your foot on shore  
 In *novo orbe*. Here's the rich Peru,  
 And there within, sir, are the golden mines,  
 Great Solomon's Ophir! He was sailing to't  
 Three years, but we have reached it in ten months.  
 This is the day wherein, to all my friends,  
 I will pronounce the happy word: 'Be rich.'  
 This day you shall be *spectatissimi*.  
 You shall no more deal the hollow die  
 Or the frail card. No more be at charge of keeping  
 The livery-punk for the young heir that must  
 Seal at all hours in his shirt. No more  
 If he deny, ha' him beaten to't, as he is  
 That brings him to the commodity. No more  
 Shall thirst of satin, or the covetous hunger  
 Of velvet entrails for a rude-spun cloak,  
 To be displayed at Madam Augusta's, make  
 The sons of sword and hazard fall before

The golden calf and, on their knees, whole nights,  
 Commit idolatry with wine and trumpets,  
 Or go a-feasting after drum and ensign. (2.1.1–21)

This passage needs some explanation for the modern reader but it is not impossible that its combination of registers stretched its early listeners too, or at least gave them a provocative trajectory from higher to lower registers and contexts. Mammon starts with the Latin *new world*, allusions to Peru, source of fabulous wealth for Spain and then the mythical source of Solomon's gold; he ends with a biblical 'golden calf'. In between, he evokes a humiliating relationship with the commercial world, in which corrupt gambling ('hollow die' and 'frail card') and crooked schemes are a source of income. Lines 10–14 are a bit obscure but they seem to refer to the menial task of minding a prostitute so that a rich young man can be forced to sign – 'seal' – a deal when he is at a disadvantage; and if that doesn't work, then the struggling Londoner would have to force the young man to comply. The 'commodity' in question suggests the complex pyramid-scheme-like arrangements in which dupes would find themselves in possession of worthless goods, falsely believing that they could redeem these for cash.<sup>9</sup>

The most striking and revealing moment comes when he talks about the everyday satin and velvet of his current struggles. Hunger and thirst and the physical intimacy of 'entrails' are inseparable from the value of the textiles he wears and the quality of manufacture. Mammon's selfish greed is reprehensible and the way he merges the essentials of life with its superficial accoutrements is problematic too. However, Jonson captures the gruelling neediness of a life of dearth – a life constantly asking itself 'what do you lack?' – in a way that is almost sympathetic. Mammon parallels a story Face tells of his co-conspirator Subtle, who used to hang around at 'pie-corner' sniffing the air, unable to buy any food (1.1.28). Actual hunger and a distorted metaphorical hunger both motivate the characters of *The Alchemist*.

Later in the play we see Face helping to persuade Dame Pliant (a wealthy widow) to dress up as a Spanish gentlewoman in order to divert someone the tricksters think is a Spanish count. In fact it's Surly, a sceptic, in disguise. The play includes a strangely heart-warming moment when the tricksters club together with half the people they are fooling to expel Surly. Kastril, an angry young man, finally makes himself useful. Self-reinvention crosses a line in this case and the play's own theatricality seems to rise up against Surly's corrupted version. When Face persuades the wealthy widow Dame Pliant to dress up as a Spanish countess in order to seduce the apparent Spanish count, he turns to the material prestige of Spanishness. She must become Spanish by means of a change of clothes and possibly also of voice, but she also forms herself in relation to a shopping list:

<sup>9</sup> On 'commodity' and dubious investments, see Hawkes 2010: esp. 40, 129, the latter making the interesting point that it could be a synonym for 'prostitute'.

Ask from your courtier to your Inns of Court-man  
 To your mere milliner: they will tell you all,  
 Your Spanish jennet is the best horse. Your Spanish  
 Stoop is the best garb. Your Spanish beard  
 Is the best cut. Your Spanish ruffs are the best  
 Wear. Your Spanish pavan the best dance.  
 Your Spanish titillation in a glove  
 The best perfume. And for your Spanish pike  
 And Spanish blade, let your poor Captain speak. (4.2.7–15)

Not everything here is a purchasable possession – the ‘stoop’ is a stylish gesture, the ‘pavan’ a dance, and the ‘pike’ and ‘blade’ are probably featured more for the opportunity for gesture and innuendo (there is a lot of physical comedy implicit in the speech). However, she is invited to define this new guise in relation to the mostly material prestige with which it is associated.

Dame Pliant is unwilling: she has borne a grudge against Spain ever since the Armada of 1588. So Subtle and Face turn to threats as a means of persuasion, and their threats ultimately turn back to a recognisable world of low-grade buying and selling:

PLIANT Truly, I shall never brook a Spaniard.  
 SUBTLE No?  
 PLIANT Never sin’ eighty-eight could I abide ’em,  
 And that was some three year afore I was born, in truth.  
 SUBTLE Come, you must love him, or be miserable.  
 Choose which you will.  
 FACE [*To Kastril*] By this good rush, persuade her.  
 She will cry strawberries else within this twelvemonth.  
 SUBTLE Nay, shads and mack’rel, which is worse.  
 FACE Indeed, sir?  
 KASTRIL God’s lid, you shall love him, or I’ll kick you. (4.2.28–35)

The ‘good rush’ that Face swears by may be significant. The phrase avoids onstage blasphemy but it may also make its character swear by the humble flooring as a means of drawing Kastril’s attention to the riches being squandered. To ‘cry strawberries’ is to become a street seller; ‘shads and mack’rel’ is another street cry, but evidently a more ignominious one. Selling fish may have been more unpleasant work, and there is also likely to be a sexual innuendo here – the underlying suggestion is that if she will not woo the Spanish count for Face and Subtle, she will become a prostitute. Indeed, the ‘strawberries’ may, especially if accompanied with the right gesture, provide a similar suggestion.

Jonson portrays a city life in which identity is partly a matter of economics and economic identity is distributed through complex networks of words and things. Perhaps a key word might be orientation: what we see are characters who,

wittingly or unwittingly, skilfully or unskilfully, are oriented within a network of things and words for things. The question to end with is what this says back to the extended–embedded–ecological network of ideas about the mind. The important thing is how different distributed cognition looks when it is acted out. The over-complexity and the non-typicality of what is explicit and implicit here are what literary explorations in psychology have to offer, and they could be seen as no more or less indispensable than the attenuating, clarifying, typicality-oriented efforts by cognitive scientists and philosophers. Jonson's plays depict the moral and economic sharpness of the many component interactions that make up the social self as a work-in-progress.

Masked Interaction:  
The Case for an Enactive View of *Commedia dell'Arte*  
(and the Italian Renaissance)

*Jan Söffner*

Plate 3 shows the mask of Arlecchino. At first glance, it does not seem to be a very telling object. In nearly any part of the world it is possible to find more exuberant masks than this seemingly simple piece of leather, which covers only the upper half of the face. The masks were shaped in a complex process starting with a clay sculpture modelled after the actor's face, whose dimensions were then transferred into the carving of a wooden matrix made from a type of wood called *cirmolo* (found only at a certain altitude of the Alps). The leather itself had to be dense and of a thickness between 1.5 mm and 3.0 mm. It was pushed around the carved mould, where it could be attached only with brass nails. Then it was coaxed with a horn hammer, hardened and finally coloured (in most cases monochrome black, brown, red or green). This is quite a complex process for such a seemingly primitive mask – but, as we will see, the mask was not primitive at all. Its complexity is only difficult to see when only its iconicity is described.<sup>1</sup>

On the mask pictured in Plate 3, there is one notable point of colour: on the right of the mask's forehead, a little bump is marked in red.<sup>2</sup> This bump might simply refer to the fact that Arlecchino gets beaten on stage nearly continuously, and it is highly probable that, regardless of intent, the *commedia dell'arte* audience simply interpreted it in that way. However, it can also be read as a rudimentary devil's horn, which would indicate the infernal origin of the stage character in question. The name 'Arlecchino' has been traced back to Dante's *Inferno*, Canto XXII, where the fraudsters are punished. There, Alichino, a grotesque malignant demon whose duty is to guard the sinners, is in turn cheated by one of them – causing utter chaos among the demons themselves. However, it is also possible that the name made a reference to a Carnival mask of the same name; as we lack sufficient sources about the names used in Carnival, it is even possible that both Dante and the *commedianti* picked up the name from an already existing Harlequin mask. So,

<sup>1</sup> I very much thank Malcolm Knight for his precious and generous information on this topic; also very helpful is his short article 'Masks and the *commedia dell'arte*' (1985).

<sup>2</sup> For the occurrence of this red bump in the Renaissance, see Knight 1985: 30; some masks of Arlecchino could also figure bushy eyebrows and/or moustaches.

the iconological attribute is polyvalent at best, and might be completely misleading at worst. Early sources even tend to omit it.

The physiognomy helps a little more. One characteristic is Arlecchino's hollow cheeks, symbolising his hunger. Even more striking is the expression of the face as a whole. The eyes are wide open and the forehead is wrinkled. But what are we supposed to read into this expression? Surprise, perhaps. But even this is hard to say without considering the interplay with the facial expression on the lower half of the actor's face. We cannot understand much considering the mask's iconicity so long as we do not also consider the mask as a medium for the actor's distributed cognition and virtuosity. Given this approach, though, the expression makes much more sense, because it no longer counts just as an image, but instead is an affordance (Gibson 1966) or solicitation (Dreyfus and Kelly 2007) that orients the actor's *facial expressions* – although either laughing or crying works well in the interplay with the mask's expression, calmness and inward-directedness do not.

The mask even appears to afford certain kinds of *gestures* (and not others). The Italian director Giorgio Strehler, who was working with *commedia dell'arte* masks for his famous presentation of Carlo Goldoni's *Servitore di due padroni* at the Piccolo Teatro in Milan, observed that in order to 'work' for an audience, masked performance required substitutes for actorly gestures touching the face. That masks orient bodily enaction is well known to practitioners of theatre. The French director and theorist of acting Jacques Lecoq has closely examined the effects of masks on the bodily expressiveness of actors; his highly recommendable work *Le corps poétique* (Lecoq 1997) gives a general theory of masks as orienting the emotional attitudes, body postures and facial expressions of actors.

But what concrete orientation does the mask of Arlecchino offer? Mace Perlman, a leading *commedia dell'arte* actor, has observed that this mask entails a body posture with a complex upward and at the same time downward direction. On the one hand it makes you bow down, like a servant or carrier of heavy goods does (which refers to the status of Arlecchino as a Zanni (servant) and *facchino* (carrier)); on the other hand, the mask makes you look up from that hunched stature in a way that might challenge hierarchies (Harrison and Perlman 2011). The mask hence solicits a bodily posture, likewise orienting embodied attitudes.

Another leading figure of *commedia dell'arte* is Michele Bottini. He describes the experience of performing Goldoni's *Servant of Two Masters* while in a state of complete exhaustion:

In the middle of the show my head was spinning. I recited with my autopilot engaged . . . The leather mask was so drenched in sweat that it felt soft on the face and through the little holes for the eyes I saw my fellows on stage like fish in an aquarium of murky water . . . I was tempted to raise the mask, to apologize to the audience and to leave the show. It was that moment that something strange happened. I felt as if the mask was becoming animated with life of its own. It seemed to grasp my face and in a quiet voice, the mask said to me: 'OK, my friend, now follow me . . .' Suddenly my tension and my exhaustion seemed to

vanish. I regained lucidity and I waited. Arlecchino made a silent pact with me at that moment and I followed. I did exactly what he told me. At that moment, my energy returned. I ceased trying to be interesting and entertaining on stage. I was no longer the star of the show. It was the extraordinary experience that a weight had been lifted; the responsibility for the success was no longer mine as the actor. I was becoming the servant. I began to take literally what the other characters were saying . . . Through those little holes of the leather mask I began to see the world with the eyes of Arlecchino. (Bottini 2015: 60–1)

It is clear that Bottini – when speaking of the ‘silent pact’ – is musing on the demonic and devilish tradition of Arlecchino. What is less clear, however, is whether this devil’s pact with the mask is to be taken literally or not. A less demonic reading is possible as well. If – as stated – a mask can orient body language and body posture in its own way, then it is clear that it can lead the body into certain ways of acting and behaving – thereby changing the responding actions of the other actors and the stage dynamics as a whole, which, in turn, can affect the actor’s continuing performance. This metaphorical assumption is suggested in the statement that the mask ‘grasped’ Bottini’s face, which can be translated into the interplay of the mask’s shape and the facial expressions it orients. Evidently, Bottini is describing less metaphysical effects than it might seem at first glance.

When trying to pin down this functioning to theories of masked performance, though, we face some difficulties. Broadly speaking, theories about masked performance are grounded in a quasi-Nietzschean dichotomy of the Apollonian (focused on an active and conscious play of concealing and fashioning the self and/or identities) and Dionysian (focused on possession and the loss of self-conscious agency) use. Masks are described as hiding and at the same time displaying a face, which enables the performers to assume different roles and identities;<sup>3</sup> yet they are also described as leading into a state of ecstatic loss of personal agency, which can in turn lead to the ascription of demonic agency as body-snatching the performer (Fischer-Lichte 1982). The archaeologist John Picton (1990) describes the dichotomy as the gain of a reflexive dramatic distance between the performer and what she or he performs on the one hand, and a loss of any reflexive distance-taking on the other. The ethnographer John Emigh distinguishes between the function of ‘concealment’ as a play on identities, and ‘visitation’ as a performative state ‘characterized by a loss of the sense of “me” and an engulfment of the self by an entity that is considered “not me” – with an attendant loss of conscious control and a scanty memory of what took place while performing’ (1996: 29).

Of course, Bottini’s ‘pact’ might at first glance lead us into thinking about a state of possession or visitation. But his experience is not really about ecstasy. His pact rather draws him into a state of hyperawareness. Rather than being body-snatched, he willingly obeys. In this, his performance appears to follow a third pole between self-conscious concealment and ecstatic visitation. Indeed, phenomenologically

<sup>3</sup> See, for example, Weihe 2004.



speaking, such a third pole does make sense as well. The dichotomy between concealment and visitation as outlined above appears to rely on the problematic equation of the sense of identity (where the self appears as a consciously monitored ego with whom to be identical or not) and the sense of agency (where the self does not appear as an entity, but as a function to distinguish things one is doing from things that are merely happening). This problematic equation leads to the implicit assumption that *controlled* action has to be *self-reflexive* action, including a conscious mental self-monitoring and a conscious identity; a lack of concentration on who one is and what one is representing for the gaze of others as one's own identity is thought of as leading to a loss of conscious activity as well.

Psychology and phenomenology, however, are very aware that the utter control of a person's activity goes along with Zen-like, non-reflexive states of feeling the self as becoming one with the activity – which means that a sense of agency does not vanish when the sense of identity is lost, but rather can be enhanced in such a state. Mihaly Csikszentmihalyi (1990) has labelled similar states as 'optimal flow' experiences. This experience is also discussed in neurological terms. The self-critical activity of the prefrontal cortex, present in self-reflection and the emotionality of shame, appears to hinder 'flow'. Blocking these 'reflexive' regions of the brain has been used in military training for snipers to summon 'flow' and thus speed up and secure actions (Weisend et al. 2012). Granted, Csikszentmihalyi's conception might well be disputed, and there are other notions which describe the interplay of conscious control and bodily automatisms.<sup>4</sup> I have argued for an alternative phenomenology of a non-reflexive intrinsic *feel for action*, rather than an action-monitoring mental representation, as a way to bridge the conceptual gap between mere bodily automatisms and conscious control of action (Söffner 2014a: 25–8). All these studies, however, agree that reflexive self-awareness (the sense of identity) is not a necessary condition for controlled skilful action, but that – at least under certain conditions – reflexive self-monitoring can actually hinder the fluidity of controlled action (the sense of agency). So, it is fair to say that the dichotomy of either reflexive self-concealment/self-exposure *or* trance-like self-loss and visitation rests upon problematic phenomenological assumptions.

Therefore, in describing the Arlecchino mask, I wish to develop a different heuristic category for masked interaction. This third pole centres on bodily presence in interaction, rather than the dichotomy of self-concealment and self-display on the one hand, or self-loss on the other. It is built around the notion of agency rather than identity. As with Bottini's pact, this third pole focuses on a mask as engaged in shared bodily interaction or stage dynamics. While doing so, it alters this interaction by blocking both voluntary and involuntary facial expressions and replacing them with a fixed expression. Indeed, this third pole – the 'pact' with a mask or 'following' of it – appears broadly used in cultural practices across the world. However, it is easy to overlook this – either because a rather technical func-

<sup>4</sup> For a discussion of these see Selinger et al. 2007; Cappuccio and Wheeler 2012; Hutto and Sánchez-García 2014.

tion of these masks is so accentuated that they appear to do nothing but protect a face, or because they are so elaborated that the function appears to retreat behind the iconic or symbolic dimension. I think, for example, of masks used in violent aggression (mask-like helmets or war paint). Those masks mostly guide and enable the wearers to enter a shared dynamics of interactive bodies. Thinking back to Weisend's studies on military training, the potential relation between the neuroscientific blocking of self-reflexive monitoring and the intercorporeal functioning of a mask immediately jumps out. For one's (sense of) identity, a mask can work as a kind of magic hood. A mask can lead to a state of acting in bodily presence, without the awareness of presenting one's self to the gaze of others – and so, the experience of shame and interactive self-reflection must change in turn.

The focus on *omitting* the sense of identity (rather than concealing identity and playing with different identities) also pops up in superhero masks, which are used to draw the characters in a state of *action*. More often than not, superhero masks only hide the upper part of the face, like the Arlecchino mask; the rest of the face must be visible to display the expressions in action. The question of concealment and a play on identities usually only sets in when the action is done and everyday life takes over – and for this sense-of-identity-based business, the superheroes use their normal face rather than a mask. The focus on action might help illuminate erotic masks as well, some of which are half-masks too. Here, replacing spontaneous and involuntary expressions with a fixed face appears to play a decisive role, not only setting free the imagination of the other persons involved in the erotic act, but also altering the intercorporeal dynamics of interaction in a quite autonomous way. To sum up: entering any of the described dynamics will produce a sense of 'following' a mask or making a 'pact' with it – that is, letting it orient one's bodily actions in a state of unleashed activity.

The interactive dimension of this third pole might be clarified theoretically in light of Shaun Gallagher and Dan Zahavi's (2007) view of the so-called 'problem of other minds'. Gallagher and Zahavi reject current notions of the Theory of Mind, discussing the limitations of Theory Theory, where we understand others by constructing mental models of their thoughts and motivations, and of Simulation Theory, where we understand others by putting ourselves in their shoes to simulate what they are feeling and doing. They instead turn to Interaction Theory, which claims that we understand each other in a less conceptual way, by sharing a common activity. Bottini's concept of 'following' implicitly draws on Interaction Theory. By inserting its own frozen facial expressions in bodily (emotional) interaction, the mask orients a shared dynamics and gains some kind of agency in bodily *interaction* – which in this case includes the bodily shared stage dynamics.

When inserting Interaction Theory into the paradigms of cultural studies, the traced phenomenology can indeed make a decisive difference. This can best be elaborated against the backdrop of Niklas Luhmann's idea of 'double contingency'.<sup>5</sup> With regard to theories about 'otherness', double contingency offers the

<sup>5</sup> For an overview see Vanderstraeten 2002.

simplest and clearest version of the problem. For Luhmann, as for Theorists of Mind, a communicating person cannot know what others think – and in turn is equally opaque to others. So, in Luhmann’s view, communication as such always raises the problem that we don’t know what others think that we are thinking. This leads to a state in which we do not simply observe others building mental models about their inner selves (as Theory of Mind would have it), but rather primarily observe others observing us. This in turn leads to a stance where we act to display our own actions to the gaze of others – which in masked interaction would lead to the dialectics of ‘concealment’ as displaying and hiding a self. If we consciously focus on our inability to control what others are thinking about us, we will almost certainly try even harder at least to control our expressions, to make them readable in the way we want them to be read. In a Luhmannian kind of communication, we can never simply act. Rather, we always act to ‘communicate’ – which means we act to display our actions to the gaze of an observer.

An elaboration of Gallagher and Zahavi’s view, however, offers a complementary state of interaction. An *enactive* Interaction Theory holds up the claim that, more often than not, we interact without the problem of Luhmannian double contingency. As long as we are engaged in shared activities, the dynamics of these activities enables a transparency through together being faced with similar affordances and solicitations. If immersed in an embodied interaction – such as washing dishes together – we do not have to ‘communicate’ in Luhmann’s terms, nor do we have to act in order to display our intentions (which, instead, would only happen if one of us behaves queerly). It is the sharedness of the situation itself, the shared solicitations, the shared directedness or intrinsic ‘intention’ of the activity that grant sufficient transparency, without requiring observational or communicative transparency between us. So, ‘double contingency’ (and its equivalent in similar theories of otherness) is not a general condition of communication, but only one condition among others.

It is on this point that I see the essence of the third pole in terms of the functioning of a mask too – and this is especially true for the mask of Arlecchino. Against this backdrop, we may begin to understand why affordances and solicitations (which are there to enable conditions of ‘following’) play the major role, and iconic features of the mask (which are there to ‘communicate’, conceal and display) do not. And, as seen above, the mask, indeed, appears to be designed for shared bodily interaction. It is complex and elaborate in its way of guiding body posture and movement, while in displaying an identity it is rather under-determined and simple.

In making this point, however, I have to face the historicity of *commedia dell’arte* acting practices. The directors and actors I have quoted so far are more or less my contemporaries – and both concepts and practices of acting have changed profoundly between the sixteenth and twenty-first centuries. So, despite the historical characteristics implied by contemporary theatre, it might appear an illegitimate move to try to make Bottini’s first-person account speak to sixteenth-century *commedia dell’arte* performances. The quoted reference, indeed, makes more sense against the backdrop of post-Stanislavski and post-Meyerhold acting practices that

focus on spontaneous and immersive bodily activity. These, however, are recent phenomena in acting. Broadly speaking, as recently as the end of the nineteenth century, the paradigm of acting was instead self-control over every aspect of bodily expression, in part working with a large preset repertory of gestures; an actor was still thought of as using the body as a tool for expression.

This older acting theory strongly influenced a phenomenological account of acting utterly different from my own. Helmuth Plessner's highly influential work 'Anthropology of an Actor', published in 1948, describes the paradoxical state of acting as displaying action for the observing gaze of others. Embodiment, for Plessner, is therefore a complex double issue. On the one hand, an actor *is* a body (he is situated and limited to his bodily functions), but on the other, he *has* a body (makes use of it, as if the body were not himself but rather a tool to command). So, while the situated body of the actor is centric (the actor is situated in a centric body surrounded by its environment), having and using a body leads to an 'excentric' state (the actor commands the body as if from outside its centre).

Method actors of today would probably call a similar approach an 'anthropology of a *bad* actor', an actor who *makes believe* rather than *does*. And it does not come as a surprise either that Plessner's phenomenology is equally different from Bottini's 'following' as it is from Gallagher and Zahavi's shared interaction. Indeed, in both shared interaction and Bottini's practice the embodiment is neither centric nor excentric. It is not centric, because the focus of a shared interaction is present where the action takes place, rather than in the place where the body is situated as such. But it isn't excentric either, because it is not about using one's body as a tool, but rather about immersed interaction or intercorporeal stage dynamics.

This does not mean, though, that Plessner's phenomenology is simply inadequate for acting and that applying Gallagher and Zahavi's theories to acting is better. It rather speaks to the fact that acting itself has changed. Since Plessner's phenomenology appears to be more suitable to describe the older techniques of acting, it seems that I have lost my case. Or rather that would be the case if this phenomenology of controlled and reflexive body use, which was first theorised in Denis Diderot's *Paradoxe sur le comédien*, written between 1773 and 1777, had been the paradigm in the sixteenth century too – and if the preparation of a dramatic script had been the practice of *commedia dell'arte* actors. But neither is the case. During the Renaissance, there was indeed a theory of acting that focused on controlled declamation. But this theory was not really a genuine theory of acting, but a rhetorical theory in the tradition of Cicero and Quintilian. If applied to acting, it was a purely humanist phenomenon, derived simply from a textual tradition. So it might have strongly influenced the performances of Renaissance tragedy and erudite comedy, or *commedia erudita*, which were performed by laymen, often trained in humanist studies, without contact with professional performances and their practices. But *commedia dell'arte* was not performed by humanists and it had no fixed script to which a theory of declamation could be applied.

A telling example is the earliest source of the Arlecchino mask, Tristano Martinelli's treatise on rhetoric. Martinelli was arguably the first to use the name

‘Arlecchino’ for the prominent role of the subaltern servant playing the main role in *commedia dell’arte* performances. His ‘treatise’, dedicated to Henri IV and Maria de’ Medici, consists of empty pages. The affront, however, does not seem directed against the French king and queen; rather, the jest clearly alludes to the fact that a *commediante*’s virtuosity lacked humanist training in rhetoric, thereby mocking humanist erudition. Even more telling are the examples of Pier Maria Cecchini’s *Discorso sopra l’arte comica*, Flaminio Scala’s *Prologo* for *Il finto marito* and Luigi Riccoboni’s *Dell’arte rappresentativa* and *Discorso sulla commedia all’improvvisa*,<sup>6</sup> which explicitly speak to how the virtuosity of the *commedianti* was aimed at spontaneity, situativity and shared affective stage dynamics, rather than declamation trained according to ancient rhetorics. A telling example of the extent to which the *commedianti* were aware of the difference between their own art and that of the declamation of rhetoric is an epitaph about Vincenza Armani (see Valerini 1991), which celebrates her ability to blush on stage at the right moment. Blushing is spontaneous – it cannot be controlled by an ‘excentric’ actor using the body as a tool, nor can it be studied in terms of declamation; and so it does not happen by chance that, at the end of the nineteenth century, Eleonora Duse, the most prominent precursor of Stanislavski and the Method Actors, was famous for the very same ability. Hence, in sixteenth-century Italy, rhetorical declamation was arguably the leading tradition of acting. But *commedia dell’arte* performance did not count as acting – and this allowed it to focus on an aesthetic that was more like Bottini’s practice.

But if *commedia dell’arte* did not count as acting, what was it? Let’s pose this question to the mask. Its tradition remains an open question for every scholar who limits their approach to a history of theatre. Masks had been used in antique dramatic performances, but whenever we find Renaissance comedies that stand in the antique tradition – and this is the case for the highly successful *commedia erudita* – the tradition is exclusively a literary one, mostly drawing upon the extant dramas of Plautus and Terence, and no masks are used. The rare occasions on which masks appear in passion plays do not make for a proper tradition either, especially as the masks used covered the whole face and were often focused on the iconic dimension, for example, to display a terrifying devil’s face. There is one related tradition of mask play, but it is not theatrical. Masks similar to those used in *commedia dell’arte* were worn on the streets during Carnival; and, more importantly, they were used by mountebanks (*saltimbanchi*). The use of masks speaks strongly to the fact that early *commedianti* – even though they were founding the tradition of professional acting – were proud to be regarded not as actors but rather as professional carneys reforming their art by reorganising it as theatrical performance (see Meehan 2015).

But how did the art of carneys and mountebanks relate to the art of *commedia*? Again, the function of the masks is telling. Mountebanks used masks to burst into banquets, not just to perform and expose their arts on stage. While drawing those

<sup>6</sup> For an overview see Vicentini 2012.

present into a playful and unpredictable praxis, they challenged the social order in a way similar to Carnival, which – not by chance – was another occasion on which related masks were used. Carnival masks and the masks used by mountebanks served as a distinguishing mark allowing people to act in such a way that, while held responsible for every act they were performing, they were at the same time set free from the obligation to act normally – that is, to embody their own social role. While a theatrical performance constitutes a full-blown reality on its own, Carnival and mountebanks worked on and within the reality at hand in a parasitic way. By altering everyday rituals, they did not so much question beliefs about social reality as open a space for activities that would have been impossible in normal life. Mountebanks did not perform a dramatic plot, but rather inserted inappropriate actions into the ritualistic script of a festivity as Carnival inserted inappropriate actions into the script of everyday social reality. The masks picked up by the *commedianti* were thus designed to do what was inappropriate and, furthermore, unforeseen.

What is unforeseen, however, can only be dealt with in terms of virtuosic improvisation – and virtuosic improvisation was indeed what *commedia dell'arte* was all about. In this sense, the most influential kind of theatre the West has known since Athenian tragedy should not be considered *part of* the Western dramatic tradition recovered by the humanists, but *a challenge to* it. This is evident from the way the *commedianti* treated the tradition. By adopting plots or plot structures and characters from the humanist dramatic tradition, they could join the arts together under the umbrella of a dramatic plot; nevertheless, they made sure that this plot followed the exigencies of their own non-theatrical art. The *canovacci*, the plot summaries posted behind the stage as narrative and timing cues for the actors, speak to this fact. The most frequent formula is ‘in questo’, meaning that whatever followed had to burst into the situation on stage as it had been described so far. *Canovacci* present situations in which usually at least four characters are on stage, each having different, mostly incorrect, information about the others. More conflicts are built through extremely unstable character coalitions, so that any of the *commedianti* could change sides within any given conflict on many occasions. The construction of a typical scene was there to provide as many unpredictable situations as possible in which to improvise – which, in turn, challenge rather than help the overreaching plot of the given piece.

This task recalls the art of mountebanks and affords the opportunity to show off those skills in a more elaborate manner. As with mountebanks, the performers were encouraged to disturb each other by playing out unexpected moves; this could take on the form of a cooperative production of chaos – like a free-jazz musician coaxing bandmates into a new direction by playing an unexpected note – but antagonistic disturbance was welcomed as well. We know not only of romantic comradeship in *commedia dell'arte* groups, but also of hostilities and enmities between individual members who would expose their fellows to unmanageable situations and thereby attempt to make them fail in the eyes of the audience. The *commedia dell'arte* stage was designed to bring the actors under the maximum productive

pressure of improvisation and was aimed at the actors displaying their own virtuosity and brilliance, rather than their representing characters.

This leads to a non-representational aesthetics of stage performance. As on today's opera stages, the audience was concerned not only with the actors staging *dramatis personae*, but also with how they went about executing their art. As in today's action movies, the dynamics of action, not the representation of characters, was the focus. As on today's football fields – where a midfielder is judged for what passes he enacts, and not what passes he stages – the act of coping with a given unpredictable situation counted at least as much as the representation of this situation. In the terms of the performance theorist Erika Fischer-Lichte (2010), what counted was first and foremost the actions of the phenomenal body of the actor, not the embodiment of a preset role.

Given this aesthetic, it is easy to infer that Arlecchino was counterbalanced by bodies oriented in a different manner. There was the rich merchant Pantalone, for example, wearing a mask dominated by his long nose, doubled as it were by his pointed beard, giving the face an upward direction even when looking down to the earth. As an orientation for the body, the nose and beard lead to a posture of greed and arrogance; both display a phallic form, prone to invite mockery of the lust-driven old man. Indeed, some Pantalone costumes were also equipped with a kind of dildo at the loins. The interplay of nose and beard with the facial expressions also helped the actor's body to expose an eager nose for business and oriented the body posture into the exposure of a lack of sincere cordiality or possibility of closeness; from dildo to nose, the whole body was equipped with repelling protrusions. As another example, Arlecchino also had to face the *Dottore* (the Scholar), with his vivid broad yet downward-driven nose, which would lead the facial expressions and body posture of the actor into tension, caught somewhere between a jovial wine-loving nature and the ridiculous version of melancholic erudition displayed in long and meaningless monologues. The full list is much longer, including the aggressive frown of the *Capitano* mask, the less challenging yet more cynical grotesqueness of *Brighella*, and so on. What is important in this context is that these masks were not aimed at the representation of social types, but rather helped in acting out social conflicts, by the simple equation of social habitus and body posture. They were not so much caricatures of single types or characters but rather specific roles or poles within an interactively shared embodied social dynamics.

If we take the design of these masks as a key phenomenon for understanding *commedia dell'arte*, the contrast to humanist theatre – especially to *commedia erudita* – is immediately apparent. In humanist drama, any action on stage, any minor subplot, was designed to be a recognisable part of the dramaturgic machinery. The whole focus of the plays was on what was represented and how this representation was structured. The characters, their motivations and inner attitudes, the represented plot and its inner causality, the literariness of the dialogues and their rhetoric – all of them followed a poetic plan. The lack of such constructedness, however, does not mean that *commedia dell'arte* was simply 'oral' poetry lacking literary erudition; as Robert Henke (2002) has shown, the opposite was true – the *commedianti* dis-

played an erudition often equalling that of humanists (though it was acquired in an autodidactic and not very systematic way). The difference, though, becomes clear when concretely describing the practices of the respective arts.

Take language as the most important example. Renaissance humanist poetry worked with the play on discrepant languages, dialogues and modes of speaking: one might think of macaronic language, metalinguistic plays in *commedia erudita* (Antonelli 1998), burlesque epics or Rabelais (Bakhtin 1941). But unlike humanists like Boccaccio, Boiardo, Ariosto or – indeed – Rabelais, who integrated storylines, jokes, styles of jesting and even discourses picked up from the oral tradition into their respective literary works, the *commedianti* used the literary tradition as one *oral* discourse among others.

This is of course true for the long sermons of the Dottore, whose literate erudition was countered by his Bolognese dialect as soon as it was displaced into oral speech, and whose tone of voice derived from the bodily habitus helped by the mask rather than from an acute humanist mind. But much more interesting is the interplay of the masked characters and the *Innamorati* (Lovers), who displayed their origin from the humanist stage not only in that they wore no masks, but also in that they spoke the ‘humanist dialect’, a kind of Tuscan reserved for written communication. This practice leads back to the *Questione della Lingua*, the question of which vernacular Italian should be used to match the nobility Latin held for written language. *Commedia dell’arte*, in close contact with these discussions, turned the linguistic play around by transferring it into the inherently limited oral context.<sup>7</sup> By displacing a Petrarchist discourse of love into orality, the *Innamorati* performance deconstructed the humanist purpose of creating a sublime form of textual loving. And by facing the conflict of the Lovers with the masked characters in *commedia dell’arte*, the Petrarchist style tended to display its limitations in a broader social context.

The integration of the humanist ‘literalects’ into orality also allowed the *commedianti* to play out the intrinsic agonistic tonality of oral literature (Ong 1991: 43–6) and to stage the struggle between oral and literary cultures under the auspices of spoken rather than written language. There are, for example, some extant dialogues by Isabella Andreini ([1616] 1957), written down by her husband after her death, that strongly echo the humanist genre. These dialogues take the shape of *contrasti*, that is, antagonistic argumentation, which are familiar from the humanist philosopho-poetic discourse. But *commedia dell’arte contrasti* work in a completely different way. They do not just challenge one argument with another, but rather challenge the whole discourse of the *contrasti* by playing out the virtuosity of momentary argumentation against the art of causally ordered thought which the humanists aimed at. In *commedia dell’arte* dialogues, there is no overarching dialectic line of argumentation; instead, the same contrasting arguments are repeated in different yet rhetorically elaborated ways, over and over again – until one interlocutor suddenly makes a completely unpredictable move, transforming the whole situation. It is easy to infer that something similar was happening on stage too. Indeed, this

<sup>7</sup> See Fitzpatrick 1995 and Henke 2002, 2015.



form of argumentation does not make much sense in reading, but the structure makes a lot of sense if a *contrasto* is considered in terms of a performed competition. As in blitz chess, you make many routine moves to test the waters until you finally see an opportunity for striking – which in turn will change the situation as a whole. Unlike in humanist literary discourses, language does not so much become meaningful in terms of what is said and how it is said, but rather in terms of what happens if it is said.

At this point it becomes easy to understand that *commedia dell'arte* masks played a role in a much broader spectrum of Renaissance culture. The adaptation of humanist dramatic plots, characters, poetic styles, discourses and arguments involved a Renaissance-style imitative praxis – but the *commedianti* used this praxis in quite a different way from the humanists. Antique authorities and contemporary poets were not imitated as a means to inscribe oneself into a settled textual continuum by which to be honoured. Nor was the imitative challenge about surpassing the precursors while pushing the limits of the genre from inside. The *commedianti* instead worked from outside the literary tradition, and their imitation was meant to challenge this tradition as a whole. In doing so, their weapon was a profound virtuosity that outmatched humanist poets. Their speed of improvisation and their embodied presence countered humanist pride in the effectiveness of their language use; from early on, a joyous pride in being superior to all the humanist authorities is present, from the first documented source of *commedia dell'arte* onwards. An epitaph for one of the very first *commedianti*, the *lacrimoso lamento che fè Zan Salcizza e Zan Capella invitando tutti i Filosofi, Poeti, e tutti i Fachì delle valade, a pianzer la morte di Zan Panza de Pegora, alias Simon Comico Geloso*,<sup>8</sup> plays out a parody of the humanist authorities as mere servants for the art of the *commedianti*, while the style cleverly plays on an ambiguity between self-irony and uncontested pride.

Against this backdrop, *commedia dell'arte* can help us to develop a broader view on some core assumptions about the Italian Renaissance, since this epoch has so far mostly been treated as a humanist culture. It might offer a complementary view on branches of Renaissance studies, such as those grounded on the newly acquired 'heroic' human self-consciousness (Michelet 1855), the birth of modern subjectivity (Burckhardt [1860] 1960), the rise of subject/object dualism (Cassirer [1926] 2013) and subjective experience (e.g. Zintzen 2002; Stierle 2004). Or it might offer a complementary view on other branches of Renaissance studies, such as the formation of a 'Republic of Letters' (e.g. Celenza 2004 or Grafton 2009) and its struggles with the tradition of Greco-Roman Antiquity in literature (Kristeller 1980) and philosophy (Garin 1993), along with the imitative and emulative practices of writing and the productive competition of outmatching antique authors and other humanists (Kablitiz and Regn 2006). *Commedia dell'arte* provides a complementary view on atomism (Greenblatt 2011), nominalist scepticism (Küpper 1993), epis-

<sup>8</sup> 'The tearful lament made by Zan Salcizza and Zan Capella, inviting all the philosophers, poets and all the porters from the valleys to weep for the death of Zan Panza di Pegora, alias Simon, actor with the Gelosi.'

temic secularism (Blumenberg 1966) or pluri-perspectivism and discursive discrepancy (Hempfer 1993), and, last but not least, on the rise of a notion of autonomous aesthetics and the notion of art as we know it (Belting 1990).

We have seen that *commedia dell'arte* focused on a sense of agency rather than a sense of identity, on the enactive self rather than self-fashioning. In doing so, it offers a striking complement to Renaissance theories of subjectivity and theories of consciousness as perspectivism and as some kind of 'Cartesian theatre' – an ego's projections upon the outer world. *Commedia dell'arte*, instead, presents a non-reflexive self-in-action, playing out its embodied skills rather than epistemic perspectivism. Accordingly, the plurality of discourses is not enacted as an epistemological scepticism, atomism or nominalism, or any other founding epistemologies enhancing subjective perspectivism; rather, it produces chaotic situations inside which improvisation had to prove its virtuosity. Indeed, while Renaissance humanism promoted what can be called an *epistemologisation* of culture: a reduction of the approaches towards the world to knowledge production – replacing participation with subjective observation and reflection, religious rituals with Protestant reading experience and sensual experience with experimentation – *commedia dell'arte* counterbalanced this endeavour by a focus on skills, attitudes and habits, promoting what can be called an enactive approach to the world. Their virtuosity was judged by the effects it had on the dynamic of the action rather than by its epistemological qualities. In this, *commedia dell'arte* points at two issues about the Renaissance that take us beyond the focus on humanism. First, it shows that the specific aesthetic culture of the Italian Renaissance did not only consist in a kind of self-reflexive autonomy of both the subject and the work of art, respectively bringing forth their own 'reality'. Second, it reveals that skills and attitudes, as an important aspect of the Renaissance epoch, did not simply co-evolve with the epistemic and technological changes of humanist culture, but were at the same time autonomous agents in sociocultural change.

It is clear that the transformation of cultures of embodiment was an important issue for the humanist intellectual culture as well; indeed, humanists knew that training in skills and attitudes was essential to the culture – as apparent in the case of Leon Battista Alberti and the Renaissance *uomo universale* (see Grafton 2000), as well as Baldassare Castiglione's *Libro del cortegiano*. For example, Castiglione was very sensitive to the fact that fencing, as a major feature of a man of court, could not be learned from a book but rather required training from body to body, and he was concerned with the equal importance for a nobleman of emotional and bodily attitudes as well as epistemic erudition. However, *commedia dell'arte* went even further than this. The *commedianti* played out embodiment *against* the humanist focus on written culture, and even against humanist assumptions about subjectivity. So, when focusing on *commedia dell'arte*, it is apparent that the embodied and enactive side of a culture is not necessarily a harmonic complement to its knowledge production, but a partially independent aspect of human cultural existence.

At first glance, this insight might not seem as puzzling as it actually is, since it can easily be underestimated. How, indeed, in a given culture, should the fundamentals

of knowledge be challenged by anything but habits and virtuosity? I will try to answer this question by giving an example, and this brings me back to a – perhaps even *the* – fundamental problem of Renaissance epistemology, namely contingency and *fortuna*.

As discussed, the whole stage situation of a *commedia dell'arte* performance was aimed at the production of contingency. It is here that the masks worked best, serving an aesthetic of improvisation. Improvisation within a set of contingencies, however, can be understood as a unique and highly powerful self-staging of a culture that had discovered contingency and fortune – rather than providence – as the leading forces on earth. Humanist literature reflected this understanding too – but it did so in narrative structures in which unpredictable chance was integrated, and ruptures, rather than causal chains of events, could dominate narrations. For example, this is evident in the seminal function of the ‘avvenne che’ formula used in Boccaccio’s *Decameron* (Neuschäfer 1969), which can be understood as an equivalent to the ‘in questo’ formula of the *canovacci*. The leading principle, however, was the representation of chance within the boundaries of literary fiction – not the production of chance on stage.

Dramatic theory best explains what the fictional representation of chance could be about. Since the translation of Aristotle’s *Poetics*, Renaissance humanists believed that the aim of playwrights was to construct a represented reality, which had to share some of the principles at work in the real world. These principles would give a drama its probability and this probability, in turn, would allow for fathoming out possibilities in the real world, by playing them through in fictional realities. Drama opened up a space for pondering on the possible. However, Renaissance culture considered itself faced with the unpredictable: it was centred around the notion of fortune rather than providence, and contingency rather than stable truths. Thus, it is evident that this Aristotelian concept of fictionality had been translated into its own crisis. Where chance rules the world, principle-based probability cannot work all that well.

*Commedia dell'arte* offered a completely different relation to the possible – one that is quite opposed to probability. Its focus on virtuosity that had to prove itself in the midst of produced contingency neither ponders on the possible nor intellectually structures it, as an Aristotelian drama would; it rather pushes the limits of the possible. By summoning contingent situations and staging the spectacle of skills, the *commedianti* aimed at realising the most improbable forms interacting bodies can achieve – which is exactly what an aesthetics of acrobats and mountebanks could add to the history of theatre. While the Aristotelian *Poetics* can only consider the representation or mimesis of action, *commedia dell'arte* pushed the limits of the possible in a funfair manner; it aimed at presenting the incredible itself. If the causally organised plot – the place where Aristotelian fiction as mental modelling of the possible took place – is downgraded to a feature that merely enables the unexpected to come about, then it instead becomes a frame that displays the miraculous emergence of what is possible for a human being. Skill rather than knowledge, virtuosity rather than epistemology, the doable rather than the thinkable, the ena-

bling of actions rather than the contemplation of actions, becomes the arena for handling contingency and chance.

Such an aesthetic reflects the premature Italian form Ulrich Beck has described as 'Risikogesellschaft' – a society continuously producing and managing risks. But it does so not by mentally modelling but by elegantly handling contingency, which leads to a notion of figuring the possible that can be considered yet another counter-humanist move.<sup>9</sup> It is in a similar way that, instead of handling the possible by mental reflection, the *commedianti* pointed at handling the possible by fathoming out the limits of what humans can possibly do.

The results of this view on the Renaissance can be brought together in a bold comparison of Arlecchino with an equally important unmasked stage character of his times: the well-studied humanist Hamlet. Both characters reflect the theatrical crisis of the Aristotelian dramatic fiction in the face of chance and contingency, yet, when faced with fortune, respond in quite opposite ways. Hamlet ponders on what is possible so far as even to represent it on a stage within the stage; Arlecchino skilfully acts in a state of continuous precariousness without any understanding whatsoever. Hamlet is famous for his subjective struggles and his incoherent inner life; Arlecchino does not appear to even know what interiority is. Hamlet remains stuck in formless pondering about plural forms of seeming and being; Arlecchino continuously creates and at the same time faces chaos, counterbalancing it with the emergence of a form of action. For Hamlet, Renaissance contingency translates into the epistemological impasses of questioning reality's unstableness and carrying out a conflict between invention and existence, searching for a secure ground of action; for Arlecchino, the same problem translates into an enactive praxis in which the unstable reality is not important as such, but only insofar as it permits or forbids certain actions. Hamlet's attitude produces open questions and plural views, entailing too many possibilities and turning them into an impossible orientation for action; Arlecchino's answer is the virtuous enablement of action under the condition of seeming impossibility – and if we accept this answer as such, it is skilful enaction that answers the fundamental problem around which many forms of Renaissance culture were organised.

I wish to conclude with some methodological remarks. Discussing the Renaissance in terms of situated cognition – as is one of the aims of this volume – entails a challenge to more traditional approaches. In my chapter I have sought to meet this challenge by making broad, yet so far mostly implicit, use of enactivist theorems – focusing on the so-called '4E phenomena' that are (environmentally) embedded, (skilfully) embodied, (transcorporeally) extended and, most of all, enacted cognition. Accordingly, I have described the Arlecchino mask as embedded in virtuous embodied activities, with these embodied activities not just as executed by monadic selves, but as a shared kind of interaction that constitutes an *extended* stage dynamics. I have thus been led to the assumption that the Arlecchino

<sup>9</sup> For a parallel approach, describing bodily performance in sports as reflection of current society, see Alkemeyer 2012.

mask can only be understood properly when viewed from the point of view of its enactment.

My endorsement of enactivist theory, however, does not mean that gaining an enactive view on Renaissance culture is as simple as ‘applying’ current philosophical claims to the historical phenomena. Rather, I think that two different, and more complex, approaches are possible. On the one hand, it is important to understand what Renaissance philosophy and poetry itself had to say about embedded, embodied, extended and enacted phenomena. Here it can be shown that the most important features of enactivist theory do have Renaissance precursors<sup>10</sup> and as to this approach I am strongly convinced of Miranda Anderson’s view that similar ‘philosophical notions are simply the most recent manifestation of an enduring paradigm that reflects the non-trivial participation of the body and world in cognition’ (Anderson 2015b: xi). On the other hand, it is very clear that a historical view on knowledge and philosophy alone cannot be sufficient for approaching historical 4E phenomena, because these are, indeed, phenomena of enacting – and, as such, they have not necessarily made their way into intellectual reflection at all. They must have made their way into practices though.

The approach of this chapter was to try the second option. And this is why I have pursued a bottom-up approach and described historic practices, rather than knowledge reflecting historic 4E phenomena. In doing so, in addition to the enactivist premises, I have embraced both ‘pragmatist’ and ‘praxeological’ core assumptions. A simple consideration of the ancient Greek word *pragma* clarifies this: unlike its common Latin translation as *res* (thing or object), *pragma* is a dynamic notion focused on activities.<sup>11</sup> Hence, while *res* translates into the philosophical concept of *realitas* (reality in terms of being the universality of objects), *pragma* translates into the philosophical concept of *praxis* (the interplay of actions and activities); thus, a ‘reality’ is brought forth by bringing things into existence, whereas a *praxis* is brought forth by doing things.

I consider it to be one shortcoming of most theories of performance that they neglect the difference between doing things (enacting a *praxis*) and bringing things into existence (constituting a reality). Rather, they focus on performance as construction of reality, which in my view implies a kind of category mistake. The term ‘reality’ implies an observational stance – a stance asking about what things are, how they exist, how they come into existence and so on – whereas enacting and performing imply an embedded and participatory stance – a stance not asking at all about what things are and thereby constituting a *praxis* rather than a reality. When omitting the problematic formula of performance as reality construction, it is still possible to view practices as involved in the social production of realities – which, however, are not about doing things but about bringing things into existence. A similar reality construction is more akin to knowledge production – and thus it makes perfect sense that an abundant number of studies investigate how think-

<sup>10</sup> See Schneider 2013; Söffner 2014b; Anderson 2015b.

<sup>11</sup> I very much thank Gerogi Kapriev for this thought.

ing practices, discursive practices, epistemic practices, scientific practices, media practices, ritualistic practices are involved in the constitution of respective realities. This quest for realities, however, forces the research into viewing these practices as nothing but an instrument for bringing things into existence, and thereby neglects examining practices and enactions in their own right – that is, beyond the question of whether or not they constitute a reality.

In this chapter I have described humanism as a precursor of a similar approach, and played it out against *commedia dell'arte*, which was focused on practices rather than realities. As such, the art required skill rather than knowledge, sometimes even using knowledge only as a means for skill – as in everyday life is especially the case in training situations. Indeed, in *commedia dell'arte* the 'humanist' plot played a serving role, enabling skilful improvisation to take place – just as the subaltern characters, the servants like Arlecchino, were the most important characters on a *commedia dell'arte* stage. In addition, rather than being concerned with subjectivity and identity, it focused on habitus, affective attitudes, modes of distributed cognition, and bodily interaction and its phenomenology. My aim was to approach Renaissance Italy as an interplay of learned and enacted practices without making the step towards a description of realities; I hope that my chapter has shown how important it sometimes is to suspend reality and stick with practice.

In this (more humble) approach, I have made abundant use of several branches within the field of cultural studies. My proposed methodology displays a close affinity with performance studies. However, performance studies are focused on the question of how performative acts constitute realities. John Langshaw Austin in linguistics, Judith Butler in gender theory and Erika Fischer-Lichte in theatre studies all seem to sense an obligation to translate praxis into reality construction to make them acquire cultural valence – and I think that in doing so, they sometimes unnecessarily downplay their own specific insights. I have also borrowed from approaches to material culture. However, in doing so, I have maintained the enactivist hypothesis that cultural meaning is first and foremost something to be enacted rather than just signified, ascribed, encoded or rendered transparent as content. My focus was not so much the semiotic dimension of objects, but rather the subliminal and manifest ways of bodily enaction which objects require to become part of a praxis.

Accordingly, I have not viewed the mask of Arlecchino as an object (a *res*), but have considered it as an object-in-action (a *pragma*). Indeed, I would like to argue that a mask becomes such not by dint of being shaped in a certain way, but rather by offering an affordance or solicitation to bodily (inter)action with it in a particular way. The mask of Arlecchino is not just shaped leather; it is also a solicitation and an orientation of behaviour – and an orientation of the action of perceiving it – because, from an enactivist point of view, perception is a learned embodied activity (see Noë 2004). Finally, pondering on the Arlecchino mask in terms of a 'pact' has also led me to draw on theories about agency, picking up single thoughts from Bruno Latour and Actor-Network Theory. Yet my focus on skill and training goes beyond the constructivist implications of this theory, and

rather implicates a focus on presence (Gumbrecht 2003) which is alien to similar approaches.

Given this account, my approach still offers one major methodological problem. Describing the mask as a *pragma* means focusing on learned ways of coping with it, and this leads to the problem that skills and attitudes are not very well stored in historical ‘sources’. Most of the virtuosity present in *commedia dell’arte* was learned in a kind of body-to-body apprenticeship within the practical context of particular kinds of shared interaction (mostly stage dynamics). The skills and attitudes of a comedian were not and could not be written down; nor can they be retrieved from texts or material objects. They represented an implicit kind of knowing (see Polanyi 1974), and the impossibility of writing skills down displayed the biggest challenge for the *commedianti* with regard to the humanist republic of letters. At the same time, I have the impression that similar problems are the most important reason why enactivist approaches have become quite successful when it comes to phenomena of the present, which can be backed up by all kinds of empirical research from experimental psychology, the computational sciences and the neurosciences – but have not yet gained the importance they deserve when it comes to historical figurations, which appear to lack this empirical dimension.

To address this shortcoming, I have proposed an ‘enactivist’ account that also went ‘enactive’ – embracing experimental kinds of acting things out today rather than just analytical observation of historical facts; indeed, this is why I have used the term ‘enactive’ rather than simply ‘enactivist’ in my title (see Klemm et al. 2011). As in experimental archaeology, insights gained from historical analysis can be backed up with historically sound kinds of re-enactments and the acquisition of historical skills. In my chapter, this was possible because the Arlecchino mask was not only involved in Renaissance plays, but is also used in current-day *commedia dell’arte* performances. Therefore, I could use first-person accounts from two actors. My approach would have profited greatly from a close exchange with more actors leading to a more ‘experimental’ kind of performance, which could do more justice to historical skills and practices – but this would also have required a kind of funding that I did not have at hand. However, I think of this chapter as a first step in a promising direction.

## Thinking with the Hand: The Practice of Drawing in Renaissance Italy

*Cynthia Houng*

Around 1595, about thirty years after his brother Taddeo's death, the Roman artist Federico Zuccaro (c. 1541–1609) illustrated Taddeo's early life in sixteen drawings. The drawings begin with Taddeo's decision to leave the Zuccaro family home for Rome (Plate 4), and end with the young man's first commission (Plate 5). To convey his irrepressible desire to become an artist, Federico depicts Taddeo engaged in the act of drawing. Drawing had come to stand for artistic practice. To draw was to be an artist.

Federico Zuccaro's drawings were made about two centuries after Cennino Cennini wrote his treatise *Il libro della arte* (*The Book of Art*, c. 1390). By the Zuccaro brothers' time, the sort of active, exploratory drawing that Cennino prescribed in *Il libro* had become integral to the artist's habitus. Cennino advised young artists to 'make a pocket of sheets of paper glued together, or of light wood, square shaped, large enough to hold a *foglio reale* (royal sheet) . . . and also serve for a desk to draw on' so that they could practise drawing 'in churches or chapels' or 'from nature' ('Abbiti una tasca latta di fogli incollati, o pur di legname, leggiera, fatta per ogni quadro, tanto vi metta un foglio reale, cioè mezzo: e questa t'è buona per tenervi i tua disegni, ed eziandio per potervi tenere su il foglio da disegnare').<sup>1</sup> This constant drawing practice was the most important aspect of an artist's education. 'Continue always and without fail', he admonished his readers, 'to draw something every day' ('Continuando ogni di non manchi disegnare qualche cosa').<sup>2</sup> Federico's narrative of Taddeo's life underscores the centrality of drawing in Renaissance Italian artistic practice. Federico depicts Taddeo engaged, not in the creation of polished works of drawing, but in making the sort of exploratory drawing we might call sketches or studies, that Cennino placed at the centre of artistic practice. In these drawings, Federico catches Taddeo in the act of thinking with the hand.

In this chapter, I argue that the rise of this mode of drawing represents more than a shift in artistic or workshop practice (Ames-Lewis 1981b; Ames-Lewis and Wright 1983; Bambach 1999). It also marks a metamorphosis in the relationship

<sup>1</sup> Cennini 1821: 22–3; 1922: 23–4.

<sup>2</sup> Cennini 1821: 22; 1922: 23.



between cognition and the act of drawing itself. At the end of the fourteenth century – around the time when Cennino Cennini wrote his famous treatise – there are already hints that artists considered drawing a form of embodied thinking. The idea of ‘thinking with the hand’ dates back to classical antiquity. Aristotle called the hand ‘the instrument of instruments’ (Kemp 2000: 22). As Martin Kemp has noted, ‘[Aristotle’s] *Problemata* [described] the hand and the intellect as the two “inner instruments with which we use outer instruments”’ (Kemp 2000: 22). This concept of the hand as being both a tool and a mode of thought remained a standard trope in medieval and Renaissance thought. It also provided a philosophical basis for the integration of the artist’s tools with the artist’s body in Renaissance literature on artistic practice. Modern neuroscientific research approaches the same relationship – of body and tool – from a different angle. Recent studies reveal that both brain and body are startlingly plastic, and this plasticity is not necessarily unique to humans. Experiments conducted on primates – including the famous ‘monkey and rake’ experiment (Iriki et al. 1996) – demonstrated that tool use modified the primates’ body schema on both a physical level (all the way down to changes in the monkeys’ neurons) and a representational one (Martel et al. 1996: 83). The acquisition of expertise in a field, especially expertise in physical, craft-oriented skills such as dance, art or sports, induces changes from a cellular level all the way up to the expert’s own conscious mental imagery or self representation (Brown et al. 2006: 1165). In an expert, these changes in self representation can shift back and forth so quickly – with the addition or removal of a pointe shoe, for example – as to seem completely seamless (Bellan et al. 2017: 28). Where is the locus of expertise? Is it located in brain, body or tool – or does the performance of expertise only become possible when the entire complex is activated? Neither modern nor Renaissance models offer a definitive answer. Studies of ballet dancers’ proprioception and self representation suggest that expert dancers also integrate ‘representations of space’ with ‘representations of the body’ (Bellan et al. 2017: 28–9). In his burlesque poem ‘On the Brush’ (‘Del pennello’, 1538), Agnolo Bronzino (1503–72) plays with the metaphor of the brush as a literal part of the artist’s body, with the *pennello*, or brush, standing in for the male artist’s penis (Quiviger 2003; Talvacchia 2011). Creation, like procreation, stems from the body, but like dance, the work of painting only springs into existence when the body engages, or interfaces, with the external world.

Drawing is one of Andy Clark’s key examples of ‘scaffolded thinking’, where ‘biological pattern associating systems [combine] with various environmental props, aids, and scaffoldings’ to expand the available cognitive resources and enable the biological brain to do things that it would otherwise ‘find hard, time consuming, or even impossible’ (Clark 2003: 75). In scaffolded thinking, the biological brain, non-neural bodily resources (such as fingers and arms) and external, environmental resources are integrated into one cognitive system. Clark argues that humans are ‘natural-born cyborgs’, with the innate capacity to integrate all of these forms of scaffolding (Clark 2003: 5–6). Renaissance drawing practices appear to conform with Clark’s model of scaffolded thinking. *Disegno*, for Renaissance artists and

art theorists alike, meant both design and drawing, concept and practice. It was both intellectual and physical. Federico Zuccaro, writing in the sixteenth century, described these two parts of drawing as '*disegno interno*' and '*disegno esterno*' – each essential to the other and perceived as parts of the same process, whether inside or outside the head (qtd in Bambach 1999: 16). Neither Bronzino nor Zuccaro – nor any of their contemporaries – would have conceived of their practice in Clark's terms, which belong to the realm of modern cognitive science and philosophy of mind. Yet Renaissance descriptions of artistic practice seem to dovetail nicely with modern theories of cognition, especially with those that argue for the concept of the extended mind and for cognitive integration (Clark and Chalmers 1998; Clark 2003; Menary 2010a). However, these Renaissance models were written under a very different epistemological framework than our own. While broad analogies can be drawn between Renaissance models of artistic practice and embodiment and our twenty-first-century theories of cognition and the mind, one must respect the boundaries of the historical evidence. We cannot claim direct knowledge of the experience of subjectivity, as it was known to them, nor can we reconstruct with any degree of certainty how they inhabited the body or experienced being a subject. All we have are the traces of past historical practices – of drawing, of art making – and a set of texts that were composed and constructed in a radically different historical context. Nevertheless, Renaissance models of artistic practice share significant aspects with our contemporary ones, such as a concern with the embodied nature of artistic practice and an interest in the materiality of these practices of making.

Young artists learned to draw by copying nature, antiquity and the modern masters. Along the way, they learned new languages of representation. As part of their workshop training, apprentices learned to embody the master's hand. The challenge was to take on the workshop's particular cognitive style without losing themselves. A good artist could take on other cognitive styles without losing his own sense of being, without dissolving fully into that other mode.

Drawing was not a purely private practice, for drawing, like writing, carried an intersubjective valence. Renaissance artists seldom worked in isolation. The practice of drawing was both highly personal and intensely social. Drawing served as a means of communication both between workshop members and with those outside of the workshop structure, such as clients, patrons and contractors. For example, contract drawings were used to convey the plan and concept of the work to the patron. They also fixed the terms of the commission. Like a written contract, the contract drawing was legally binding. Drawing was not only a means of thinking through, or thinking with, the hand. It was also a way of thinking *between* hands, as drawings passed back and forth, acquiring annotations, corrections, erasures, comments and edits.

## Drawing as Exploration

By the end of the sixteenth century, it was neither new nor revolutionary to emphasise drawing as *the* central act of artistic practice. Scholars generally agree that the popularisation of paper in the fifteenth century helped facilitate a transition from a more static and formal approach to the active and exploratory mode of drawing associated with the sketch (Ames-Lewis 1981b; Bambach 1997; Holcomb 2009). Although medieval artists made exploratory sketches or studies, these were seldom saved. The idea that the exploration itself might be of value and that traces of that exploration should be kept did not become widespread until the fourteenth century. By the end of the fourteenth century, however, the sketchbook had become a standard part of the artist's toolkit.

In the mid-sixteenth century, when Giorgio Vasari (1511–74) wrote *The Lives of the Artists* (*Le vite de' più eccellenti architetti, pittori, et scultori italiani, da Cimabue insino a' tempi nostri*), the idea that the medieval model of drawing had been supplanted, sometime in the fifteenth century, by a more personal and intense approach – one that embodied the humanist ideals of genius and creativity – was a commonplace in the literature on art. For Vasari's generation, drawing was more than a technical skill. It was an expression of the artist's spirit and character. According to Vasari, each artist has a natural style. When Raphael attempted to emulate Michelangelo's style, he 'lost some of his fine reputation'.<sup>3</sup> Thus, Vasari cautioned his readers:

Everyone should be content to do what he feels is natural to him and should never, merely to emulate others, want to try his hand at something for which he has no natural gift; otherwise he will labour in vain, and often to his own shame and loss.

Aggiugnerò ancor questo: che doverebbe ciascuno contentarsi di fare volentieri quelle cose alle quali si sente da naturale istinto inclinato e non volere por mano, per gareggiare, a quello che non gli vien dato dalla natura, per non faticare invano e spesso con vergogna e danno.<sup>4</sup>

For Vasari, the sweetness of Raphael's draughtsmanship reflects the sweetness of his nature, while Michelangelo's drawings are not only testaments to the power and perfection of the artist's imagination, they are also evidence of his heroic struggle to give form to thought, to bring forth and embody the world of the imagination. Of Michelangelo, Vasari wrote, 'His imagination was so powerful and perfect that he often discarded work in which his hands found it impossible to express his tremendous and awesome ideas; indeed, he has often destroyed his work' ('Ha

<sup>3</sup> Vasari 1965: 318.

<sup>4</sup> Vasari 1987b: V. 208; 1965: 319. Most of the introduction to the *Vite* was written in 1550, but when Vasari revised the *Vite* in 1568, he added certain passages, some of which are included here; therefore references to the *Vite* are identified either as 1550 (1987a) or 1568 (1987b).

avuto l'immaginativa tale e sì perfetta, che le cose propostosi nella idea sono state tali che con le mani, per non potere esprimere sì grandi e terribili concetti, ha spesso abbandonato l'opere sue, anzi ne à guasto molte'.<sup>5</sup> No longer about forming 'proper' and 'correct' habits, as described by Cennino, drawing had become valuable as the trace of the artist's thought, something 'thrown off' ('schizzando') by the artist in his creative fury ('E per che questi dal furor dello artefice sono in poco tempo espressi, universalmente son detti schizzi, perché vengono schizzando o con la penna o con altro disegnatario o carbone, in maniera che questi non servono se non per tentare l'animo di quel che gli sovviene').<sup>6</sup> Drawing had been considered a practical tool, part of the artist's working process, but in the fifteenth and sixteenth centuries, drawings were increasingly seen as authentic traces of the artist's genius. An artist's archives were more than repositories of motifs and compositions to be used and reused by his workshop. They now also represented moments of direct access to the artist's psyche.<sup>7</sup> Like sparks thrown off by the sun, they still retained something of the sun's own fire.

By the mid-fifteenth century, artists had come to expect a rich, image-dense personal world. This world was made possible, in part, by access to paper, as a cheap and easily accessible drawing support. Paper facilitated the development of new drawing practices. Alva Noë (2015: 19) argues that 'technologies organize us; properly understood, they are evolving patterns of organization'. Paper's role in catalysing new practices of drawing underscores Noë's argument: shifts in technology can precipitate new cognitive patterns.

As a tactile surface, and as a drawing support, paper offered something quite different from other available materials. Paper's surface was rougher and more textured than parchment or vellum. This texture, known as the 'tooth', made paper especially compatible with chalk. Paper's soft fibres absorbed dry pigment with ease, so artists could produce richly pigmented fields of colour by smudging, rubbing or stumping red or black chalk into the paper surface. While chalk had been widely used before this time as a medium for underdrawings, during the fifteenth century artists became interested in chalk as an autonomous medium.

Chalk and paper encouraged artists to employ a tactile approach to drawing. Drawing with chalk was as much about the touch, or feel, of paper beneath the hand as it was about the work's optical qualities. In this way, chalk drawing echoed the practice of creating *bozzetti*, or sketch models, for sculptures out of wax or clay. Drawing with chalk was like modelling in clay: the artist directly modelled form out of a plastic medium with his bare hands. Chalk also encouraged artists to physically engage the paper surface with the fingers, to use the fingers' soft pads to massage chalk pigment into paper fibres. To draw a face or a figure, the artist moved his hand across paper, in an echo of how that same hand might move across the face or the body.

<sup>5</sup> Vasari 1987b: VI. 108; 1965: 418–19.

<sup>6</sup> Vasari 1987b: I. 117; 1960: 212.

<sup>7</sup> Vasari 1987a: I. 117; 1960: 212.

Chalk and paper presented the artist with new tools and new physical experiences. Michael Wheeler (2018: 241) argues that external resources, like chalk and paper, can be considered ‘partners’ in the creative process, part of a series of dynamic relationships between external resources and ‘the artist’s internal psychological processing’. These dynamic feedback loops change the artist’s range of creative possibilities. Borrowing from Susan Hurley, we might think of chalk and paper as both introducing new dynamic patterns into the fifteenth-century artist’s world and disrupting old ones. Hurley described these changes as non-linear, multimodal and multidimensional. According to Hurley (2010: 121), ‘Relationships among multiple divisions . . . develop across time, as various modalities of sensory input and simulated feedback are followed by motor output with consequences that bounce off various features of the environment and generate multimodal feedback.’

New technologies do not change or transform sight, in the sense that they do not change or transform the biological foundations of sight. Yet, they provide new possibilities for representation. Framed in Noë’s terms, the paired technologies of paper and chalk reorganised the artist’s cognition, by offering new forms for shaping perception into representation. Chalk and paper offered artists a set of powerful and flexible tools for the exploration of volume, form and light. The cheapness of paper also encouraged the artist to explore and experiment (Ames-Lewis 1981b; Déroche 2005). The act of drawing not only became more exploratory and experimental in formal terms, it also reoriented the practice of drawing towards a greater intimacy with the artist’s body, so that the act of drawing could potentially be more expressive and personal. As Hurley (2010: 121) notes, ‘Dynamic patterns are often multimodal as well as extended.’ Drawings are the only traces we have left of these multimodal, multidimensional shifts in perception and experience. As yet, we have no way of accounting for the texture and quality of these changes, and how they precipitated the formation of new cognitive practices.

## The Look of Thought

Modern audiences expect thought to look a certain way. For us, the sketch exemplifies thought. In just a few moments, out of the artist’s fury, the sketch is born. Vasari defined the sketch in these terms:

Sketches . . . are in artists’ language a sort of first drawing made to find out the manner of the pose, and the first composition of the work. They are made in the form of a blotch [*mac[è]hia*] and are put down by us only as a rough draft of the whole. Out of the artist’s impetuous mood they are hastily thrown off, with pen or other drawing instrument or with charcoal, only to test the spirit [*animo*] of that which occurs to him, and for this reason we call them sketches.

Gli schizzi chiamiamo noi una prima sorte di disegni che si fanno per trovare il modo delle attitudini et il primo componimento dell’opra, e sono fatti in forma di una ma[c]chia, accennati solamente da noi in una sola bozza del tutto. E per

che questi dal furor dello artefice sono in poco tempo espressi, universalmente son detti schizzi, perché vengono schizzando o con la penna o con altro disegna-toio o carbone, in maniera che questi non servono se non per tentare l'animo di quel che gli sovviene.<sup>8</sup>

'Free', 'rapid', 'loose' – these words describe the look of the sketch, but they also describe the storm of thought that brought it into being. In this type of drawing, thinking and drawing seem united, one and the same. Rough sketches, like Leonardo's frenetic drawings, look the way that we think thoughts should look. But thought need not look like that – not all thoughts (or cognitive processes) are frenzied and furious. Thought can be slow and measured, and a cumulative process. Drawing serves a diverse range of cognitive needs. The look of a thought depends on the reason and purpose behind the thought process, on why the artist chose to embark on this cognitive process. Yet, due to our aesthetic biases, we perceive the rough sketch, and not the careful composed drawing, as the truest and most direct trace of the artist's thoughts.

This bias is embedded in our descriptive language. Certain drawings are free, rapid and loose, while others are constrained, careful and precise. But thought has many modes. This language reveals more about modern conceptions of creativity and the nature of genius than it does about the purpose of each mode of drawing or the reasoning behind the artist's choice of approach. The drawing as a storm of thought represents just one possible mode out of many.

For fifteenth-century artists, as Vasari noted, design is 'not other than a visible expression and declaration of our inner conception and of that which others have imagined and given form to in their idea' ('che esso disegno altro non sia che una apparente espressione e dichiarazione del concetto che si ha nell'animo, e di quello che altri si è nella mente immaginato e fabricato nell'idea').<sup>9</sup> Design needs the hand. The design of an artwork occurs in the iterative process of sketching, looking and revising. Drawing need not even be two-dimensional. We are accustomed to thinking of drawing as something that takes place on a flat plane. Sketching, as Vasari noted, could take place in either two or three dimensions:

Certain sculptors who have not much practice in strokes and outlines, and cannot draw on paper, these work instead in clay or wax, fashioning men, animals, and other things in relief, with beautiful proportion and balance. Thus they effect the same thing as does he who draws well on paper or other flat surface.

E perché alcuni scultori talvolta non hanno molta pratica nelle linee e ne'dintorni, onde non possono disegnare in carta, eglino in quel cambio con bella proporzione e misura facendo con terra o cera uomini, animali et altre cose di rilievo, fanno il medesimo che fa colui il quale perfettamente disegna in carta o in su altri piani.<sup>10</sup>

<sup>8</sup> Vasari 1987a: I. 117; 1960: 212.

<sup>9</sup> Vasari 1987b: I. 111; 1960: 205.

<sup>10</sup> Vasari 1987b: I. 111; 1960: 206.

In the terminology of Vasari's time, painters start with a sketch, or *schizzo*, and sculptors begin with a *bozzetto*. Both roughly translate in English to the word 'sketch'. Both nouns describe an early attempt at forming a concept of the work through the physical manipulation of materials. Just as we use a pen and a piece of paper to solve certain mathematical problems, the artist uses the sketch as a tool for problem solving (Clark 2003: 77).

Sketching freezes 'a thought or an idea' and creates 'a new object upon which to direct our critical attention' (Clark 2003: 79). The sketch allows the artist to work on an artistic problem, and it also freezes one possible solution to that problem in the form of an object, making that solution available for critical reflection and contemplation. Richard Menary (2010a: 239–41) argued that external manipulations, like drawing or writing, offer access to certain cognitive processes that are not available in internal processes. Like writing, sketching also produces a physical object, available for critical contemplation and manipulation (e.g. strike-outs, erasures, insertions). Sketches also provide the artist with the opportunity to make new discoveries and connections through observation, juxtaposition and manipulation, and to reconsider the original problem in light of these proposed solutions. The painter and writer Giovanni Battista Armenini (c. 1533–1609) described Raphael's working process in similar terms:

[Raphael] would set out many of his own drawings which seemed near to the subject matter which he had already conceived in his mind in great part. Looking first at one drawing, then at another while sketching swiftly, Raphael thus created his entire invention which seemed to be born because the mind was helped in such a manner and was enriched by the multitude of drawings.

[Raphael] perciocché dispiegava molti disegni di sua mano di quelli, che gli pareva che fossero più prossimi a quella materia, della quale egli già in gran parte aveva concetta l'idea, ed ora nell'uno, ora nell'altro guardando, e tuttavia velocemente disegnando, veniva così a formare tutta la sua invenzione, il che pareva che nascesse per esser la mente per tal maniera ajutata e fatta ricca per la moltitudine di quelli.<sup>11</sup>

Armenini's account suggests that Renaissance artists seldom conceived of their artistic processes as exclusively mental or intellectual.

Renaissance artists were acutely aware of the struggle to make an object equal to the concept. In the literature of the time, it was clear that the body played an essential role in the cognitive processes of creation, but it was not entirely clear how concepts and objects related to each other. Artists often described this process simply in terms of transporting the idea out of the imagination and into their physical world. Vasari's description of Michelangelo's working method suggests that Vasari thought of the mental and physical realms as conjoined, but separate. Analysing Michelangelo's creative process, Vasari wrote:

<sup>11</sup> Armenini 1587: 75; trans. 1977: 146.

I have some examples of [Michelangelo's] work, found in Florence and placed in my book of drawings; and these not only reveal the greatness of his mind but also show that when he wished to bring forth Minerva from the head of Jove, he had to use Vulcan's hammer: for he used to make his figures [in the proportion] of nine, ten, and even twelve 'heads'; in putting them together he strove only to achieve a certain harmony of grace, which nature does not present; and he said that one should have compasses in one's eyes, not in one's hands, because the hands execute but it is the eye which judges.

Et io ne ho alcuni di sua mano trovati in Fiorenza, messi nel nostro Libro de' disegni, dove, ancora che si vegga la grandezza di quello ingegno, si conosce che, quando e' voleva cavar Minerva della testa di Giove, ci bisognava il martello di Vulcano; imperò egli usò le sue figure farle di 9 e di 10 e di 12 teste, non cercando altro che, col metterle tutte insieme, ci fussi una certa concordanza di grazia nel tutto che non lo fa il naturale, dicendo che bisognava avere le seste negli occhi e non in mano, perché le mani operano e l'occhio giudica.<sup>12</sup>

This image of bringing forth Minerva from Jove's mind is telling. It suggests that Vasari saw the work as something already fully formed and complete within the artist's imagination, waiting only to be brought forth and embodied.

Yet other artists were less certain that the mind and the body were so clearly separate. Both Leonardo and Michelangelo suggest that making and doing are one and the same, rooted in the artist's unity of mind and body. Michelangelo's account of painting the Sistine Chapel focuses on the physicality of the creative act. In this poem, the artist becomes one with his own work: 'I bend my breast like a harpy's, and, with its nonstop dripping from above, my brush makes my face a richly decorated floor' ('e 'l petto fo d'arpia / e 'l pennel sopra 'l viso tuttavia / mel fa, gocciando, un ricco pavimento').<sup>13</sup> As his body is contorted into ever stranger positions, the painter is in the process of both making a work of art and becoming a work of art. Describing how painting reshaped his body, Michelangelo wrote, 'In front my hide is stretched, and behind the curve makes it wrinkled, as I bend myself like a Syrian bow' ('Dinanzi mi s'allunga la corteccia / e per piergarsi adietro si ragroppa, / e tendomi com'arco soriano').<sup>14</sup>

In Bronzino's 'Del pennello', the artist's *pennello* (or brush) is at once his tool, a part of his body, and the source of his creativity. The speaker in Bronzino's poem lavishly praises his *pennello*: 'O blessed and singular thing! / You make us, like God, rise up in the world again, / and renew each day' ('O cosa benedetta e singolare, / tu ci fai, come Dio, tornare al mondo / delle altre volte e ogni di rifare!').<sup>15</sup> Bronzino's poem also offers a playful – and bawdy – version of the argument that

<sup>12</sup> Vasari 1987b: IV. 109; 1965: 419.

<sup>13</sup> Michelangelo c. 1512, trans. and qtd in Barkan 2011: 87.

<sup>14</sup> Michelangelo c. 1512, trans. and qtd in Barkan 2011: 87.

<sup>15</sup> Bronzino [1538] 1988: ll. 91–3; trans. and qtd in Talvacchia 2011: 35.



bodily practice, as the physical act of making, is the essence of art. Vasari placed the intellect at the centre of the creative process, but Bronzino argued that art springs from action. Art is not so much a mental idea as a process of making:

Nor is it necessary to be brainy to learn [to make art].  
 If you're not as dumb as an ox,  
 you can be taught, so long as you want to have it.  
 But the important thing is to get down to it,  
 or say 'Whoever wants to get out;  
 I want to thrust in!' and be sure to give your all.  
 The ones who do this employ action not words,  
 and find the best technique in this art  
 since it usually happens through perseverance.

Né bisogna a impararla un gran cervello,  
 perché, se un non è grosso qual bue,  
 gli ha chi gl'insegna, purché voglia avello.  
 Ma l'importanza è ch'un si ponga giue  
 o che un dica: 'Vadane chi vuole;  
 io vo' dar dentro' e attenda a dar sue.  
 Questi fanno più fatti che parole  
 e trovan di quest'arte il miglior modo,  
 come, nel seguitar, avvenir suole.<sup>16</sup>

Making – and creating – depended on the artist's ability to discipline himself, the mind as well as the hand. This required practice and perseverance. Michelangelo scribbled, on a sheet already chaotic with sketches and other pieces of writing, the famous exhortation to his student and assistant, Antonio Mini: 'Disegna Antonio disegna Antonio disegna e non perdere tempo' ('Draw, Antonio, draw and don't waste time').<sup>17</sup> Drawing was the discipline that united mind with body. For Vasari, knowledge was the beginning, but the proof of expertise – or mastery – came in the execution. Michelangelo closed the circle: execution *was* knowledge.

For the Renaissance artist, drawing was being. Sixteenth-century portraits of artists often depicted the subject holding a drawing, as if he were displaying the substance of his being. Both Sebastiano del Piombo and Pompeo di Giulio Caccini portrayed Michelangelo with his sketches. Titian painted Giulio Romano holding an architectural drawing. Baccio Bandinelli painted himself holding a large red chalk drawing. Artists were also depicted in the act of drawing, as in Peter Candid's *Portrait of Giambologna in his Studio* (c. 1585–8), where the artist is shown working on an architectural drawing.

Michelangelo suggested that drawing formed the core of Renaissance artistic

<sup>16</sup> Bronzino [1538] 1988: ll. 34–42; trans. and qtd in Talvacchia 2011: 34.

<sup>17</sup> Trans. and qtd in Barkan 2011: 188.

practice. Other artists were less reflexive about their practice, but the traces that we have of their actions suggest that Michelangelo was not alone in binding drawing to the artist's vocation. Whether moving fast and furious, throwing off a storm of ideas, or slowly and with precision, the artist thought with his hand – and in many cases invited others to join him in thought, whether through collaboration on paper, or through the translation of drawing into another medium (tapestry, or stonework, or architecture). For Renaissance artists, thought had many modes and many looks.

## Inhabiting Other Hands

'Having practiced drawing a sufficient time on tablets as I have before directed', Cennino admonished the novice, 'always take pains in drawing the best subjects which you can find, done by the hand of great masters' ('Avendo prima usato un tempo il disegnare, come ti dissi di sopra, cioè in tavoletta, affaticati e dilèttati di ritrarre sempre le miglior cose, che trovar puoi per mano fatte di gran maestri').<sup>18</sup> Copying (*ritrarre*) the manner (*maniera*) and air or style (*aria*) of great masters (*gran maestri*) was not only a time-honoured way of learning drawing and design, it was also essential to the function of the Renaissance workshop, for workshops turned out work that upheld the collective fiction that it was all the master's work, even if they were by various hands.

Copying represented a means of inhabiting another mind by learning another hand. Students learned by copying masters. By taking on the master's hand, one would hopefully also take on the master's habitus – a process that was crucial to the student's aesthetic, as well as technical, development. In the re-creation of the work, the student would decipher and then retrace the physical movements that had gone into the making of the work – and in the process would also retrace the thought process behind those movements. The student restaged the series of choices and decisions faced by the master. Passive looking was not enough. Learning through looking was certainly an important part of an artist's education. Vasari and his students collected master drawings so that they could study and emulate them. But looking was a supplement to drawing. Copying – learning through practice – lay at the heart of the artist's technical education.

The passage from pure imitation – copying a work line by line – to influence and finally to independent invention and the development of a distinctive individual style was one shared by almost all Renaissance artists. Even artists with powerful, distinctive personal styles made the same passage. Leonardo's early drawings closely follow Andrea del Verrocchio's style, manner and technique. Both Leonardo and Verrocchio balance a soft, sculptural approach to modelling facial features – using *sfumato* to describe the face's soft curves and hollows – with a precise, linear approach to describing the subject's hair and coiffure. This closeness of style and execution was no accident. As Carmen Bambach (2003: 9) noted, 'The practice of precise imitation favoured in the workshops of Verrocchio and other

<sup>18</sup> Cennini 1821: 20; 1922: 21–2.

artists of the period often makes it difficult to distinguish the hand of the master from that of the pupils.' It was similarly difficult to distinguish the hands of the various pupils from each other, as they had all learned to draw in Verrocchio's hand.

Michelangelo would later shed the style he learned in Domenico Ghirlandaio's workshop, but his early works are similar to the drawings of other members of the Ghirlandaio workshop. Throughout his life, he would retain the Ghirlandaio workshop's habit of describing form and shadow with a distinctive mixture of hatching and cross-hatching. Francis Ames-Lewis (1981a) argues that this style of cross-hatching was unique to the Ghirlandaio workshop. Distinctive techniques, like the Ghirlandaio workshop's cross-hatching, appear in workshop genealogies like DNA markers. Students learned the master's cognitive style, and then retained it throughout their careers.

Students were not the only ones who benefited from copying. Established artists also made copies. These were both opportunities to analyse and learn another artist's approach, and a test of the artist's skill. Renaissance audiences valued exceptional copies by great artists as much as – or sometimes even more than – the originals. Vasari recounts how Giulio Romano, Raphael's student, believed that Andrea del Sarto's copy of Raphael's *Portrait of Pope Leo X with Cardinals Giulio de' Medici and Luigi Rossi* was actually the original. The copy had been made to fool the Duke of Mantua. According to Vasari, the Duke saw Raphael's painting in Florence, and coveted it. Though the Pope consented to the Duke's request, the painting's guardian, Ottaviano de' Medici, came up with a scheme:

[They would] make an exact copy of the picture with the greatest care and send it to the Duke, secretly retaining the one by the hand of Raffaello. [Andrea del Sarto was chosen to make the copy.] When it was finished even Messer Ottaviano, for all his understanding in matters of art, could not tell the one from the other, nor distinguish the real and true picture from the copy; especially as Andrea had counterfeited even the spots of dirt, exactly as they were in the original.

E ciò fatto messer Ottaviano per salvare, come si dice, la capra et i cavoli, mandò segretamente per Andrea e gli disse come il fatto stava, e che a ciò non era altro rimedio che contrafare quello con ogni diligenza, e mandandone un simile al Duca, ritenere, ma nascosamente, quello di mano di Raffaello. . . . E vi si affaticò di maniera che esso messer Ottaviano, intendentissimo delle cose dell'arti, quando fu finito non conosceva l'uno dall'altro, né il proprio e vero dal simile, avendo massimamente Andrea contrafatto insino alle macchie del sucido, come era il vero apunto.<sup>19</sup>

This copy fooled even Giulio, who 'would always have been of the same opinion, and would have believed it to be by the hand of Raffaello, but for the arrival in Mantua of Giorgio Vasari, who, having been as it were the adoptive child of

<sup>19</sup> Vasari 1987b: IV. 379; 1913: IV. 108.

Messer Ottaviano, and having seen Andrea at work on that picture, revealed the truth' ('Il quale Giulio si sarebbe stato sempre in quella opinione e l'arebbe creduto di mano di Raffaello: ma capitando a Mantova Giorgio Vasari, il quale, essendo fanciullo e creatura di messer Ottaviano, aveva veduto Andrea lavorare quel quadro, scoperse la cosa').<sup>20</sup>

When Vasari saw the picture, he said to Giulio, 'A beautiful work it is, but in no way by the hand of Raffaello.' Vasari recounted his conversation with Giulio:

'What?' answered Giulio. 'Should I not know it, when I recognize the very strokes that I made with my own brush?' 'You have forgotten them,' said Giorgio, 'for this picture is by the hand of Andrea del Sarto; and to prove it, there is a sign (to which he pointed) that was made in Florence, because when the two were together they could not be distinguished.' Hearing this, Giulio had the picture turned round, and saw the mark; at which he shrugged his shoulders and said these words, 'I value it no less than if it were by the hand of Raffaello nay, even more, for it is something out of the course of nature that a man of excellence should imitate the manner of another so well, and should make a copy so like. It is enough that it should be known that Andrea's genius was as valiant in double harness as in single.'

Come no? disse Giulio, non lo so io, che riconosco i colpi, che vi lavorai su? Voi ve gli sete dimenticati, soggiunse Giorgio: perché questo è di mano d'Andrea del Sarto; e per segno di ciò, eccovi un segno (e glielo mostrò) che fu fatto in Fiorenza, perché quando erano insieme si scambiavano. Ciò udito, fece rivoltar Giulio il quadro, e visto il contrasegno, si strinse nelle spalle, dicendo queste parole: Io non lo stimo meno che s'ella fusse di mano di Raffaello, anzi molto più: perché è cosa fuor di natura, che un uomo eccellente imiti sì bene la maniera d'un altro, e la faccia così simile. Basta, che si conosce che così valse la virtù d'Andrea accompagnata come sola.<sup>21</sup>

Vasari's account is revealing on two levels: first, though the painting was 'by the hand of Raphael', Giulio protests that he could not fail to recognise the painting 'when I recognize the strokes that I made with my own brush'; second, when the painting is revealed to be a copy 'by the hand of Andrea', Giulio praises the painter's double genius, for being able to paint so well both as himself and 'in the manner of another'. Giulio's response underscores the nature of the Renaissance workshop – where all the hands operated as a collective under one name, or brand. As a student in Raphael's workshop, Giulio's hand was Raphael's hand. It was both customary and expected that Giulio would work on Raphael's paintings, for this was the nature of the workshop. Only when the student became a master himself – and left the workshop to start his own – did he begin to paint under his own name, in his own hand.

<sup>20</sup> Vasari 1987b: IV. 379–80; 1913: VI. 108.

<sup>21</sup> Vasari 1987b: IV. 379–80; 1913: IV. 108–9. My own transcription with modernised spellings.

Learning another's hand was both a matter of individual artistic development – as emphasised by Cennino, Ghiberti, Vasari, Alberti and many other Renaissance writers – and a matter of workshop production. Though writers like Cennino and Vasari emphasised the individual artist's passage from novice to master – with the hope of eventually owning one's own workshop, rather than serving another – in practice most artists worked in workshops, and the work that they produced was not, at least not in our modern terms, 'their own'.

Workshop members were often talented in their own right, and some would later become famous on their own terms, but while they were in the master's workshop, their role was to produce the kind of work that patrons wanted and expected – work in the manner of the workshop master. Imitation – and eventual assimilation – of the master's hand gave the workshop consistency and cohesiveness in its production. Sketchbooks and other materials offer glimpses into how workshops maintained this cohesiveness of style through imitation, replication and assimilation. These materials often preserve not just drawings by the hand of the master, but also drawings by other workshop members. Michelangelo's papers, for example, contain his own text and drawings – but they also conserve traces of many other hands. It is often difficult – sometimes even impossible – to provide definitive attributions to either the master or other members of the workshop. For a workshop busy with commissions, output depended on collaboration and teamwork. It was imperative that the products of a workshop possess a convincing uniformity, that they display the same style and conform to the workshop's brand.

How does drawing help the artist inhabit another's hand and mind? The practice of copying pushes the artist to imagine – and retrace – the production of the work. In the creation of an exact copy after an original, the artist – by making the same marks, in the same sequence if possible – recapitulates the work's making. A work has an internal logic. Copying is not just the imitation of the visual 'look'; a good copy demonstrates an understanding of that internal logic, and of how that work came into being. The process of creating an exact copy is like learning the logic of a system of representation – the logic must be learned through the act of making, through construction and reconstruction. Passive reception is not enough. To understand the logic of the work, drawing is required. Drawing activates the entire body in the reconstruction of the process. It is about more than compelling one hand to move as an echo of the other. It is about figuring out how the original artist approached his subject – a tree, or a piece of architecture – and transformed it into a formal representation, as well as understanding how the artist's materials shaped his work. Was the brush a little dry? Was his hand moving quickly and fluidly? Or was it hectic and jerky? The copyist analyses not just the overall effect of the representation, but the fine points of its execution. A good copyist comes to understand, through analysis and practice, how the other hand moved. By learning to move like the other artist, the copyist learns to think like the other, to make the same decisions regarding material, medium, modes of representation.

In most major Renaissance workshops, works were produced in collaboration. The workshop functioned as an ensemble, with many individuals functioning as a

seamless whole. These artists were not rote copyists. They could freely create in their master's hand. Most large-scale Renaissance works – whether frescoes, altar-pieces or autonomous paintings – are best understood as ensemble works, products of collaborative creation. They were creations, one might say, between hands. Nor were the identities of the 'hands' hidden. Renaissance patrons and viewers were familiar with the workshop and its function, and talented workshop hands often had their own reputations. The first step towards becoming one of the master's hands is learning the art of replication. The crucial next step – the one that transforms a student into a workshop hand – is the ability to imitate and create *new* work *in the manner* or *in the hand* of the master. Now, he is capable of performing as one of the master's hands.

### Nothing and Something

The Venetian painter Vittore Carpaccio (active c. 1460–1526) preferred to precede his signature with derivatives of the verb *ingere*, 'one who gives form to mental images', rather than using the usual forms of *facere*, 'to make' (Fortini Brown 1988: 217). Carpaccio's insistence on his status as one who transforms objects of the imagination into real and material works of art points to changing understandings of the artist's role in the late fifteenth and early sixteenth centuries. Artists were eager to shed their identity as craftsmen or makers. They no longer wished to be regarded as mere providers of manual labour. More and more, they wished to be known as intellectuals as well as artisans, as inventors and creators on a par with poets and philosophers. One didn't simply reflect the world in painting. One invented new worlds. Art could elevate and transcend anything. Leonardo admonished his readers to create fantasies out of stains and ink blots. There is nothing so base that it cannot be transcended.

Even the most fertile imagination requires raw material. Leonardo needed a stain on the wall. Carpaccio's practice of drawing helped him transform bits and pieces of the ordinary world into fantastic inventions. Elaborate narrative paintings, often set in exotic locations, were Carpaccio's speciality. Born in Venice, probably around the middle of the fifteenth century, he studied under the Venetian artist Gentile Bellini (c. 1429–1507). There is no evidence that he travelled extensively, yet some of his most memorable paintings were set far from Venice. To construct these paintings of exotic locales, Carpaccio, like many other Renaissance artists, turned to print sources. For details of Ottoman and Mamluk costumes, Carpaccio probably consulted illustrated costume books. For Levantine landscapes and city views, he borrowed freely from Erhard Reuwich's woodcut illustrations for Bernhard von Breydenbach's *Peregrinatio in terram sanctam* (*Journey to the Holy Land*, 1486). David R. Marshall (1984: 610) observed that Carpaccio seldom employed literal copies of Reuwich's topographic views in the construction of his settings. Rather, he transformed them according to his own interpretations of the narrative. For example, Carpaccio's *Stoning of Saint Stephen* locates the site of the saint's martyrdom within Jerusalem's city walls (Marshall 1984: 615–19). Carpaccio deviated

from Reuwich's presentation of the same subject, which depicted Jerusalem not as it appeared in Saint Stephen's time, but in Carpaccio's own time. Rather than presenting the city walls 'in their modern, ruined state', like Reuwich, Carpaccio painted the city walls as they would have appeared in antiquity (Marshall 1984: 619). Drawing was part of Carpaccio's process of rethinking and reworking borrowed motifs. He took an existing image, like Reuwich's woodcut view of Jerusalem's walls, and transformed it, integrating that borrowed image into the logic of the work at hand.

Even though he downplayed the manual nature of his creative process, drawing was central to Carpaccio's practice. Due to the size, scale and complexity of Carpaccio's narrative cycles, drawings were a necessary part of the design and planning process. Each canvas covered most of a wall, and a complete narrative cycle could include half a dozen or more of these large paintings. Carpaccio's Saint Ursula cycle (c. 1455–c. 1525), painted for the Scuola di Sant'Orsola in Venice, included nine monumental canvases. Large and complex projects like the Saint Ursula cycle required large amounts of research and planning.

For large, complex paintings, drawings were essential. Like a writer's outline, compositional drawings provided a way of holding material together, giving it a coherent structure without overwhelming the artist with detail. They also provided a relatively fast and low-cost method of playing with alternate structures. Repainting a large canvas is expensive, not only in terms of time and labour, but also in terms of raw materials. In Carpaccio's time, the cost of pigments and other materials came out of the artist's pocket. It was in his best interests to find the most efficient and least expensive way to move through the design process. Drawings allowed artists like Carpaccio to explore ways of solving visual problems in an exploratory manner. They also fixed each potential solution as a visual object, allowing the artist to use them in 'the iterated process of externalizing and re-perceiving' that Clark described as 'integral to artistic cognition itself' (Clark 2003: 77).

Throughout this process, Carpaccio's drawings served a range of different functions. Some, such as his studies from life, helped him work out how to translate his own sensual experience into the formal language of representation. A study of a young boy in armour (now in the Metropolitan Museum of Art), associated with Carpaccio's Saint George cycle (c. 1502–7, Scuola di San Giorgio degli Schiavoni, Venice), sheds light on his process. For this drawing, Carpaccio posed a young boy – perhaps a studio assistant – in a suit of armour. Trying out different approaches to gesture and expression, Carpaccio drew the boy's face twice. Carpaccio set himself two different problems in this drawing. The first was the problem of how to translate the unruly mess of sensory perception into the language of pictorial representation. The second was the problem of translating the ineffable – moods, feelings, psychology – into legible form. Though the drawing represents just one small moment in Carpaccio's preparatory process, it conveys the intensity of thought and analysis that went into each step. It also lays out the way that much of the 'thinking' that went into the composition process occurred through the act of drawing.

In a letter written in 1551 to the humanist and Medici agent Luca Martini

(1507–61), the Florentine artist Baccio Bandinelli (1493–1560) described the production of multiple drawings as an important part of the artist's exploration of potential solutions:

[I]t is necessary, if I want to vary the inventions, that I see in front of my eyes all the drawings that I make, because for me each one sheds light upon the other in understanding the truth of the errors of each, because I see them in comparison, and in this way I will vary and improve them in such a way that will please Your Excellency, because drawings are not made for any reason other than to see them together in comparison.

Ma egli è necessario, se io voglio fare variate le invenzioni, che io mi vegga tutti i disegni, che io fo, innanzi agli occhi, perchè l'uno mi fa gran luce all'altro in conoscere la verità degli errori di ciascuno, perchè gli veggio al paragone, ed in questo modo varierò e migliorerò in modo che piaceranno a sua eccellenza, perchè i disegni non si fanno per altro che per vederli insieme a paragone.<sup>22</sup>

Carpaccio's red-chalk sketch for *The Martyrdom of the Ten Thousand* (Plate 7) is an example of an early solution to a pictorial problem. This drawing is associated with Carpaccio's 1515 altarpiece for the church of Sant'Antonio di Castello, *The Ten Thousand Martyrs on the Mount Ararat* (now in the Accademia, Venice). The story provided the painter with an unusual challenge: to arrange a multitude of bodies in such a way that the bodies and the overall composition both remain legible. Carpaccio's sketch exemplifies what the cognitive scientist Gabriela Goldschmidt described as 'the backtalk of sketching'. The process of sketching represents 'an ability to use the representational act to reason with on the fly' (Goldschmidt 2003: 72). Carpaccio's sketch is an example of using drawing to 'reason on the fly'. Goldschmidt (2003: 72) describes this reasoning process as *ad hoc*:

Partial and rudimentary representations are produced, evaluated, transformed, modified, refined, and replaced by others if need be, until their maker is satisfied with the results. The unique thing about such processes is that, since they involve ill-structured problem-solving, it is not clear at the outset where the process is leading to, and what the end result might be.

The sketch, schematic and executed with simple, common materials, is an excellent example of a 'cognitively economical' process. It allows the artist to experiment without investing excessive amounts of time, labour or other resources.

In their analysis of Leonardo's sketching practices, Jonathan Fish and Stephen Scrivener argue that the 'untidy' nature of the exploratory sketch helps artists develop ideas. Comparing paper sketching with computer-assisted sketching, Fish and Scrivener (1990: 117) note:

<sup>22</sup> Bandinelli qtd in Bottari and Ticozzi 1822: 94–5, trans. and qtd in Gasparotto 2014: 46.



Paper sketching uses denotation systems that include tolerances and indeterminacies in ways that can amplify the artist's ability to perceive or imagine many options. Computer systems that fail to represent in their data storage the implicit structure or categorical meaning of an image may force the artist to provide precise or detailed information too early in the creative process. This can lead to premature decisions that are harmful to invention because they limit the ability to discover unexpected or original solutions.

Sketching, Fish and Scrivener (1990: 117) argue, has a special cognitive function in the design process, serving 'the need to foresee the results of the synthesis or manipulation of objects without actually executing such operations'.

Sketches are vague and indeterminate for good reason. They are full of problematic, indeterminate moments, such as:

Blank spaces where the drawing fades away, multiple alternative contour lines (*pentimenti*), missing contour lines, wobbly lines, mysterious dark shadows, suggestive scribbles and smudges, energetic cross-hatching, accidental flow patterns of paint and even scratch marks. (Fish and Scrivener 1990: 120)

In Carpaccio's sketch, the martyrs are suggested with just a few abstract strokes. Carpaccio will fill in the details later. For now, he is concerned with quickly sketching out the composition's structure, figuring out the right visual rhythms, the optimal relationships between the narrative's many elements. The openness is essential for experimentation and serendipity. Only when the artist is ready for closure does he bring 'stability' to the representation. Each sketch is part of a process not only of exploring possible global structures, but also of imagining and filling in the details. Those details flesh out, stabilise and ultimately *materialise* the work.

In that moment of synthesis and materialisation, the work becomes something that possesses a form and a presence in the world. When Carpaccio chose to sign his works using the verb *ingere*, he conjured the strangeness and magic of the artist's role in the work's passage from nothingness into the world shared and inhabited by us all.

This ability to conjure 'something' out of 'nothing' – to create a whole new work and world – has long struck observers as both awesome and terrible. As much as Cennino, Vasari and other Renaissance writers tried to break the act of creation down, to impose rationality and order on the process, they never fully succeeded in describing, or understanding, the leap from making to creating. Renaissance attempts to describe and theorise the relationship between practices of making and expressions of artistic creativity, much like modern neuroscientific and philosophical theories, were concerned with building plausible models to describe the ineffable and mysterious process of artistic creation, without recourse to the divine. The earlier descriptive models are remarkably homologous to modern models. Renaissance writers, too, understood artistic creation as embodied and embedded, though writers with humanistic inclinations – such as Vasari and Leon Battista

Alberti – fought to elevate those aspects of artistic practice that they considered intellectual and mental. Our modern models, such as those that emerge from artificial intelligence or machine learning, similarly seek to understand and draw a line between making and creating. Drawing – as practice – was part of the process that led to creation, but where – and when – does the seemingly mechanical process of making become creation? Creativity was once divinely given. Now it is all too human. Modern neuroscientific studies of expertise have been able to discern, down to a cellular level, differences between expert and non-expert bodies but, strangely, we are no closer to answering Yeats’s question today than we were six centuries ago:

O body swayed to music, O brightening glance,  
How can we know the dancer from the dance?<sup>23</sup>

<sup>23</sup> Yeats 1989: 217.

## The Medieval (Music) Book: A Multimodal Cognitive Artefact

*Kate Maxwell*

In this chapter I explore the idea of a medieval manuscript book as a cognitive artefact. With this term, I assert that the manuscript book is a product of a cognitive ecology and an example of embedded creative cognition, both of which involve the reader in an active role in recreating the text. Through a multimodal analysis of an opening from the *Livre de Fauvel* (Paris, BnF fr. 146) presented in the light of these notions, together with medieval theories of memory and consumption, I show that the medieval manuscript book is both multimodal and cognitive, and that the present-day reader has much to gain from taking an active part in the book's recreation.

You beat back the weakness of my vision; your light shone upon me in its brilliance, and I thrilled in love and dread alike. I realized that I was far away from you. It was as though I were in a land where all is different from your own and I heard your voice calling from on high, saying, 'I am the food of full-grown men. Grow and you shall feed on me. But you shall not change me into your own substance, as you do with the food of your body. Instead you shall be changed into me.'<sup>1</sup>

In this quotation, Augustine describes his realisation that the consumption of the word of God changes the body that is consuming it. This communion with the text is an idea that prevailed throughout the Middle Ages, and is essential for an understanding of medieval reading and composition practices, which are closely entwined as we

<sup>1</sup> Augustine, *Confessions* 7.10: 147; translation from Brown 2000: 561. Translations, unless otherwise noted, are my own, and all dates are given in new style. An earlier version of this chapter was presented at the Leeds International Medieval Congress, 4–7 July 2016. My sincere thanks to the organisers of the session, Sara Ellis Nilsson and Steffen Hope, as well as to the panellists and audience, for the feedback and discussions. Thanks are also due to Steffen Hope, Lilli Mittner and Narve Fulsås, who read and commented on drafts of this chapter. The reviewers of the History of Distributed Cognition project, and the patient editing of Miranda Anderson, did much to clarify my thinking, and specific thanks are due to Miranda Anderson and Michael Wheeler for the supply of references and work pre-publication.

shall see. The structure of the medieval book (much of which is still the same in books today) is itself cognitive, in that it reflects contemporary thought about the memory. This was established by Frances Yates (1966), advanced by Mary Carruthers (1990, 1998), and embellished with relation to music by Anna Maria Busse Berger (2005). I have argued elsewhere that the manuscript page is a site of multimodal performance (Maxwell 2009; Maxwell et al. 2013; Maxwell 2015), and here I shall further develop that premise with reference to the extended (creative) mind.<sup>2</sup>

The chapter is divided into two principal sections. First, I will elucidate the theory behind my approach. In this section I draw not only on distributed cognition and multimodality, but also on related material from the Middle Ages, particularly Augustine and ideas about the consumption of the text. In the second section, I put the theory into practice through a detailed case-study analysis of a single opening from a multimodal medieval manuscript: the beast enthroned in the *Livre de Fauvel*. Through this active reading in which I recreate this multimodal text as a modern reader, I both reveal and take part in the cognitive ecology of authors, compilers, readers and book. I end with a consideration of the relevance of such an approach, and such a book, to our own time, and how the consumption of old texts continues to change those who take the time to learn.

## Theory

In the Middle Ages both writing and reading were intrinsically linked to memory (Carruthers 1990): one did not ‘know’ a text unless it was, in fact, memorised, internalised in the mind. A text was typically composed in the mind, dictated to a secretary, and then learnt by a reader.<sup>3</sup> In this chapter I will demonstrate how the network created of author, scribe, reader and book – the meeting of (at least three) minds, parchment, ink, quill and other technologies of writing and knowing that all contributed to the writing and thinking process – can be considered a cognitive ecology. A cognitive ecology can be defined as follows:

A cognitive ecology is a structured setting in which individuals or groups remember, create, imagine or engage in other flexible, intelligent action. Cognitive ecologies are often multidimensional, involving physical, technological, and social resources all at once . . . The unit of analysis, then, is the whole shifting and dynamic system seen as an interacting whole, rather than a single individual. (Sutton and Keane 2016: 48)

The interplay between the book, the body and the mind is far from straightforward in the later Middle Ages. In the case study in this chapter, I will show how

<sup>2</sup> ‘Performance’ as a term is here understood as encompassing the theatrical as well as the theoretical. In brief, readers of a medieval manuscript take part in the ongoing performance of the page (Maxwell et al. 2013).

<sup>3</sup> For examples see Carruthers 1990: 5–8, 10–11.

the cognitive ecology functions with particular regard for the role of the readers' memories. In the Middle Ages, the design of the book (and other artefacts) reflected the medieval art of memory, but it would be deceptively simple to claim that the book is an extension of the mind. The extended mind theory (Clark 2014) is here enacted in reverse: rather than information being stored in a medieval book in order to be retrieved at a later date, the information in the book is laid out in such a way as to enable it to be efficiently memorised (Carruthers 1990: 11). Clark's assertions that we are 'natural born cyborgs' (Clark 2003) and that 'brains like ours trade access against on-board storage' (Clark 2014) therefore need some unpacking for the medieval manuscript book. The medieval book was less a way to extend the mind by storing information outside of the body than a physical creation based on contemporary understandings of the mind's memory storage so that the information presented in the book could be consumed and recreated in the mind of the reader.

One of the important notions at work here is creativity, particularly its relation to the cognitive ecology of the medieval book and the role of the reader in what I have elsewhere called the performance of the page (Maxwell et al. 2013). This fits with what Michael Wheeler has termed creativity's 'entangled, inside-*and*-outside logic', in which cognitive creative processes are in constant dialogue with contexts, bodies and spaces, and are thus both internal and external (Wheeler 2018: 231). As we will see from the case study of the *Livre de Fauvel* below, the reader of a medieval manuscript is heavily involved in this process; indeed, the reader is required to complete the text.<sup>4</sup> For without reading (and memorisation), composition cannot take place. Mary Carruthers explains it thus:

Medieval reading habits are based upon a model of craft mastery, the 'courses' of one stone or brick or other materials which a master mason may make in building a wall, with concomitant emphasis upon preparation (the ground), routines of exercise (discipline), and stages in a *way* towards making a finished artifact, a mastery that affords pleasure. (Carruthers 1998: 20–1)

Thus medieval reading and creative practices can be linked as 'embedded creative cognition', for the medieval book is 'an external technological element [that] may account for some of the distinctively creative aspects of an artwork' (Wheeler 2018: 240). Indeed, the attentive reader of a medieval book, recreating the text in their mind, has a dynamic relationship with this external resource that then becomes 'a partner or participant in the creative process' (241). Thus the medieval book is more than memorial scaffolding, or off-site storage. It is a cognitive artefact that is at once external and public (an object that has survived the centuries) and internal

<sup>4</sup> The active role of the reader is to be found in various medieval texts in addition to my case study here, particularly those containing anagrams, a device in which the intertwined roles of reader and author are exploited sometimes humorously, sometimes frustratingly (De Looze 1991).

and private (recreated according to the individual knowledge of each reader).<sup>5</sup> And this cognitive artefact is multimodal.

While it could be argued that all medieval manuscripts are multimodal, in that they all employ various semiotic modes to make meaning, some exploit this to a greater extent than others. My case study in this chapter is the interpolated *Livre de Fauvel*, a manuscript book containing music combined with text, image and manifold other semiotic modes for meaning-making. It is therefore inherently multimodal. The use of the framework of multimodality for the analysis of medieval texts is relatively new, and here I draw on the model developed in Maxwell 2015. This means that I understand the individual modes in use to fall into three categories that are dependent on the context of the analysis: the first category is that of ‘cultural practices’ (for example, reading and writing, as discussed above), the second is ‘semiotic resources’ (for example, page layout, the use of Latin or vernacular), and the third is ‘elements’ (for example, rhythm and colour). In the section below I undertake a multimodal analysis of a single opening from the *Livre de Fauvel* in order to demonstrate how each mode contributes to the complex performance of that opening, and how the reader’s realisation of this contributes to their understanding of the book as a whole, and thus they become part of the cognitive ecology.

Perhaps learning is the closest modern understanding of the cultural practice of reading in the Middle Ages. But this learning was not rote memorisation, nor was it pedagogical *per se*. It is instead a learning which changes the learner from within, a consummation which transfigures the one who consumes. This is a notion that was current at the start of the Common Era, and is found in Judaeo-Christian writings including those found in the Old and New Testaments (see, for example, Ezekiel 2–3, 1 Corinthians 11, Revelations 10 and, most famously, the opening to the gospel of John). Thus something enters the mind via the body (ears, eyes, mouth), where it enacts creation and change – where it can be built upon to bring the soul closer to the truth. The book itself embodies the moral imperative to change the reader who reads ‘well’.

It is therefore not surprising that a trope of medieval music theorists was that music was ‘scientia bene modulandi’ – the science of modulating well. This phrase is from the first book of Augustine of Hippo’s *De musica*, and was current throughout the period, even if reference to Augustine (or his source Varro) was not usually made (Østrem 2012: 222). It does not simply imply a case of good singing; rather, ‘modulandi’ refers to the orderly arrangement of sounds, and the ‘bene’ invokes ethical considerations (Østrem 2012: 226, 231). While Augustine wrote some centuries before the development of music notation, it is notable that the resurrection of his incomplete treatise on music took place after the changes widely referred to as the *ars nova*,<sup>6</sup> and indeed his words were often used in debates about the ethically

<sup>5</sup> This can be compared to the concept of musicking (Small 1999, discussed in relation to medieval music manuscripts in Maxwell 2009 and to the musically extended mind in Krueger 2014a).

<sup>6</sup> The *ars nova*, to put it simply, allowed musical rhythm to be notated. In the early fourteenth

dubious state of music in religious services (Østrem 2012). If music was to be permitted, then a good song or singer was not enough: the music, however it was received, also had to nourish the soul.

In summary, then, it is my contention that the medieval book is a multimodal cognitive artefact that sees the reader as part of a cognitive ecology. This can be understood in medieval terms through architectural metaphors (Carruthers 1998), or through an Augustinian understanding of the changing power of reading. It is also a creative process that displays the clear ‘inside-*and*-outside logic’ of embedded cognition (Wheeler 2018: 231). The medieval book may reflect composition and reading practices that were based on memory, but the book is much more than a temporary storage space for information to be later taken into the mind. Rather, the book is a site of performance between producers and readers, and that performance requires that the readers play their part, and play it ‘well’, so that they are changed from the inside. Since without such reader engagement the medieval book is incomplete, we must now turn to a case study to demonstrate the cognitive ecology in action. In so doing we shall recreate for our own society a 700-year-old text through a multimodal analysis of a single manuscript opening. Through this analysis, which relies on active reading, I simultaneously reveal and take part in the cognitive ecology of the medieval book.

### Theory in Performance: The *Livre de Fauvel*

The interpolated *Roman de Fauvel* as it is preserved in fr. 146, the manuscript known as the *Livre de Fauvel*, is an example *par excellence* of a cognitive ecology working to produce a multimodal book.<sup>7</sup> It is a book that is lavishly yet tastefully presented with muted greens, purples and golds: it is designed to be sweet as honey when tasted by the reader, but its message is bitter in the belly (Revelations 10: 10), a stark warning of impending disaster should political change not occur. It is a tour de force of music, image and text, but more than this: it uses every semiotic resource available to make its message of change visible and audible to anyone seeking it.

The *Livre de Fauvel* measures 46 cm × 33 cm when closed, and contains over 100 parchment folios; as a physical artefact it is large, heavy, imposing. Its contents at first seem disparate: it opens with a lament which is followed by the index, then follow the two books of the *Roman de Fauvel* written by Gervais de Bus in 1310 with their abundant new additions (a lengthy musical and pictorial scheme, together with significant textual additions). Following the *roman* are a series of political *dits* in French and Latin by Geffroy de Paris, then thirty-four songs by Jehannot de l’Es-

century, therefore, music notation was a mode that was in a state of flux and was an area in which boundaries could be stretched.

<sup>7</sup> Link to primary source: Paris, BnF fr. 146 (*Le livre de Fauvel*), <<http://gallica.bnf.fr/ark:/12148/btv1b8454675g>> (last accessed 4 December 2018). Partial edition: *Le Roman de Fauvel par Gervais du Bus publié d’après tous les manuscrits connus*, ed. A. Långfors, Paris: Publications de la Société des anciens textes français, 1914–19.

curel, and finally a rhymed metrical chronicle of events in France between 1300 and 1316 (Bent and Wathey 1998: 6–7). The whole is flanked by blank flyleaves and is now enclosed in a red leather binding dating from the seventeenth or eighteenth century (Dillon 2002b: 12).

To the modern reader this motley crew of genres and arts is bewildering, even assuming a working knowledge of Middle French and of fourteenth-century textual and musical writing. Yet the manuscript is undoubtedly attractive and amusing even to the untrained modern eye, and it teaches some important lessons. The *livre* can be devoured self-indulgently for entertainment only, or it can be nobly and devoutly understood as placing a moral imperative on the reader to employ their Augustinian rhythms of judgement and to bring about change. What is most intriguing for our purposes here is that these lessons must be learnt through the reader's cognitive engagement, which can take place on a multitude of levels – something that Nancy Freeman Regalado has termed 'reciprocal reading' (1998, *passim*). And, as Emma Dillon has pointed out, the term 'reader' here includes the producers of the manuscript, who, perhaps more than anyone, produced the book at the same time as they consumed it (Dillon 2002b: 7–8). As demonstrated above, the format of the medieval book was such that it reflected contemporary reading and memorisation practices. When we read the *Livre de Fauvel*, therefore, we enter into a dynamic cognitive space in which the reader's mind interacts with the tool of the book, and through it, with the minds of its creators. The construction of the book, and of the opening I will analyse in the case study below, is such that the multimodal literacy required to engage with it and its message can take place on a number of levels, and across time and space. The book itself, and its layout, was therefore a tool that plays an active part in both the creation and the reading processes which are here entwined. The *livre* is thus a cognitive ecology in full swing.

Who were the compilers of this extraordinary book? Much scholarly thought has gone into this very question, so I will merely summarise here.<sup>8</sup> The recipient was almost certainly Philip V, on the occasion of his somewhat unlikely and not entirely secure succession to the French throne in 1316 (coronation January 1317). The compilers were equally likely to be clerks and notaries of the royal household of France, who included authors, composers and artists. They had witnessed the damaging rise and fall of Philip IV's all-powerful favourite adviser Enguerran de Marigny (hanged in 1315), the short reign of Louis X which was plagued with an adultery scandal and hasty remarriage, the birth and death of Louis's posthumous son (the infant king Jean I (1316)), and the political manoeuvres of Philip (V) to secure first the regency and then the crown itself. The manuscript was therefore produced at a time of political upheaval, when a strong and wise leader was badly needed. Yet royal clerks, no matter how skilled, could not go about making a lavish manuscript such as fr. 146 on their own: someone had to pay for it, and that someone had to be sure enough of their own position to not incur certain retaliation for the manuscript's bitter

<sup>8</sup> For overviews of the evidence see Roesner et al. 1990, Bent and Wathey 1998, Brown 1998 and Dillon 2002b.



message. I have demonstrated elsewhere (Maxwell 2004) that the elusive authorial naming in fr. 146 conceals the name of Charles de Valois, brother of Philip IV and uncle to Philip V. Valois was a major actor in the overthrow of Marigny (a likely model for the character Fauvel), and Philip (V) owed his successful negotiations for the regency and succession in large part to the support of Valois. While the manuscript was undoubtedly produced by a collective, if anyone had the financial wherewithal and political clout to back such a project, it was Charles de Valois.

### **Theory in Performance: A Multimodal Analysis of the Opening 10v–11r: A Reflection of Kings and Beasts**

I will now turn my attention to a single opening in the *Roman de Fauvel* in order to demonstrate the cognitive ecology of authors, compilers (including scribes and artists), readers and book. A multimodal analysis of this opening requires the reader to recreate the text, and the reader's cognitive engagement is itself dictated by the nature of the object under study – here, the manuscript book. In this way, I as a modern-day reader become part of the cognitive ecology that is revealed by my act of analysis.

The model I use for my multimodal analysis is that presented in Maxwell 2015, where the generic term 'mode' is refined into 'cultural practices', 'semiotic resources' and 'elements'. I have already outlined much of what we can consider to be the cultural practices – here, reading and writing practices together with the sociopolitical context – surrounding the *Livre de Fauvel*; however, the opening I will consider here, fols. 10v–11r (Plate 6), employs these on a more detailed level. The opening shows the end of an extended authorial intervention that falls between books I and II of de Bus's *Roman de Fauvel* from 1310. Fr. 146 marks this break by a rondeau and two motets (one introduced by a rubric), a series of author portraits, and a textual epilogue to the first book. Fol. 10v shows the end of the epilogue, the rubric, and the two motets (the second continues on to 11r, but the two voices presented on fol. 10v could stand alone, as could the two on 11r; see Dillon 1998: 220). Fol. 11r also contains the opening of the second book, together with its first additions: the introductory rubric, the author image, the conductus 'O labilis fortis', and the image of Fauvel enthroned.

The cognitive ecology is visible on this opening in the prominent physicality of the *livre* in the miniature of the tonsured clerk holding his book on folio 11r. Here is an author portrayed reading his book, mouth closed, legs crossed, eyes focused on the book. This authorial image symbolises the embedding of the physical object into the process of its own creation. The tonsured clerk's garments are those of his profession which mark him as lower in social status than the glove-holding nobles, reaching impotently towards him across the arched divide that separates his world from theirs. The clerk is presented as larger, as tall seated as the nobles are standing. A symbol of the collective behind the *livre*, the clerk is presented as an educated reader, separate from the bookless 'others' outside of the cognitive ecology. The knowledge, the book, belongs to him and, by inference, to all readers who engage in the contemplative and cognitive reading he models.

Indeed, we can think of this clerk as our model for the embedded creativity that I propose is at work here. At once reader and compiler, he is pictured in active contemplation of the book. This book, the information it contains, is both inside and outside of his mind-body sphere – he is cradling it in his crossed limbs, turning the pages, and consuming it with his eyes. The mind-body-book relationship is dynamic and reciprocal. As reader, the information is helped to enter his mind, his memory, through both the structure of the individual folios and the divisions of the book as a whole. As a compiler of this (and other) texts, he builds on the knowledge thus accrued to create more, and so the cycle continues as long as the book is read and its information interpreted and recreated by attentive readers. This model does not present a fast boundary between the mind, the body and the book; rather, it shows how each of these are intertwined with the others in a cognitive ecology, where each reader recreates the text anew.

My recreation of the text proposes that folios 10v and 11r can be read as mirrors of each other. This interpretation is built on the premise that the book is part of the cognitive ecology, and that the physicality of the object that is the book is an external but essential part of the creative process. The mirror is imagined at the point where the folios meet, the centre of the opening. The device of the mirror is a literal interpretation of the medieval tradition of the mirror of princes, in which advice was given to newly crowned kings. Given the context of *Fauvel* in the wake of the crisis of succession of the Capetian royal line, the *livre* can indeed be considered as part of this tradition. This mirror, though, employs biting satire: the beast *Fauvel* is not an image one wants to see reflected. In addition, the emerging *ars nova* musical forms delighted in manipulating space and time. Examples of this include the frontispieces to the Chantilly codex, where one song is presented in the shape of a heart and another in a circle, and the word-layout-music networks of Machaut's 'Ma fin est mon commencement'. Asking readers to join in a complex game of multimodal interpretation is far from unique to *Fauvel*.

The end of the triplum to the motet 'Servant Regnum / O Philippe / Rex Beatum' reads as follows (fol. 10v, column c):

Bona terra cuius rex nobilis  
 set ve terre si sit puerilis.  
 Melior est pauper et sapiens  
 atque puer quam rex insipiens.  
 Rex hodie est et cras moritur;  
 iuste vivat et sancte igitur.

Good [is] the land whose king is noble, but woe to the land if he be childish. Better poor and wise and a boy than a foolish king. Today he lives and tomorrow he dies. Therefore let him live justly and holily.<sup>9</sup>

<sup>9</sup> For this motet I use the edition and translation provided in Dillon 1998.

Due to the cultural practice of memory training, educated medieval scribes and readers (such as our clerk) would be able to supply from memory the reference to Ecclesiastes 10: 12–17:

Words from the mouth of the wise are gracious, but fools are concerned by their own lips. At the beginning their words are folly; at the end they are wicked madness – and fools multiply words. No-one knows what is coming – who can tell what will happen after them? The toil of fools wearies them, they do not know the way to the town. Woe to the land whose king is a child, and whose princes feast in the morning. Blessed is the land whose king is of noble birth and whose princes eat at a proper time – for strength and not for drunkenness.<sup>10</sup>

With this link, which relies on the cognitive ecology at work here to reveal its deeper meaning, the motet triplum becomes not just a warning to the new king from the safe ground of Ecclesiastes, but a lament that his nephew died so young. In my mirror reading, the empty staves over the last lines reflect the tight-lipped clerk in the authorial miniature: ‘the music, it seems, falls silent, not daring to sound the most controversial message of the piece’ (Dillon 1998: 223). For, as Dillon shows (1998: 221–4), the triplum and motetus voices juxtapose through their music and their texts the ‘rex sapiens’ (the infant Jean) and the ‘rex insapiens’ (Philip V). Reading this triplum with the mirror image in mind, we can take this contrast even further.

As well as the authorial image of the reading clerk, the reflection on 11r (column a) shows the tenor praising St Louis,<sup>11</sup> and an authorial rubric. The rubric marks the divide between the two books of *Fauvel* and gives an overview of what is to come in the story. This is an example of the embedded creativity in action on this opening, in which the technology of the book itself is manipulated in such a way that it becomes an essential part of the creative (and recreative) process. Through a multimodal engagement with it, the reader learns what will befall the kingdom of France should its new king not be wise enough to consume the text presented in the book with the right intentions and at the proper time.

Yet there is more, for the most heretical message is still to come. Again, drawing on the cognitive ecology at work here, the educated medieval reader would know that the tenor of this motet, given at the bottom of folio 10v (column c), ‘Rex regum, dominus dominacium’ (‘King of kings, lord of lords’), is a quotation from the chant for the second Sunday of advent and from Revelations 19: 16 (Clark 1996: 128–9). This text refers to the second coming of the Messiah, in keeping with the apocalyptic theme running throughout *Fauvel*. In the mirror scheme I propose here, its presentation on fol. 10v reflects the opening of book II of the *roman*, the

<sup>10</sup> Noted in Dillon 1998: 222, citing Emilie Dahnk’s 1935 edition of the *Fauvel* interpolations.

<sup>11</sup> The music to the tenor is presented twice, so that the motet can be considered as either a three-voice motet over two folios, or two two-voice motets, one on folio 10v and the other on 11r. The text is only given in the first presentation, at the bottom of 10v (column c).

second coming of Fauvel. This second coming is then depicted in an image which was politically scandalous: Fauvel on the throne of France.<sup>12</sup>

This image of Fauvel enthroned is placed at the very centre of fol. 11r, from which it stares out at and commands the attention of the reader. In the mirrored layout, it reflects the motetus of the other motet on this opening, 'Se cuers / Rex beatus confessor / Ave'. This voice first sings the praises of St Louis, the 'rex beatus' ('saintly king'), the canonised Louis IX of France.<sup>13</sup> It then appeals to a reader of the same name, presumably Louis X, Philip V's deceased brother (Brown 1998: 58–9). Reading even more closely, the head of the beast Fauvel is placed such that it is reflected in the mirror by the words 'conregnant in celi culmine / ergo nos' ('reigns with him in highest heaven / therefore we'). Here, 'ergo' marks the transition in the motetus from praising St Louis to his descendant of the same name. Normally, the 'nos' is presumed to be an error for 'ergo vos qui sub pari nomine': 'therefore you who share his name'. In the context of the reflection of Fauvel on the throne, letting 'nos' stand as 'we' brings Fauvel himself even further into the French royal line, into the communion of St Louis, the holy centre of the royal house of France.<sup>14</sup> This idea is pursued under the image of Fauvel on fol. 11r, where we read in the text:

Un jour estoit en son palloys  
 Fauvel, qui ne pert pas galloys,  
 Tout ait il eu païs de Gales  
 Chasteaux, danjons, manoirs et sales,  
 Entour ly avoit grant plenté  
 De gens, tous de son parenté,  
 Car il n'avoit de son mesnage  
 Nul qui ne fust de son lignage. (Långfors 1914–19: 1245–52)

One day Fauvel, who had not lost the Gauls, was in his palace. He owned everything in the Gallic country, castles, donjons, manors, rooms. He was surrounded by people, all related to him, for he had no-one in his household who was not of his line.

These lines, which in the reflection take up the space of the rest of the motetus 'Rex beatus', could not be more damningly placed: the relation of St Louis's line

<sup>12</sup> For an image of the French royal seal that was in use at this time, and a discussion of how the image on fol. 11r is a blatant copy, see Kauffmann 1998 (290 for the seal).

<sup>13</sup> My translations and transcriptions for this motet are based on Brown 1998, Rose-Steel 2011 and Ricketts 1991.

<sup>14</sup> The 'vobis' that occurs later in the motetus is not written as 'nobis', however. Similarly, although the written 'nox et vita' for 'vox et vita' does make some sense, it is probably explaining away errors a step too far to pretend that 'night' is a better reading than 'voice' in this case. That the 'nos' is probably a scribal error does not mean that it cannot be interpreted, however; it was, after all, left uncorrected.

to that of Fauvel is clear. The reading continues into the tenor line, 'Ave'. Instead of praising (St) Louis, its mirror image details Fauvel's decor: 'semblant fin, mez ne le fut mie' ('seemingly fine, but was not at all'). The description of the fake glory of Fauvel's court is thus placed such that it is the mirror of the tenor (falsely?) praising St Louis.<sup>15</sup> As if this were not enough, the text introducing the motet for Philip V is also placed here: 'Pour Phelippes qui regne ores / si metreiz ce motet onqueres'. These lines, which emphasise Philip 'who now reigns', sit uncomfortably in the belly when consumed with the 'Ave' for St Louis reflected in the description of Fauvel's false court. Once again, this opening brings the reader firmly into the cognitive ecology, through the tool of the semiotic resource of page layout which this multimodal analysis shows was an essential part of the creative process. For it is not enough here to engage with only one of the book's modes – to read only the words, sing only the melody, look only at the pictures. In order for the cognitive ecology to function, the reader has to engage with the multimodality of the opening – embedded in the technology of the medieval book.

The triplum 'Se cuers' (fol. 10v, column a) has a less straightforward reflection. As one of only two bilingual motets in the entire manuscript, the imposition of French, the language of Fauvel, on to the very opening of this royal motet is a clear use of the semiotic resource of the vernacular.<sup>16</sup> 'Se cuers' speaks of the delights and desires of youthful love. It therefore contributes to the cognitive ecology at work here by bringing in the common language of the land, and the common experience of love. In the context of the depiction on this opening of kings wise and false and foolish, we are here firmly in the domain of Louis X, whose hasty second marriage, following his first wife's adultery and convenient death, was well known (and is satirised at much greater length later in the manuscript, as well as mentioned in the authorial rubric on fol. 11r).

Reflecting 'Se cuers' in the mirror image on folio 11r is the conductus 'O labilis'. The speed of 'Se cuers' contrasts with the reverential pace of the conductus, a genre designed to be sung during the liturgy as the gospel was carried to the lectern – again, the layout of this folio draws on the common, cultural practices of the cognitive ecology. In contrast to the fast-moving, courtly French text and music of 'Se cuers', 'O labilis' is a solemn Latin poem on mortality and the dangers of luxury and excess. The levity of 'Se cuers' is seen even in the elements: the breve divides into two, rather than the more solemn (and religious) three of 'O labilis'. A multimodal reading of other elements in play allows us to see the alliteration in these two pieces. 'Se cuers' plays on 'ioans, ionnes, iollis' and 'gentil' ('joyful, young, attractive' and 'noble') at repeated points. 'O labilis' uses the same emphatic device but with an entirely different focus: 'labilis', 'labitur', 'labori', 'laqueos', 'laberis', 'illicite', also 'lux', 'luxu', 'luxibus' ('transient', 'toil', 'snare',

<sup>15</sup> It has been claimed that the tenor 'Ave' comes from the office for St Louis, but no source has been found. See Clark 1996: 122–8.

<sup>16</sup> For a discussion of the *Fauvel* motets in or including French see Rose-Steel 2011: 101–4 and Bent 1998.

‘fall’, ‘illicit’, ‘light’, ‘luxury’, ‘excess’). ‘O labilis’ contains contrasting imagery that is relentless and clear: ‘Flens oritur, vivendo moritur / In prosperis luxu dissolvitur’ (‘He arises weeping, he dies by living / amid prosperity is destroyed by luxury’) in the first stanza; ‘Ha, moriens vita, luxu sopita / Nos inficis, fellitis condita’ (‘Ah, dying life, drugged by luxury / laced with gall, you poison us’) is the refrain which is heard three times.<sup>17</sup> Not only does this stand in contrast to ‘Se cuers’, ‘O labilis’ is also a firm commentary on Fauvel’s false court as described by the *roman* text in the adjacent column. In these signals to the attentive reader at the level of the smallest detail – the ‘elements’ in a multimodal analysis – the cognitive ecology is again at work.

It is at work on the larger scale too, where the external technology of the layout of the page is embedded into the creative process such that the reader meets a king surrounded by his courtiers on both of these folios. The layouts of 10v and 11r are planned so that the ‘Rex beatus’ (St Louis) lies in the middle of 10v, whereas on 11r it is the beast Fauvel who literally takes centre stage. St Louis is flanked by his kingly descendants – the youthful and loving Louis X and the wise/unwise infant Jean I and Philip V. Fauvel is surrounded by Philip V, our clerkly author/reader and those who are reaching for his book, the call to learn about Fauvel (discussed below), the description of his court, and ‘O labilis’. While the primary contrast in this distorted mirror of princes is of course that between St Louis and Fauvel, their entourages cannot be overlooked. These are busy folios with a clamour of different voices and a myriad of visual symbols fighting for the reader’s attention, but, as this analysis shows, the mosaic of meaning is such that even the most cursory of readings could not fail to pick up the didactical tone. That two of the three musical items on the opening are motets, with plural voices singing together, is a further symbol of the cacophony: humans are adept at tuning in to one voice in the midst of others (the so-called cocktail-party effect), and, as Anna Zayaruznaya has shown, this also holds true for the polytextual motet (2010: 93–104). Indeed, it also holds true for this opening. The motets and the solemn warnings of ‘O labilis’ together make up a cognitive soundscape in which voices can be imagined sounding in isolation or together. The reader can choose to focus on one at a time or to listen to their overall clamour. The layout of the opening is therefore a fundamental part of the creative and recreative processes; the very format of the book is a tool that constituted a major part of its own creation.

There are two parts of this opening that this analysis has not yet covered, and they correspond to one another. The text that closes book I of the *roman* is found at the top of the first two columns on fol. 10v in what seems to have been a deliberate decision – another example of embedded creativity where the creative process is influenced by the external technology of the book – to make the *roman* text run over the top of both columns. This means that it serves to introduce the whole of this opening, relegating the ‘Pour Phelippes’ introduction to the bottom of the page where it can do more reflective harm, as we have seen. More significantly,

<sup>17</sup> The translations here are from Rosenberg and Tischler 1991: 48.

this means that this folio of motets starts with the line ‘Recitant de lui un motet’ (‘reciting to him a motet’). Who is the ‘lui’? The last name mentioned was St Louis, in the immediately preceding lines at the bottom of fol. 10r, yet these lines in fact focus on Philip IV. So, is ‘lui’ Louis or Philip? Margaret Bent raises the possibility that a third royal motet was planned to go here, for Philip IV (Bent 1998: 49). In fact, I think that the ambiguity is deliberate, in keeping with the wealth of interpretations on this opening, and, of course, the wordplay lui/Louis. Philip IV and V, Louis IX and X: Fauvel sits opposite them all, ‘mocking them in royal majesty from their throne’ (ibid.).

Book II of the *roman* starts with the decorated initial under the author image on 11r, and its introduction is formed of these lines plus the text above the miniature of Fauvel on the French throne. The opening to the second book stresses the importance of the Fauvel story being known throughout history:

Mès pour ce que nesessité  
 Seroit a toute humanité  
 De Fauvel congnoistre l’ystoire  
 Et bien retenir en memoire  
 Car il est de tout mal figure  
 Et, si com nous dit l’escripture,  
 Nul ne puet bien eschiver vice  
 S’il ne congnoist ainçois malice (Långfors 1914–19: 1229–36)

For this reason it is necessary that all humanity knows the story of Fauvel, and must keep it well in mind, for he is made up of all evil and, as scripture says, no-one can avoid vice unless they can recognise malice.

This stress on the cognitive act of remembering well (‘congnoistre l’ystoire / et bien retenir en memoire’) is significant. Immediately before the image of the beast enthroned, we are reminded of the didactic purpose of the tale itself – a purpose that the multimodal additions serve and highlight. For the cognitive ecology of the medieval book includes the reader, who must properly digest and act upon the message of the whole *livre*. Without the reader, the cognitive ecology does not function. If the reader fails to use the book and their own embedded cognitive creativity to take the next step, the manuscript is nothing but decoration, and the beast Fauvel will remain on the throne.

## Conclusion: E(r)go nos

Through my multimodal analysis of the manuscript opening shown in Plate 6 I have both revealed and taken part in the cognitive ecology of the *Livre de Fauvel*. The analysis has brought to light a host of meanings, and certainly not all of these can (or should) be considered as hidden secrets planted by the manuscript’s compilers, waiting to be found by the attentive reader. Rather, what I have shown is the

reader's embedded creativity in action through the cognitive ecology of the medieval book. It is on this that I, as a reader, have built my recreative reading based on the internal factor of my prior knowledge (memory), together with the external factor of my reading of the book. Like the clerk on folio 11r, this has necessitated both internal, quiet contemplation and the use of external tools. I have not used the *livre* as a temporary storage repository for excess information; rather, it has been the foundation for my own creative enterprise.<sup>18</sup>

I do not claim here that my reading is the same as that of a medieval reader. Rather, it is my contention that a multimodal analysis such as this one allows the modern-day reader to take part in the cognitive ecology on the terms of their own time. I did not have the references to Ecclesiastes or Revelations stored in my memory as the *livre's* educated medieval audience would have done, but I did remember them mentioned in the work of other scholars, which I knew how to retrieve. Here, then, Wheeler's 'entangled inside-and-outside logic' of embedded creative cognition again comes into play. My partaking in the cognitive ecology of the *Livre de Fauvel* was deepened by the use of other books, which replaced, for me, fluency in Latin and the memorised Bible. In Andy Clark's terms (2003), I was a 'natural-born cyborg', for I traded access to this information for its onsite storage. In return, I have contributed to the ecology's dynamic dialogue by recreating the text from a new standpoint drawn from my own memory, that of the multimodal reading of the opening 10v–11r as a mirror of princes.

I therefore wish to finish by drawing some links between modern reading practices and the medieval artefacts we seek to understand with some thoughts on the further uses of this combined methodology. The detailed analysis and methodology I have presented here has covered, at some length, virtually every aspect of a single opening of a manuscript. I could not have done this without the technology that has opened medieval books to a much wider audience than ever before. This has broadened their readership and, as a result, seen the emergence of new cognitive ecologies surrounding medieval artefacts (for just a handful of recent examples see Bychowski 2014; Kim 2016; Ma 2012; Watt 2016; Whitaker 2015).

We cannot know for certain whether Philip V read fr. 146, but by its very existence we do know that it was made and preserved – and such a manuscript was not made, or preserved, for no reason. While it can therefore take its place in the wider scheme of manuscript production, *ars nova* notation, textual repositories, art history, and all of the other historical narratives to which it belongs, the *Livre de Fauvel* is also an object in and of itself which resonates meaning across the centuries. An understanding of the *livre* as being part of a cognitive ecology serves to emphasise the concerns of the object's makers and users over time. Indeed, while we cannot fully understand the very real concerns of the educated and noble servants of the

<sup>18</sup> This enterprise has, of course, made extensive use of another tool: the computer. I consider more fully the status of the digital manuscript in Maxwell (forthcoming), but I will note here in passing that, were anyone to produce an author portrait of me writing this article in the style of that of our clerk on folio 11r, it would show me cradling not a book but a laptop.



French crown in 1316, we can nevertheless consume their texts and learn from what they have to say to us. As I write, 700 years on, there is a terrifyingly real prospect of Fauvel once again in power: a tan-coloured deceiver, who is lauded and courted by those who serve only their own self-interests and greed, has his eyes on one of the most important leadership positions in the world. The image in the *livre* of Fauvel's offspring washing in the fountain of youth is all too true, of this or any time in history. We humans are swayed by strong words and crave strong leaders in times of perceived trouble and change (Greenaway 2015). Fauvel's creators knew this as well as did Freud. E(r)go nos. We would all do well to consume the message of the *Livre de Fauvel*, and let it change us, so that we can better work to change our world.

## Distributed Cognition, Improvisation and the Performing Arts in Early Modern Europe

*Julie E. Cumming and Evelyn Tribble*

The feats of skill undertaken by performers in the early modern period seem extraordinary. How could a singer in early-seventeenth-century Spain improvise three voices simultaneously, one through voice and the other two displayed on the hand? How could dancers memorise complex choreographies, while introducing improvised variations? How did actors in the 1590s in England perform up to six different plays a week, with a degree of skill that was said to ‘excel all others in the world’ (Moryson 1967: 476)?

We cannot answer such questions either by positing some mystical level of genius utterly out of reach today, or by invoking a deficit model that discounts these achievements. Instead, approaching such questions through the lens of distributed cognition permits a full account of the nature of such feats of skill and memory. As Kirk Michaelian and John Sutton define it, distributed cognition posits that ‘remembering does not always occur entirely inside the brain but is often distributed across heterogeneous systems combining neural, bodily, social, and technological resources’ (Michaelian and Sutton 2013: 1). Distributed cognition is a way of looking at how thought works, how it is spread across bodies, environments and social structures. For this reason, as Ed Hutchins remarks, ‘distributed cognition is not a kind of cognition; it is a perspective on all of cognition’ (Hutchins 2014: 36). A poet recounting an epic tale in a society without writing; a child reciting a poem in a pageant; a stand-up comic fighting the crowd; a politician delivering a stump speech; a sports team winning the divisional game; a trainer and his dog competing in agility; a *commedia dell’arte* troupe; a family performing music from partbooks – all are engaged in forms of distributed cognition, albeit with very different assemblages of material, social, bodily and neural resources.

The nature of such assemblages varies historically, according to the kinds of material and social resources at hand and how they are deployed. The availability of, for example, paper and books, skilled scribal labour, systems of tutelage and instruction, and spaces engineered for human voice and movement, shape and constrain human creativity and performance. This is an especially important point for understanding the role of improvisation in the arts in early modern Europe. Improvisation was valued across the arts in Renaissance Europe, in disciplines

including musical performance, dance and theatre. While today improvisational theatre ('improv') eschews any scripted performance, relying instead upon spontaneous response within the conventions of the genre, improvisation in the medieval and early modern period involved mastering and building upon highly patterned and scripted foundations: 'improvisation in this period would be inconceivable without rigid constraints' (Pietropaolo 2003: 17).<sup>1</sup>

Constraints are often thought of as impediments, but they are absolutely crucial to skilled performance of all kinds. Indeed, Hutchins's model of a distributed 'cultural-cognitive ecosystem' or 'cognitive ecology' places constraints at its centre (2014: 45). He argues that 'constraints exist in many places and interact with one another through a variety of mechanisms of constraint satisfaction. Some of these are neural mechanisms; others are implemented in material tools, and still others are emergent in social processes of collective intelligence, the development of conventions, for example' (45–6). A constraint – whether the notations on a page, the affordances of a musical instrument or of the human body, the space of performance, or the emergent configuration of bodies moving in time with one another – functions as a powerful sticking point around which complex assemblages are formed. As Teemu Paavolainen suggests, mind or cognition in this context is to be understood as 'a process continuously interweaving body, brain and world, rather than an object that one could neatly localise in some privileged part of its ongoing texture' (2016: 85).

Another element in this distributed system was the knowledge and expertise of the audience. While the most sophisticated improvisation and embellishment was the province of highly trained professional performers, many audience members would have had some training and experience: over the course of the sixteenth century, music education became required for both the aristocracy and the merchant class; social dance was practised by all classes; and printed play texts were read aloud in people's homes (Straznicky 2006: 73). Improvisation and embellishment therefore took place within a distributed cognitive ecology of attention and training, for it took a skilled audience to recognise the baseline on which performers improvised and embellished, and to appreciate the imaginative and idiosyncratic nuances of any such act.

In what follows we explore performance and improvisation in early modern music, dance and theatre, aiming to describe the particular assemblages of behaviours and affordances that underpinned both expert and amateur performance in this period. Music receives the most attention, due to both a wealth of source material, and the fact that it has rarely been considered in relation to distributed cognition. In all these arts, improvisation and spontaneity were more highly valued than virtuosic skill or rote memorisation; to be a performer was to be an improviser, and that improvisation always involved interaction with other performers and with a given 'text': a score, a choreography or a play text.

<sup>1</sup> On constraints and memory, see also Rubin 1995.

## Improvised Polyphonic Music in the Renaissance

The astonishing feats of improvised polyphonic music by early modern musicians were produced by complex assemblages that included the material text of the large notated chant book; the base level of musical training underpinning the skilled practices; the skilful coordination of multiple singers; and evolving conventions of musical structure and embellishment. Complex early modern improvisation takes place within the highly constrained daily practice of liturgical music in the Middle Ages and Renaissance. Catholic church musicians (from six-year-old choirboys to seventy-year-old canons) sang a yearly cycle of prescribed chants for Mass and Office. While in the Middle Ages this cycle of chant was largely sung from memory, increasingly this very large body of chant was sung from a large choirbook, often elegantly decorated or illuminated.<sup>2</sup>

Already in the ninth century church musicians began to add melodies above or below the chant, creating polyphonic music. With the rise of large choirbooks, however, these techniques became more widespread and elaborate, and improvisation was called ‘cantare super librum’ (‘singing on the book’) – the choirbook afforded the improvisation. Treatises or instruction manuals described techniques of improvising a new voice against a chant melody: adding a new note (*punctus*) against (*contra*) each note (*punctum*) of the chant melody (whence ‘counterpoint’ – *contrapunctus*) (Fuller 2002). From the beginning there were strict rules about the acceptable vertical intervals and melodic motions of the added voice; these rules changed over time.<sup>3</sup> Over the course of the fifteenth and sixteenth centuries we find more and more elaborate types of improvisation described in treatises; we also find traces of those improvisatory techniques in composed music.<sup>4</sup>

Improvisation was a fundamental musical skill that informed all musical activities: reading, performing and composing music. These practices became the spine of complex feats of musical accomplishment, a shared set of mental and bodily practices that provided the scaffolding against which complex group improvisation could take place. Choirboys (and sometimes girls) were taught to improvise against a plainchant as part of their basic musical training (along with learning Latin and memorising the psalms) (Flynn 1995; Boynton and Rice 2008). Our evidence for this is found in treatises that describe the process of improvisation, in archival records describing the duties required of singers and choirmasters, and in images of performance. The first step was to learn the various names and sounds of the notated pitches shown in the choirbook; this was done with the ‘Guidonian hand’, a map of the pitches on the joints and tips of the fingers of the left hand, which

<sup>2</sup> For an example of a sixteenth-century chant manuscript from Namur, Belgium, go to <<http://salzannes.simssa.ca/>> (last accessed 5 December 2018).

<sup>3</sup> It is only recently that scholars have gone deeply into the study of specific techniques of improvised counterpoint. See Wegman 1996; Schubert 2002, 2014; Cumming 2013b; Canguilhem 2011, 2016.

<sup>4</sup> Schubert 2002, 2014; Cumming and Schubert 2015; Cumming 2011, 2013a.

led in a spiral starting at the tip of the thumb.<sup>5</sup> Young musicians could sound out melodies using the hand, or the choirmaster could point to the pitches on his own hand to indicate which pitches the singers should sing (Canguilhem 2009).

The term ‘cantare super librum’ describes the process of looking at a notated chant melody in a choirbook and singing a new melody against it.<sup>6</sup> The notated chant book provides the basic material structure for the practice of improvising new melodies against it; see Figure 12.1 below, which shows a choir looking at a chant melody with the text *Benedicamus domino* in a large choirbook. Recently scholars and performers have begun to revive the practices.<sup>7</sup> We can describe the process of improvising – i.e. the cognitive ecologies of material, social and mental (or neural) resources that underpinned the practice – based on primary source descriptions and on Cumming’s experience learning and teaching Renaissance improvisation.

The master of the choirboys was responsible for training the boys and directed the improvisation. He would set the tempo, keep the beat, and signal special musical situations that required special pitch choices, by singing or through pointing to a joint on the left hand. Older singers could also stand behind choirboys and indicate rhythm and pitch through touch and example. In addition to looking at the chant in the book (and also at the choirmaster) and calculating what melodic interval to sing to get to the next pitch, everybody had to listen hard to the other singers on their own part, and to all the other voices to make sure that they were doing the right thing. Choirboys would correct themselves, and the choirmaster could also correct them by pointing to the right note on the hand. Such a system is in keeping with Hutchins’s description of the ways that a distributed cognitive ecology can embed novices within a sophisticated framework that enables performance far above the level that might be predicted from the skill level of the individual:

[O]ne can embed a novice who has social skills but lacks computational skills in such a [complex] network and get useful behaviour out of that novice and the system . . . the task world is constructed in such a way that the socially and conversationally appropriate thing to do given the tools at hand is also the computationally correct thing to do. That is, one can be functioning well before one knows what one is doing, and one can discover what one is doing in the course of doing it. (Hutchins 1995: 224)

<sup>5</sup> For a fifteenth-century guide to singing using the Guidonian hand, see Tinctoris, *Expositio manus*, <[http://www.stoa.org/tinctoris/expositio\\_manus/expositio\\_manus.html](http://www.stoa.org/tinctoris/expositio_manus/expositio_manus.html)>; for a video of William Mahrt pointing while singing, see <<https://www.youtube.com/watch?v=RlleweQuq14>> (both last accessed 5 December 2018).

<sup>6</sup> For descriptions of these practices based on primary sources, see Busse Berger 2005; Duffin 2013; Flynn 1995; Canguilhem 2016; Polk 1992; Sachs 1983; Scattolin 1979. For traces of these techniques in composed music, see Cumming 2011, 2013a; Cumming and Schubert 2015.

<sup>7</sup> These include Jean-Yves Haymoz, co-founder of the ensemble *Le Chant sur le livre*, whose practice is described in Janin 2012; Berentsen 2014; Duffin 2013; Schubert (see nn. 8 and 9 below).

In one technique, known as fauxbourdon, two voices are improvised in mostly parallel motion against a chant (normally vespers hymns and other liturgical music) (Trowell 1959; Trumble 1959; Guilielmus Monachus 1965; Park 1993: 159–61). The top voice looks at the chant book and sings the chant melody. This singer might adjust the durations of the chant pitches to fit into a regular metrical framework, and add some embellishments, such as passing tones and cadential ornaments at the end of each phrase. The lower voice sings in parallel sixths below the chant melody, beginning and ending each line with an octave. In order to do this, the tenor looks at the chant melody in the book and imagines a line notated a third above the chant melody, but sings it an octave lower, which produces parallel sixths. If the tenor visualises the *same* note as the superius at the beginning and end, he will produce the required octaves. This process of imagining another voice on the staff is known as ‘sights’ in English treatises (Busse Berger 2005: 201–20). The middle voice looks at the chant melody and sings the same melody a fourth below. All three are ‘singing on the book’. This is a highly constrained form of improvisation – and those constraints make it quite easy to do. We can get an idea of what improvised fauxbourdon sounded like by listening to a composed hymn setting by Guillaume Dufay, whose hymns use fauxbourdon texture, but embellish the melody and vary the pitches in the tenor line more than might be found in improvised fauxbourdon hymns.<sup>8</sup>

Another technique is improvised canon, where one voice sings a melody, and the second voice sings the same tune, but starts later (and often on a different pitch). It is possible to invent a tune that will always work as a canon after one beat, if you limit your tune to certain melodic intervals. For example, if you are doing a canon where the second voice starts a fifth below, you must limit your melodic intervals to seconds and fourths up, and thirds and fifths down, as well as repeated notes (unisons) (Milsom 2005 has named this technique ‘stretto fuga’). Renaissance treatises explain how to embellish the basic structure, with ties, passing tones and dotted rhythms; and how to add a cadence to the end. This will create a pleasing canon in Renaissance style.<sup>9</sup> Two different skills are required: the lead singer must

<sup>8</sup> For a video showing the music notation for a Dufay hymn in which chant verses alternate with fauxbourdon, see ‘Ave maris stella’, performed by Pomerium, available at <<https://www.youtube.com/watch?v=6mcxEtyEUw4>> (last accessed 5 December 2018). For a related technique, in which a bass line is improvised under the parallel sixths, see the video performed by Peter Schubert’s choir, VivaVoce, available at <<https://www.youtube.com/watch?v=I8wLxWnT-DAE>> (last accessed 5 December 2018). Here you will hear three verses: (1) monophonic chant melody; (2) organ improvisation with an added voice above the chant (Rona Nadler); (3) the parallel sixth model for four voices with VivaVoce.

<sup>9</sup> Schubert (2002: 518) has posted an instructional video series on improvising canons and a concert improvisation by VivaVoce. Two voices, fifth above, <<http://www.youtube.com/watch?v=n01J393WpKk>>. Two voices, fifth below, <<http://www.youtube.com/watch?v=nxJa9YDP3MU>>. Two voices, Kyrie/Christe/Kyrie with VivaVoce, <<https://www.youtube.com/watch?v=NPkvISqBphI>>. Three voices, down a fifth, up an octave, <[https://www.youtube.com/watch?v=eu\\_-OfAABHw](https://www.youtube.com/watch?v=eu_-OfAABHw)>. Other possibilities, <<https://www.youtube.com/watch?v=w664qFsO9gg>>. Agnus Dei, with VivaVoce, <<https://www.youtube.com/watch?v=2pQfblKV-PE>>. All last accessed 5 December 2018.

be able to invent a tune following the rules, and to provide embellishments; the follower must be able to listen to the leader and sing the same tune a beat later and a fifth lower. Both require extreme concentration and musical skill, but the constrained choices for melodic motion provide the sticking points which help to organise the assemblages of material, environmental, social and neural resources needed to produce such satisfying improvised music.

Some early modern musicians could do astounding feats of improvised polyphonic music. Perhaps the most impressive documented account comes from tests undertaken by the candidates for the chapel master position at the cathedral in Toledo in 1604, described and translated by Philippe Canguilhem (2013). The most important skill was *contrapunto* – what we used to think meant written counterpoint, but which we now know meant improvised polyphony (Schubert 2002: 503; Polk 1992: 167; Salmond 2016: 27–30). Examples of *contrapunto* included improvising a canon below a chant melody, or improvising a new voice against a duo, trio or quartet, all in real time. The most challenging test involved improvising three voices at the same time against a chant melody: one is sung, and two are shown on the hand (Canguilhem 2011: 55–8, 102–3). These tests point to highly developed skills in individual improvisation – but perhaps even more amazing is vocal ensemble improvisation, where two to five people improvise independent melodies against a chant melody, maintaining correct counterpoint (avoiding dissonances and parallel fifths and octaves) among the voices.<sup>10</sup> These would have been adult singers, normally one on a part. Each singer would have been an expert in whatever role he played (adding a top voice, adding a lower voice, leading a canon, or following). Here each singer could signal to the others an upcoming move that would affect the pitch choices of the other voices.

These are just a few of the many improvisatory techniques practised by Renaissance musicians. While it was daily fare for church musicians, all musical training included some basic improvisatory experience (just as modern music education normally includes some music theory). The fact that improvised counterpoint was part of the basic training of musicians affected all aspects of music-making for all kinds of musicians, including singing composed polyphonic music from Renaissance choirbooks.

## **Singing Composed Polyphonic Music from Choirbooks**

A choirbook of polyphonic music is different from a chant choirbook, which shows only a single line of chant. In polyphonic music the choirbook shows all the different voice parts on one opening of a manuscript or print: each voice is copied on a different location on the page, and the voices are not lined up as in a modern score (see Figures 12.1 and 12.2 below). Choirbook format was standard for manuscripts of polyphonic music in the fifteenth and sixteenth centuries, and for some

<sup>10</sup> For examples see Chamaterò di Negri, 1574, in the Royal Library in Brussels, first described and discussed in Wegman 2014; see also Schubert 2014.

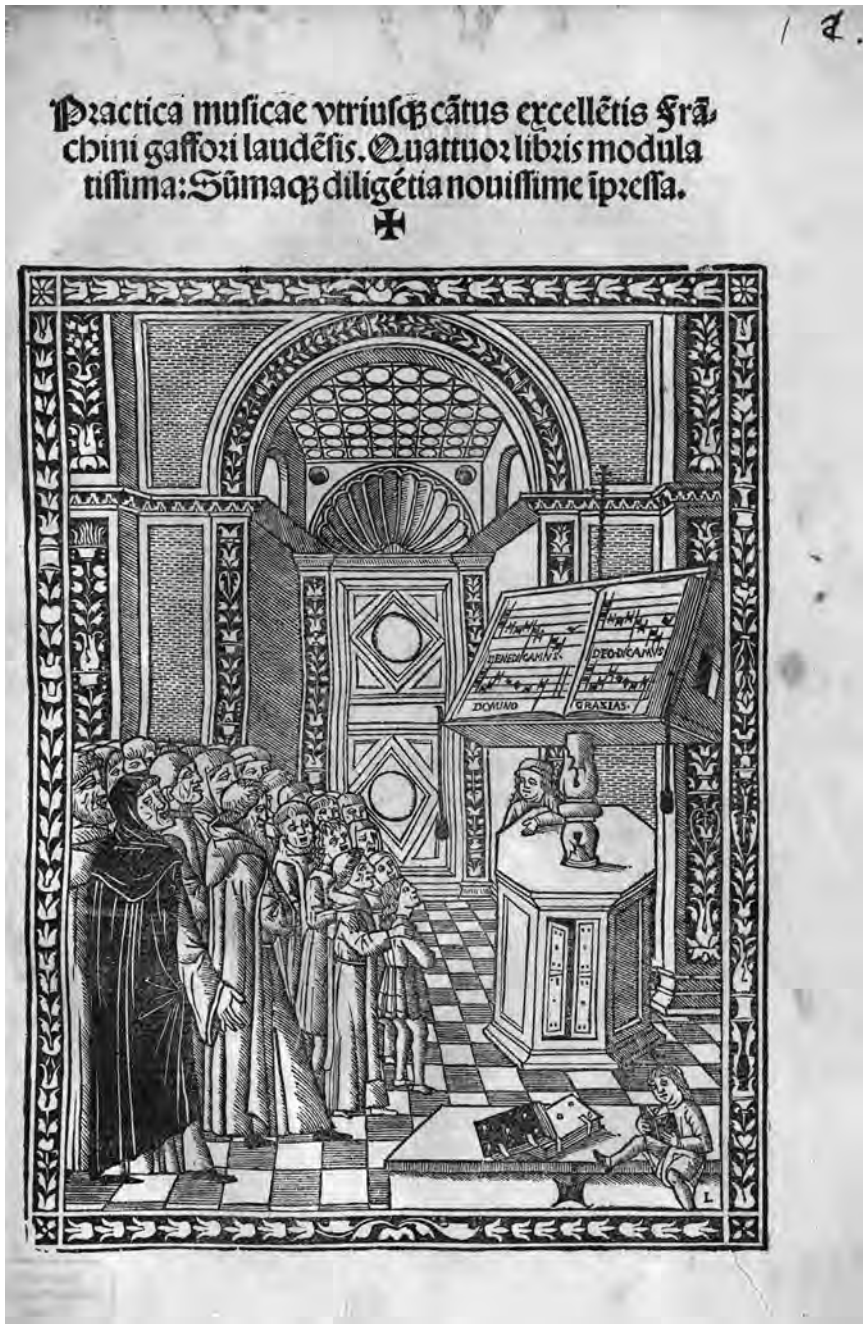


Fig 12.1 Franchino Gaffori, *Practica musicae utriusque cantus*, title page (Venice: Agostino Zanni, 1512). Bayerische Staatsbibliothek München 874915 2 Mus. th. 196, urn:nbn:de:bvb:12-bsb10148096-9, with permission. Digitised under the following licence: CC BY-NC-SA 4.0 <<https://creativecommons.org/licenses/by-nc-sa/4.0/>>.



(a)

Josquin de Prez.

**I**

In ui o la ta

in ui o la

ta in te gra

**3: F**

**I**

In ui o la ta

in ui o la ta in te

gra et ca sta es Ma ri

Fig 12.2a and b Josquin Des Prez, first opening of *Inviolata, integra, et casta es Maria*, from *Liber selectarum cantionum* (Augsburg: Grimm & Wyrnung, 1520; RISM 1520<sup>4</sup>), fols. 121v–122r. Senfl, Ludwig/Peutinger, Konrad: LIBER SELECTARVM CANTIONVM QVAS VVLGO MVTETAS APPELLANT SEX QVINQVE ET QVATVOR VOCVM, [Chorbuch], (Augustae), 1520 [VD16 S 5851]. Bayerische Staatsbibliothek München, 2 Mus.pr. 19,

(b)

12: C

1 2 2

A ui o la ta in te gra et ca.

6: F

1 2 2

A ui o la ta

in te gra et ca sta

es ma ri.

9: F

A ui o la ta in te gra et ca sta es ma ri.

urn:nbn:de:bvb:12-bsb00083822-1. Digitised under the following licence:  
 CC BY-NC-SA 4.0 <<https://creativecommons.org/licenses/by-nc-sa/4.0/>>.  
 Numbers in the score indicate the number of breve rests (= measures) before each voice enters; letters are the pitch of entry. Descending lines show parallel tenths in the outer voices.

prints once music printing for polyphonic music began in 1501. Choirbooks enable skilled musicians to visualise and hear in their heads the whole polyphonic texture, and they also lend themselves to specific ways of standing and interacting. Large choirbooks were normally used in churches, as we see in the 1512 frontispiece from a music theory treatise by Gaffurius (Figure 12.1). While in this image the singers are looking at a monophonic chant (and probably improvising against it), the same format was used for polyphonic music. The whole choir could read off one book; the performers stand close together, and look in one direction. Older singers tap the beat on the shoulders of the choirboys and could even sing in their ears if the boys got lost (Hatter 2011; DeFord 2015: 53–81). Before music printing almost all music was copied in choirbook format (though often the books were much smaller), because it allowed more than one person to read off a single copy of a book.<sup>11</sup> The format of the book affords certain musical and social behaviours and serves as a scaffold for distributed resources.

In order to understand the affordances of choirbook format we will look at an especially beautiful printed choirbook, known as the *Liber selectarum cantionum*, of 1520 (Figure 12.2).<sup>12</sup> The book is very large (44.5 cm × 28.5 cm), ideally suited for use by a fairly large choir. Josquin Des Prez's *Inviolata, integra, et casta es Maria* was one of the most popular motets in the sixteenth century.<sup>13</sup> It is a large five-voice piece in three sections, built around a melody derived from a chant and presented in canon in two voices (on the recto page of the opening, at the top and bottom of the page). This is a challenging work, with few cadences and a complex texture.

Singers from this choirbook would normally have been church musicians, trained to improvise polyphony. These skills would have allowed the choirmaster and many of the singers to use the choirbook format to read the polyphonic texture of the whole piece, even though the voices are not aligned in a score. Before starting, the singers can look at the entries of each voice to determine when they should come in. Each of the voices enters with the same tune after three breves, in the order top left (superius), bottom left (bassus), middle right (altus), bottom right (tenor 1), top right (tenor 2). (A breve is a square note, the first value in every voice, and it is worth two beats; rests are vertical lines that fill one or two spaces. The number of rests and the pitch of entry are marked in each part in Figure 12.2.) The tenor 2 part comes in after twelve breves, or twenty-four beats; it is very easy

<sup>11</sup> There is one surviving set of partbooks from the fifteenth century, the Glogauer Liederbuch, Berlin, Deutsche Staatsbibliothek, Mus. MS 40098. It includes a great deal of music without texts and was probably used by instrumentalists.

<sup>12</sup> Grimm & Wyrung 1520, *Liber selectarum cantionum* (RISM 1520<sup>4</sup>). See <[http://digital.bib-bvb.de/webclient/DeliveryManager?custom\\_att\\_2=simple\\_viewer&pid=3495468](http://digital.bib-bvb.de/webclient/DeliveryManager?custom_att_2=simple_viewer&pid=3495468)> (last accessed 5 December 2018). For a recent study of the special qualities of this print, see Giselbrecht and Uppel 2012. For an edition of the piece and discussion of the sources, see Elders 2007, no. 24.

<sup>13</sup> See Thomas 2001: 337; it is no. 22 on her list of the motets with the most surviving sources found in anthologies between 1480 and 1600, with twenty-three vocal sources and six intabulations (arrangements) for instruments.

to lose count. But by looking at the other voices in the choirbook as they come in, the singers who enter after many rests would not need to count – they can see and follow the previous entries and determine the time and pitch in relation to the other voices (here all the voices enter on F, except for the last voice, on the top right, which enters on C).

The superius and bass voices both have long descending scales (marked in Figure 12.2 with black arrows): experienced improvisers recognise these as part of an improvisable pattern characterised by parallel tenths in the outer voices, with inner voices going in contrary motion (ascending, rather than descending), and they can see at a glance how all the voices line up (Schubert 2008: 193–5). They can also see that a basic three-breve pattern (three measures in a modern score) is repeated three times (see Figure 12.3). The piece appears on seven openings of the print, so the page turns serve as rehearsal letters: when

The image shows a musical score for a five-part setting of 'Inviolata, integra et casta es a 5' by Josquin Desprez. The score is presented in a modern format with five staves: Cantus, Tenor comes, Altus, Tenor, and Bassus. The title and composer information are at the top. The score is divided into two systems. The first system covers measures 1 to 9, and the second system covers measures 10 to 16. The lyrics are written below the staves. The score illustrates the characteristic features mentioned in the text: successive entries every three measures, descending parallel tenths in the outer voices, and ascending motion in the inner parts.

Fig 12.3 Josquin Des Prez, *Inviolata, integra, et casta es Maria*, in modern score format, transcribed by Julie Cumming, mm. 1–16. Note the successive entries every three measures, the descending parallel tenths in the outer voices, and the ascending motion in the inner parts.

singers get lost they can get back in after the page turn. Older singers can guide younger ones through touch. If they get lost, singers can get in again – at cadences, at page turns, at passages with recognisable contrapuntal techniques. Choirbook format, combined with knowledge of improvisatory practices, allows skilled performers to read the parts on the page almost the way we read a score.

## Improvisation as Distributed Cognition in Dance and Dance Music

A similar system of constraints and assemblages governs dance in the early modern period. In their research on improvisation in Renaissance dance, Sparti (2003), Nevile (2003, 2015) and Kendall (2003) describe the ways in which individual dancers improvised variations (or substitutions) of steps in specific contexts. Just as musicians were not expected to sing by rote but to skilfully embellish, dancers were judged by their ability to use motions of the arm, body and gestures as they improvised in skilful coordination with others. Many of these strategies are similar to those in improvised polyphony – just as musicians can improvise small note values leading from one note to another, dancers could improvise faster variations on individual steps that make up a larger sequence of motions. As Domenico Pietropaolo notes, ‘improvisation took chiefly the form of imaginative embellishment and variation within the horizon of expectations that surrounded each dance, as determined by the style, music, and tradition’ (Pietropaolo 2003: 18). Mastering dance involved a highly prized and difficult-to-achieve combination of control, synchrony, discipline, variety and improvisation, which demanded on-the-fly intelligence (Tribble 2017). As musicians built upon a basic foundation of musical training, so dancers learned the fundamental steps, but were expected to embellish and improvise in real time, in coordination with one another and with the musical accompaniment.

The true test of such mastery was the interaction between dancers in a couple, or among a larger group of dancers. In these cases, the constraints of the basic steps formed the foundation of the unfolding and often unexpected configuration of improvised variations. Nevile describes the contrasting roles of men and women in Domenico de Piacenzo’s late-fifteenth-century treatise *De arte saltandi* (Nevile 2003: 151). While almost none of the choreographies describe the use of ‘*doppi* of different *misure* . . . at the same time’, the one exception suggests a kind of interactive improvisation:

Up to this point, the dancers have been moving in a file, with the woman in between the two men. At the time the steps occur the two men move toward the woman with a *saltarello doppio*, in order to be level with her. Simultaneously the woman moves forward with a *bassadanza doppio* away from the spot for which the men are aiming. The slowness and tranquillity of her step emphasizes the teasing nature of her departure, while the men’s *saltarello doppio*, a step performed

with a hop and leap, emphasizes their eagerness to return close to the woman. (Neville 2003: 151)

Yvonne Kendall describes something similar in the treatise of Fabritio Caroso (1600), who ‘furnishes instructions for a number of movements from which a lady should choose in order to garnish the strolling passages (*passegi*) she does while her partner is performing elaborate feats of terpsichorean daring’ (Kendall 2003: 172). In both these cases we see improvisation in response to interactions among dancers.

Not only the dancers but also the musicians engaged in improvisation. Fifteenth-century dance music was primarily improvised by a wind ensemble of two shawms (loud double-reed instruments) and slide trumpet or trombone. The lower of the two shawms played a long-note *basse danse* (or *bassadanza*) tenor voice in equal values, while the other two instruments improvised parts above and below the tenor. These musicians used some of the same improvisatory techniques used by church musicians when they improvised against a chant melody, although the tenor melodies for instrumental music were not chant melodies (Polk 1992: 60–86, 163–218; Duffin 2013). Sixteenth-century dance ensembles grew in size and used more notated music, but they brought to this new repertoire their experience as improvisers, and it is clear that the practice continued (Polk 2003).

Successful coordination of improvisation among both instrumentalists and dancers involved delicately timed feats of mutual modulation. Kendall draws a parallel between improvised ornaments played by instrumentalists and improvised step substitutions performed by dancers (Kendall 2003: 171, 180). Sparti cites the instructions of the dance teacher Giovanni Ambrosio, who tells beginner dancers to shape their performance to the style and character of the instruments (Sparti 2003: 126–7); improvising instrumentalists could also watch the dancers and respond to their movements. Such moments are best seen as on-the-fly assemblages of embodied skill and training, social coordination, internal mechanisms of attention and perception, and material and environmental structures.

## **Improvisation and Performance on the Early Modern English Stage**

In contrast to the realm of music and dance, improvisation in the theatre was rather more of a vexed issue. One way of thinking of improvisation is ad-libbing, introducing material extraneous to the playtext. Famously, Hamlet condemns this practice in his advice to the players:

[L]et those that play your clowns speak no more than is set down for them. For there be of them that will themselves laugh to set on some quantity of barren spectators to laugh too, though, in the meantime, some necessary question of the play be then to be considered. – That’s villainous, and shows a most pitiful ambition in the fool that uses it. (Shakespeare, *Hamlet*, 3.2.37–41)

This much-debated passage decries one form of improvisation primarily associated with the Clown, who commands the attention of the crowd with his gags, to the neglect of the action of the play (Thompson 2003; Wiles 1987). While this example is probably closest to modern views of improvisation as freedom from the constraints of a written text, it is perhaps not the best analogy to the skilled practice of the musicians and dancers described above. Instead, the closest counterpart to the elegant embellishment of the singer was adding 'grace' to the words through the art of action, the movements of the hand and body that lifted the language into the body of the actor and, from thence, outward to the audience. As Titus Andronicus grimly jokes after his hand has been severed: 'how can I grace my talk, / Wanting a hand to give it action' (Shakespeare, *Titus*, 5.2.17–8).

For actors who performed as frequently as those in Shakespeare's time, achieving such a level of 'grace' was possible only by means of a system developed to offer a high level of constraint and to offload as much cognitive work as possible on to the environment, shared social practices and material artefacts. Early modern playing companies practised a kind of 'cognitive thrift', developing systems that facilitated high levels of performance from individual players (Tribble 2011: 31–5). There were many elements to this system, including the theatre architecture, shared conventions of movement, the apprentice system that embedded novices into a structured environment, technical training in gesture, swordplay and dance, and material artefacts such as the individual parts and the plot that hung backstage to provide a brief schematic of the action and the sound cues.

For questions of improvisation and gesture, the parts are the most relevant element in this distributed system. Players received only their own parts and their cues, usually only three or four words spoken by another actor. If the play was a new one, they might well have only partial knowledge about the work as a whole, although if they were sharers (senior members of the company) they would have heard the playwright read it aloud at a company gathering. Although the parts may seem very sparse, they functioned as a form of 'information underload', throwing focus on the players' lines and cues. The skilled player read the lines for action, lifting the words into his body through the art of gesture. Gesture and the wider art of movement were considered to be the pinnacle of the actor's skill, so much so that it is linked to enchantment: 'So bewitching a thing is liuely and well spirited action, that it hath power to new mold the harts of the spectators and fashion them to the shape of any noble and notable attempt' (Heywood 1612: C2v).

It is sometimes suggested that the cue-script system resulted in just-in-time performance, in which actors nervously anticipated lines from fellow players that they were unable to fully predict. Simon Palfrey and Tiffany Stern argue that '[t]he actor's exclusion from much of the play's working machinery will always prompt an alert and eager gathering of any clue that might fill out his place and purpose' (Palfrey and Stern 2007: 121). Their points about the ways that the cue-script facilitates listening are well supported; as in the case of musical performance, the part-system develops alertness and a keen attentiveness to the actions of fellow performers. But they also further claim that the players were often taken by surprise by

the ‘premature’ cues and thus goaded to engage in a ‘battle for possession of the cue space’ (Palfrey and Stern 2007: 196). As Tribble has argued elsewhere, this view of performance as a zero-sum game between two individual agents neglects the group expertise that underpinned skilful performance (2011: 60–5). As knowledge and experience would allow musicians and dancers to modulate their performances in response to one another, so the practice and familiarity of dramatic syntax and long experience with timing would facilitate mutual modulation on the part of actors. Moreover, the example of musical improvisation on the fly shows that quite subtle movements of the hands and body can alert fellow performers to shifts in emphasis, helping one another to respond even within the flow of performance.

### **Singing from Renaissance Partbooks: Different Formats, Different Affordances**

The examples thus far discussed have been primarily drawn from elite performers: trained musicians, highly skilled players and courtly dancers who, although technically amateurs, were expected to reach extremely high levels of accomplishment and put enormous amounts of time and effort into their practice. But the framework of distributed cognition also helps explain the abilities of amateur musicians to perform polyphonic music at the more mundane domestic level. In the absence of highly polished professional skill based upon a lifetime of training, amateur singers depended upon a higher level of explicit material support in the form of partbooks used in a social setting. While much of the polyphonic music performed in church was improvised, more and more composed polyphonic music was performed from music notation (without improvising) in the fifteenth and sixteenth centuries. Reading music notation in the Renaissance posed its own challenges, because music was not presented in score (with all the parts aligned rhythmically, as in a modern choral score). The notation did not use barlines, the rhythmic values of the notes often depended on context, and musicians were expected to add sharps and flats in the appropriate places. Secular polyphonic music in the vernacular and composed instrumental music became much more common with the rise of music printing after 1500, so both church musicians and lay amateurs were involved in singing and playing composed polyphonic music. Notated music in the Renaissance was normally presented in one of two formats: a choirbook, as we saw above, or a set of partbooks. The formats had different affordances, and made possible different musical behaviours and practices. We can learn about their affordances from images of music-making, from contemporary descriptions, and from the experience of singing from the original sources.

A set of partbooks included one small book for each part (superius, altus, tenor bassus) (see Figures 12.4, 12.7 and 12.8 below). Like the cue-scripts used in English theatre, the reader of a partbook could see only his or her own part. Partbooks were the standard format for sixteenth-century prints of polyphonic music of all kinds; there were also numerous manuscript partbooks in the sixteenth century. As we can see in the image from a 1535 treatise on embellishing music on the recorder





Fig 12.4 Silvestro dal Fontego Ganassi, *Opera Intitulata Fontegara*, title page (Venice: the author, 1535). Licence provided by the Museo internazionale e biblioteca della musica di Bologna, <[http://www.bibliotecamusica.it/cmbm/viewschedatwbca.asp?path=/cmbm/images/ripro/gaspari/\\_B/B083/](http://www.bibliotecamusica.it/cmbm/viewschedatwbca.asp?path=/cmbm/images/ripro/gaspari/_B/B083/)>.

(Figure 12.4), each partbook was used by one or two performers. They were laid on a table so that singers and instrumentalists could sit around the table as if they were eating or playing cards. While in this image we see recorder players and singers, the instruments hanging on the wall (viols and a lute) would have required even more room to play, in order to avoid bumping your neighbour with the neck of the lute or the bow of the viol. Partbooks made it easy to provide enough room for each person, and they were also relatively inexpensive and easy to store and transport.

A sixteenth-century conversation book first published in Brussels in 1543 (reprinted in 1623) (Figure 12.5) designed to improve French or Dutch language skills includes an imagined conversation that might take place at a singing session at a dinner party.<sup>14</sup> The dialogue provides an excellent window into the affordances, both social and musical, of partbooks (Figure 12.6). Just as conversation and correct etiquette in a foreign language required instruction and instruction books, so

<sup>14</sup> Berthout [1543] 1623, <<https://play.google.com/store/books/details?id=snxbAAAAQAAJ>> (last accessed 5 December 2018). Cumming found this dialogue in Wangermée 1966: 133–4; English translation in Wolf 1968: 134. Wegman 1996: 409 cites a different passage from the book. My translation is adapted from Wolf's translation; the original is found in Berthout 1623: 26–8.

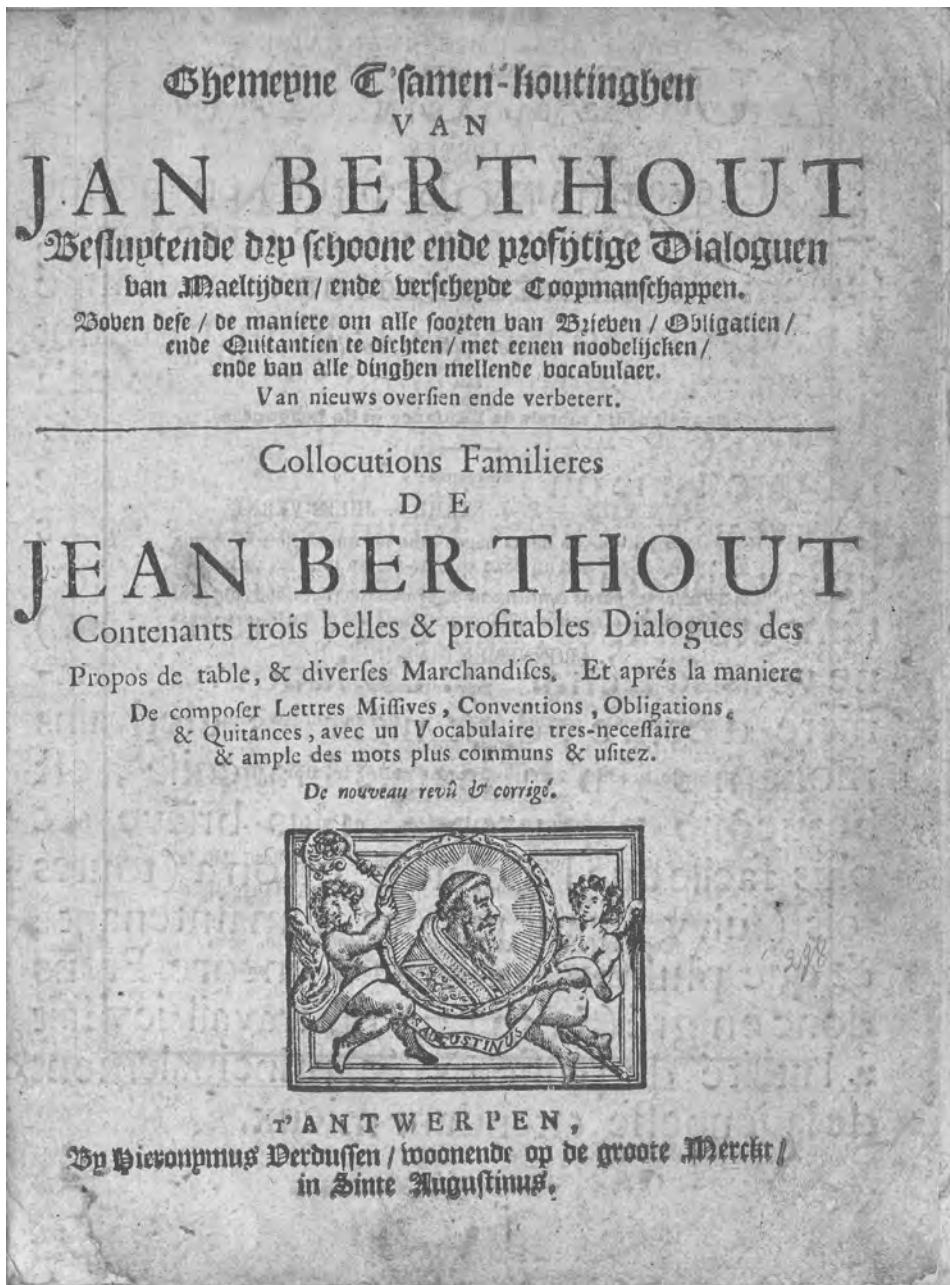


Fig 12.5 Jan Berthout, *Collocutions familiares de Jean Berthout contenant trois belles & profitables dialogues des propos de tables*, title page (Antwerp: Hieronymus Verdussen, 1623). Ghent University Library, BIB.ACC.008896. CC BY-SA licence, <<https://creativecommons.org/licenses/by-sa/4.0/>>; <[https://books.google.ca/books/about/Collocutions\\_familieres\\_de\\_Jean\\_Berthout.html?id=snxbAAAAQAAJ&redir\\_esc=y](https://books.google.ca/books/about/Collocutions_familieres_de_Jean_Berthout.html?id=snxbAAAAQAAJ&redir_esc=y)>.

(a)

<p>D'eerste v'amen-kouinghe, oft nu P'itnen waren.</p> <p>H. Gy sijn maer Sarrapion : nu sijn wy mit meere volckstratert.</p> <p>I. Ighen Heere, ghy hebt te groote cofen ghedaen.</p> <p>M. I. Nieu en boe v'aureng :</p> <p>M. I. S'ich en boe v'aureng :</p> <p>I. Dat belieft u alsoo te seggen v'eerste Jacob.</p> <p>I. C. Ick bidg u maect alle goede c'herre ghy zijt alle herren sijn miliecan.</p> <p>I. Igh danken u :</p> <p>I. Gabben vy gheweren dat ghy ghoben soue hebben soo groote koffen ont' ouren v'misse / v'mour de nous :</p> <p>I. Nu en souden niet ghesommen hebben.</p> <p>W. Ghewen nu loozimac nuu v'assizamine M. I. Dit wet dan /</p> <p>I. sullen vy niet en liehelen hebben ?</p> <p>H. Ghar ghy wet s'esse /</p> <p>M. I. Gheliken niet halen mijn boechen.</p> <p>W. Dat boechen belect u te hebben mijn Heere ?</p> <p>M. I. De boechen niet v'ende met vy partigen.</p> <p>W. Daar zintse mijn Heere ? (treson)</p> <p>M. I. Ghy sultse bidden d'ere boeren opt.</p> <p>W. Del mijn Heere s'ich salse azen halen.</p> <p>I. Ghewaner / ick v'enght u erug :</p> <p>I. C. Ick wachse v'au u Greene ghebabet byniet al opt /</p> <p>I. ene laer consonne azen /</p> <p>E. Wy woumen sullen u bes'icht doen.</p> <p>I. Wy sullen doen ghebader /</p> <p>Wy zing te voben.</p> <p>D. Ick v'enght u Diertich.</p> <p>I. Schenck Diertich / v'aueg.</p> <p>F. Dat wyj belieft u Diertich :</p> <p>D. Ghyeft vy witten.</p> <p>D. Dat heb rooden ghewentien.</p> <p>D. Dat heb seker mede te doen :</p> <p>I. Ick v'enght u v'onten.</p>	<p><i>La Premiere Collocution.</i></p> <p>comme si nous étions des Princes.</p> <p>H. Vous dites vray Sanion :</p> <p>L. Pour vray nous sommes bien traités.</p> <p>L. Monseigneur, vous avez fait trop de dépens.</p> <p>M. I. Non fait Laevens :</p> <p>I. Il me deplair qu'il n'y a autre chose.</p> <p>L. Il vous plaît de dire ainsi.</p> <p>Maitre Jacques.</p> <p>D. C. Le vous prie faites vous bonne chere vous m'êtes tout cordialement bien venus.</p> <p>D. Nous vous remercions de bon cuer Damoiselle.</p> <p>Y. Si nous eussions seeu que vous eussiez fait si grands dépens pour l'amour de nous.</p> <p>Z. Nenny nous pas venus.</p> <p>M. I. Or-bien donc.</p> <p>n'aurons nous pas une chanson ?</p> <p>R. Ouy, bien six.</p> <p>M. I. Guillaume, allez querir mes livres.</p> <p>G. Quel livres.</p> <p>M. I. Les livres à quatre &amp; à trois parties.</p> <p>G. Ou sont ils Monseigneur ?</p> <p>M. I. Vous les trouverez là haut sur le buffet.</p> <p>I. Commere, je bois une fois à vous :</p> <p>D. C. je l'ayme volontiers de vous commere beuvez tout &amp; faites le aller tout au tour.</p> <p>I. Nous ferons mes serons raison.</p> <p>I. Nous en ferons ma commere :</p> <p>Je bois à vous Theodore.</p> <p>T. Je l'ayme de vous Jean.</p> <p>I. Veriez à Theodore, Paul.</p> <p>P. Quel vin vous plaît il Theodore ?</p> <p>I. Donnez moy du blanc.</p> <p>I. J'ay beu du rouge.</p> <p>I. Qu'en ay je à faire ?</p> <p>I. L'ayme mieux à boire du blanc.</p> <p>Je bois à vous Kombert.</p>	<p>D'eerste v'amen-kouinghe.</p> <p>R. Die eerste v'amen-kouinghe, wie dat want gesarrapion :</p> <p>W. Ick en hoijde niet binnen mijn Heere.</p> <p>M. I. Ghelijc sarrapion.</p> <p>I. Wantpoint sochtst onse dattet want p'ouog.</p> <p>A. Ighen mijn Heere / belieft u te hebben niet vieren te vopen ?</p> <p>M. I. C. Igh en p'at onse /</p> <p>A. S'ich en v'erecht / oare s'ed den boeken s'ich s'inght dat u belieft.</p> <p>I. S'ich v'erecht / oare s'ed den boeken s'ich te v'ouog /</p> <p>D. Ghewent s'ich u wet gesien.</p> <p>A. Ghy ont d'at is den besonker.</p> <p>K. Dat s'alt ghy s'inghen ?</p> <p>A. Ighen sal den tenere s'inghen.</p> <p>D. S'ich sal den p'ouogontze s'inghen ?</p> <p>Y. S'ich sal s'inghen.</p> <p>D. Able v'eght / begint ghy v'ing ?</p> <p>A. Ighen v'eght / ick moet d'ere p'ouogontze.</p> <p>Y. Ighen v'eght / ick moet d'ere p'ouogontze.</p> <p>K. C. Igh want v'eght ghy v'omont ?</p> <p>M. I. Ighen niet want tenen s'ich /</p> <p>D. Dat begint u v'ing ?</p> <p>Y. Ighen v'eght u v'ing.</p> <p>I. C. Ighen s'ich s'inghen.</p> <p>A. Dat is s'ich s'inghen.</p> <p>G. Hoir s'ich den v'ing s'inghen ?</p> <p>K. Ighen den v'ing s'inghen ?</p> <p>D. Ighen den v'ing s'inghen ?</p> <p>M. I. Thomas &amp; Felix s'inghen met Theodore.</p> <p>F. Bien mon Pere.</p> <p>M. I. Avez vous appris cette chanson là ?</p> <p>T. Non mon Pere :</p> <p>W. Nous la chanterons bien.</p> <p>W. Etienne, ne s'ait il pas chanter ?</p> <p>D. C. Non s'ich encore trop jeune :</p> <p>I. Commencera bientôt à apprendre :</p> <p>K. Ighen v'eght :</p> <p>Maitre Jacques, allez à Etienne &amp; Gedé à manger :</p> <p>I. Ighen ont point mangé.</p> <p>S. Ighen s'ay alicz mangé, ma Mère,</p>
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	<p><i>La Premiere Collocution.</i></p> <p>R. Beuvez, je vous feray raison.</p> <p>M. I. Oudeneurez vous Guillaume ?</p> <p>G. Je ne le pourrois trouver Monsieur.</p> <p>M. I. Donnez les à Antoine.</p> <p>Antoine, cherchez nous là quelque chose de bon.</p> <p>A. Bien Monsieur vous plaît il odir une chanson à quatre ?</p> <p>M. I. Ce m' est eoit un chamez ce qu'il vous plaira.</p> <p>A. Tenez Theodore, voilà la desing s'il vous est trop haut.</p> <p>les enfants vous ayderont bien.</p> <p>K. Donnez moy le balcontre.</p> <p>K. Tenez voilà le balcontre.</p> <p>K. Que chanterez vous ?</p> <p>D. Je chantera le haut-contre ?</p> <p>Y. Qui chantera le haut-contre ?</p> <p>D. Je le chantera.</p> <p>Y. Qui commencé commencé vous Yias ?</p> <p>Y. Non, j' me fait poter quatre.</p> <p>Y. Je poie six moy.</p> <p>Y. Bien, vous venez deux après moy.</p> <p>I. I est vray, commencé vous Kombert ?</p> <p>K. Ouy, je p'ay qu un souffler, mais prenez voire ton.</p> <p>Y. Ou commencé vous Yias ?</p> <p>D. Je commence en Elami.</p> <p>D. C. Ighen s'ich en Cl'ofia.</p> <p>E. Je suis en G'loiret,</p> <p>R. Ighen vous Kombert ?</p> <p>M. I. Thomas &amp; Felix s'inghen avec Theodore.</p> <p>F. Bien mon Pere.</p> <p>M. I. Avez vous appris cette chanson là ?</p> <p>T. Non mon Pere :</p> <p>W. Nous la chanterons bien.</p> <p>W. Etienne, ne s'ait il pas chanter ?</p> <p>D. C. Non s'ich encore trop jeune :</p> <p>I. Commencera bientôt à apprendre :</p> <p>K. Ighen v'eght :</p> <p>Maitre Jacques, allez à Etienne &amp; Gedé à manger :</p> <p>I. Ighen ont point mangé.</p> <p>S. Ighen s'ay alicz mangé, ma Mère,</p>	<p>R. Die eerste v'amen-kouinghe.</p> <p>R. Die eerste v'amen-kouinghe, wie dat want gesarrapion :</p> <p>W. Ick en hoijde niet binnen mijn Heere.</p> <p>M. I. Ghelijc sarrapion.</p> <p>I. Wantpoint sochtst onse dattet want p'ouog.</p> <p>A. Ighen mijn Heere / belieft u te hebben niet vieren te vopen ?</p> <p>M. I. C. Igh en p'at onse /</p> <p>A. S'ich en v'erecht / oare s'ed den boeken s'ich s'inght dat u belieft.</p> <p>I. S'ich v'erecht / oare s'ed den boeken s'ich te v'ouog /</p> <p>D. Ghewent s'ich u wet gesien.</p> <p>A. Ghy ont d'at is den besonker.</p> <p>K. Dat s'alt ghy s'inghen ?</p> <p>A. Ighen sal den tenere s'inghen.</p> <p>D. S'ich sal den p'ouogontze s'inghen ?</p> <p>Y. S'ich sal s'inghen.</p> <p>D. Able v'eght / begint ghy v'ing ?</p> <p>A. Ighen v'eght / ick moet d'ere p'ouogontze.</p> <p>Y. Ighen v'eght / ick moet d'ere p'ouogontze.</p> <p>K. C. Igh want v'eght ghy v'omont ?</p> <p>M. I. Ighen niet want tenen s'ich /</p> <p>D. Dat begint u v'ing ?</p> <p>Y. Ighen v'eght u v'ing.</p> <p>I. C. Ighen s'ich s'inghen.</p> <p>A. Dat is s'ich s'inghen.</p> <p>G. Hoir s'ich den v'ing s'inghen ?</p> <p>K. Ighen den v'ing s'inghen ?</p> <p>D. Ighen den v'ing s'inghen ?</p> <p>M. I. Thomas &amp; Felix s'inghen met Theodore.</p> <p>F. Bien mon Pere.</p> <p>M. I. Avez vous appris cette chanson là ?</p> <p>T. Non mon Pere :</p> <p>W. Nous la chanterons bien.</p> <p>W. Etienne, ne s'ait il pas chanter ?</p> <p>D. C. Non s'ich encore trop jeune :</p> <p>I. Commencera bientôt à apprendre :</p> <p>K. Ighen v'eght :</p> <p>Maitre Jacques, allez à Etienne &amp; Gedé à manger :</p> <p>I. Ighen ont point mangé.</p> <p>S. Ighen s'ay alicz mangé, ma Mère,</p>
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(b)

<p>D'eerste t'amen-kouinghe. I. C. Ende ghy Cellie / siet ghy ghemerck g'eten ? C. Jae ich mijn moeder. I. C. Hoe ghy noch te vintien ? C. Jae ich mijn Abbode / ich sijn noch ghemerck. I. C. S'enght hier sepoen seloogen / mit d'enght dit al wesch. E. Wel mijn Consofoude. B. Dat souden d'ere is den @vobert / en siet dat is de Swanne: Wiltien / d'enght den ghequaten mostaert / wie dan comt d' amore haelen. W. Ja d' amore al gheret. C. Ja / Is al gheret.</p>	<p>M. I. Sener dan is en goet siechten / wie siet ghemerck ? R. Ich genou dat Gombert gemaect M. I. Die is dien ? ( hest. R. @ is d'enght s'angh-meester. M. I. D'arachtich is en goet siechten ende wie siet d' amore ghemerck / D. Gomme d' wach / den S'angh-meester van Camerijck. M. I. @ is doch siet goet: W. Wie ich d'enght u roug s'eleng. M. I. Ja wach dan u s'elister Jacob ? M. I. S'enght dat wijj d'antur is. I. C. Wel mijn s'ere. I. C. Dat bist d'ander ? W. @ is siet al mijn Consofoude. I. C. S'enght hier s'elmael @ meison mit den s'ere / ende siet siet den d'andere. P. Dat mijn Consofoude wie s'elister d'andere s'eren ? I. C. S'ent de d'andere s'eren / ende den s'enght d'ere Swanne mit den @vobert. siet ghy hier den Consofoude ? ende ghy hier al d'andere s'enght s'arabale / dat is hier comt W. S'arabale / mijn Consofoude siet dat ghy hier comt comt s'ere. E. Dat wilt si nu siechten ?</p>	<p><i>La premiere Collocation.</i> D. C. Et vous Cecile, avez vous assez mangé ? C. Ouy, ma Mere. D. C. Avez vous encore à boire ? C. Ouy, ma Mere. J'en ay encore assez. D. C. Apprenez icy des trenchois nets, &amp; enportez tout ccy, P. Bien ma Damoiselle, B. Bien donne la Venaison, B. Bien, tenez voy-la la esgoigne, &amp; voy-la le signe: Guillaume, portez la moutarde sucrée, &amp; puis venez querir le reste, G. Le reste est il tout prêt ? B. Ouy, tout est prêt. M. I. Certes voilà une bonne chanson ? qui l'a fait ? K. Je croy que Gombert l'a fait, M. I. Qui est cèluy-la ? R. C'est le maître des channes de l'Empe- M. I. Vrayement, c'est une bonne chanson ? &amp; qui a fait l'autre ? D. Jean Lupus, le maître des channes de Cambray. M. I. Elle est aussi fort bonne ? Y. Je Payme de vous Maître Jacques ? M. I. Paul verrez là du vin, P. Bien Monsieur. D. C. Où est la reste ? G. Tout est icy ma Damoiselle. D. C. Apprenez icy premierement la Venaison de Cest, &amp; du Forc s'angher, P. Bien ma Damoiselle ou metrons nous le reste ? D. C. Mettez le Faon au milieu &amp; le Heron auprès &amp; la Cogoigne &amp; Cigne, mettez vous là en bas: &amp; cotez d'icy tout le reste, dités à Barbe quelle vicine icy. G. Barbe, ma Damoiselle dit quid vous venez auprès d'elle. E. Qu'est-ce qu'elle me veut ?</p>
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Fig 12.6a and b Jan Berthout, *Collocations familiares*, pp. 17–18. Ghent University Library, BIB.ACC.008896. CC BY-SA licence, <<https://creativecommons.org/licenses/by-sa/4.0/>>. Passages about singing from partbooks are shown in boxes.

did performing music from partbooks. Many instrumental tutors included basic instruction on how to read music, and numerous handbooks on music were sold at the same print shops where people would have bought music.<sup>15</sup> Personal instruction from a music master would also have been available to middle-class families, but they did not receive the intensive musical training required of professional musicians.

#### Cast of characters

##### Family:

- Master Jacob: father
- Dame Catelyne: Jacob's wife
- Children: Thomas and Felix, boy sopranos
- Children: Steven and Cecily, too young to sing
- Willeken: page

##### Friends:

- Dierick, soprano
- Ysaias, alto
- Antoni, tenor
- Rombout, bass

*Master Jacob:* And now, should we not sing a chanson?

*Rombout (B):* Yes, even six, if you please, Master!

*Master Jacob:* Williken, will you go get my books?

*Willeken:* What books do you want, Sir?

*Master Jacob:* The books in four and three parts.

*Willeken:* Where are they, Sir?

*Master Jacob:* You will find them up on the sideboard.

*Willeken:* Good Sire, I will go look for them.

*. . . they drink some wine and chat.*

*Master Jacob:* Where have you been, Williken?

*Willeken:* I couldn't find them, Sir.

*Master Jacob:* Give them to Antoni. Go look, Antoni, and pick something good for us.

*Antoni (T):* Right, Sir. Would you like to hear a chanson in four parts?

*Master Jacob:* It's all the same to me. Sing what you like.

*Antoni (T):* Dierick, here's the superius. If it is too high for you, the children can help you out.

*Rombout (B):* Give me the contratenor bassus.

*Antoni (T):* I'll do the tenor.

*Dierick (S):* Who begins? Is it you Ysaias?

<sup>15</sup> See Murray et al. 2010 and Coelho and Polk 2016.

*Ysaïas (A)*: No, not I. I must rest for four beats.

*Antoni (T)*: And I rest for six.

*Ysaïas (A)*: Well then, you come in two beats after me!

*Antoni (T)*: It's true. Do you start, Rombout?

*Rombout (B)*: Yes, I've only a semibreve rest. But we'd better get the pitch.

*Dierick (S)*: What note do you begin on, Ysaïas?

*Ysaïas (A)*: I start on E la mi [E above middle C].

*Dierick (S)*: And I on C sol fa [C above middle C].

*Antoni (T)*: That makes a sixth. And I am on G sol re ut [G below middle C]. What about you, Rombout?

*Rombout (B)*: I begin on C fa ut [C below middle C].

*Master Jacob*: Thomas and Felix, sing along with Dierick.

*Felix*: Yes, Father.

*Master Jacob*: Have you studied this chanson?

*Thomas*: No, father, but we'll sing it well.

*Rombout (B)*: Does Steven know how to sing?

*Dame Catelyne*: No, he is still too young; he will start to learn soon, and his sister will too.

. . . *Discussion of whether the children have eaten, and of the meal. They sing.*

*Master Jacob*: Now, that's what I call a pretty chanson. Who composed it?

*Rombout (B)*: I think it's Gombert.

*Master Jacob*: Who's he?

*Rombout (B)*: He's singing master to the Emperor.

*Master Jacob*: Well, that's really a good chanson. And who made up the other one?

*Dierick (S)*: Johannes Lupi, the singing master at Cambrai.

*Master Jacob*: That's a good one too. And now, Ysaïas, I drink to your health.

This dialogue reveals many of the social affordances of partbooks. They are used for domestic recreation in a family setting. Usually there is one person per partbook; that person could take his or her book away and practise for a family singing session. Sometimes there are more people per part: the children, Thomas and Felix, sing with Dierick. Children sometimes learned the parts in advance (Master Jacob asks Felix if he has studied his part), but they could also sing at sight (Thomas says he hasn't studied it, but that he will be able to sing it anyway). Both girls and boys learned to sing: Dame Catelyne assures Rombout that both Steven and his sister will learn to sing when they are old enough.

The dialogue also brings out some of the musical affordances of partbooks. The individual singers must ask each other about the first note of each part, and about how many beats of rest there are before each voice comes in. Additional information is also available: singers looking at their own parts can see the text and recognise cadences (a point of arrival at the end of a musical phrase). They can listen for the text and cadences in the other parts. Other things to listen for include texture

Fig 12.7 Josquin Des Prez, *Virgo prudentissima*, tenor partbook, no. 24 in *Tertia pars magni operis musici continens clarissimorum symphonistarum tam veterum quam recentiorum, praeipue vero Clementis non Papae, carmina elegantissima quatuor vocum. In officina Ioannis Montani et Vlrici Neuberi, Noribergae*, 1559 (Nürnberg: J. Von Berg & U. Neuber, 1559; RISM 1559<sup>2</sup>, no. 24). Attribution to Isaac in the print is incorrect. Library of Congress Music Division; Music Treasures Consortium. LCCN Permalink: <<https://lccn.loc.gov/2008561513>>. Boxes show strong cadences.

(homorhythm, when all voices sing the same text at the same time) and imitation (when voices enter one at a time, usually with the same tune). However, their ability to *anticipate* what others will sing is limited. Coming in after rests (if you lose count) or if you make a mistake is much more difficult than in modern notation, where you can see the other parts, and get the pitch from the other voices.

The affordances of partbooks become clear when we look at pages from two partbooks of a short four-voice motet by Josquin Des Prez, *Virgo prudentissima*.<sup>16</sup>

<sup>16</sup> Two sources (including the source shown in Figures 12.7 and 12.8) incorrectly attribute the piece to the composer Heinrich Isaac, the confusion possibly due to the fact that Isaac wrote a four-voice setting of this text; see Elders 2009: 171–2 for a thorough discussion of the sources. There is a detailed discussion of the piece, showing how each section uses improvisatory techniques, in Cumming 2013a.



Fig 12.8 Josquin Des Prez, *Virgo prudentissima*, discantus partbook, no. 24 in *Tertia pars magni operis musici* (RISM 1559<sup>2</sup>, no. 24). Attribution to Isaac is incorrect. Library of Congress Music Division; Music Treasures Consortium. LCCN Permalink: <<https://lcn.loc.gov/2008561513>>; <<https://loc.gov/item/ihas.200182423>>.

The print is a late German Lutheran source containing favourite pieces from the past largely for domestic use or for use in the schools; the partbooks are fairly small (15 cm × 24 cm), providing ease of storage and transport, and relatively low cost.

In the tenor partbook (Figure 12.7), cadences (ends of phrases) are quite easy to recognise: the cadential arrivals are on long note values (square or long rectangular notes with ascending tails), and are preceded by a shorter note one step higher (shown with a box in Figure 12.7). If we look at the superius partbook for the same piece (Figure 12.8) we see clear cadences on some of the same words (*progrederis*, *Syon*, *ut sol*), but the melodic motion leading to the cadence is slightly different (a syncopated suspension formula, shown with a box). Experienced singers who lose their place in the music can listen for the text and the cadence, and come back in at those points. As they sing the pieces repeatedly they get to know the other parts by ear, and start to remember where they come in. If they do get lost, and have to start over again, it doesn't really matter in a domestic setting: they can laugh and begin again.



The example of partbooks shows the ecological nature of the distributed cognitive framework. In contrast to large choirbooks, designed to be used for a group of highly trained singers (albeit at different levels), partbooks are small, portable and easy to store. They allow musicians to sit around a table – just as they do when drinking and socialising – and to take their own part and practise it alone in preparation for a singing session. It is hard to get in again if you get lost, but you can establish stopping places at cadences, and it doesn't matter if things fall apart. Partbooks work well for amateurs: they require users to be able to read their own part accurately, but they neither require nor allow the more advanced improvisatory skills developed by church musicians.

## **Conclusion**

The domains of early modern music, dance and theatre are each distinctive in their demands upon performers, the expectations of audiences, and the ways of evaluating and inculcating skilled practice. Each operates within a particular ecology of skilled practice, comprising material artefacts skilfully manipulated by practitioners, and each places different demands upon the particular assemblages of embodied expertise, environments and social systems. Each also places different values upon the relationship between reproducibility based upon texts and improvisation during the moment of performance. Examining these practices within the framework of distributed cognition shows that these forms of complex thought are located not in the head or the body alone, nor in the social and material system that underpins the practices, but in the peculiar assemblages that link each of these elements.

Pierced with Passion:  
Brains, Bodies and Worlds in Early Modern Texts

*Daniel T. Lochman*

In all its emotional complexity, Edmund Spenser's episode wherein Belphoebe unexpectedly discovers the wounded Timias, found in Book 3, Canto 5 of *The Faerie Queene* (1590), is a fictional sixteenth-century instantiation of what we today identify as a subset of distributed cognition. Through the text as a fictive extension of Spenser's imagination, the episode seems designed to register and produce in the reader a sense of embodiment and enactive affect – what Giovanna Colombetti terms 'affective interconnectedness' (2014: 204).<sup>1</sup> In *The Feeling Body: Affective Science Meets the Enactive Mind*, Colombetti points out the limits of twentieth-century theories of psychological appraisal that had privileged brain-based cognition as the mediator between the body and emotions. Among her conclusions are the following, which are especially pertinent to ideas about the body in cultural products of the sixteenth century:

[T]he process of appraisal . . . is not a purely cognitive and wholly heady phenomenon separate from the bodily components of emotion, but is enacted by the organism in virtue of its organizational properties, including the deep interconnectivity and coregulation of brain and body . . . the experience of appraisal is also not clearly separate from the rest of emotion experience, including bodily feelings . . . and finally . . . our well-documented tendency to do as others do, to mimic their expressions, postures, and actions, may be a basic mechanism to foster social bonding by making us converge experientially and thereby promote feelings of closeness while at the same time grounding more complex forms of interaction and affective interconnectedness. (Colombetti 2014: 203–4)

This chapter shows that Colombetti's suggestion of the connectedness of brain and body, including the emotions and sensations as well as cognitive processes in the

<sup>1</sup> To the charge that historicised distributed cognition that links cognitive theory to literary texts is anachronistic, Tribble and Sutton (2012: 588–93) argue that, for the 'distributed cognitive ecologies' of early modern drama, the 'polytemporality of anachronism' offers an enrichment of experience rather than the logical deficit frequently attributed to historical study of affect and cognition.

experience of appraisal, would have been commonplace to early moderns writing in disparate forms and disciplines – imaginative literature as well as religious and medical texts. Key to understanding early modern versions of action, interaction and enaction is the recognition that literary texts, like theological and medical ones, were suffused with technically precise language about the body that was couched in metaphors that today we may misread as *merely* metaphoric or generalised, a tendency Hannah Wojciehowski in this volume explains by way of conceptual metaphor theory. Analysis and interpretation of language that carries at once literal and figurative resonance in early modern theological, medical and literary texts helps us perceive and understand the presumed, weakly differentiated processes of brain and body described in early modern physiologies. Moreover, it highlights mimesis as it appears in cultural forms such as music, oratory, drama and poetry, whose appeals to the senses fostered a range of emotions and drew audiences to ‘converge experientially’ through the ‘feelings of closeness’ and ‘affective interconnectedness’ artistic media prompted. Modern references to faculty psychology sometimes caricature what seem to be – and often are – antiquated ideas of the body, but early modern ideas of embodiment were built on theories developed over centuries and had attained a high degree of systemic coherence. They offered various though often individually coherent explanations of the internal bodily processes that animated the body’s organs, and they opened ways to connect affect to cognition rather than merely distinguish one from the other. Moreover, technical language about the body and its extended interactions through sensory stimuli shaped the theory and practice of medicine and the arts and encouraged more or less metaphoric applications in philosophy and theology. Examining this discourse and its embodied systems helps us to uncover the extended connectedness between affect and cognition, body and world, and one human being and others that many early moderns presumed, and it provides a context that exposes some modern assumptions, such as ones to which Colombetti responds, wherein the workings of the conscious brain may be thought to be discrete from sensation and passion and wherein intellectual and imaginative representations that make use of metaphor stand apart from valid categories of individual and shared experience.

Let us begin, then, by turning to Book 3, Canto 5 of Edmund Spenser’s romance epic. In this canto heroic Prince Arthur attempts to rescue a beautiful woman, Florimell, who has fled from a predatory, brutish ‘foster’ or forester whom Arthur’s squire Timias pursues. During this episode the foster, joined by two brothers, wounds Timias in the ‘left thigh’ with a ‘long bore-speare’.<sup>2</sup> Timias manages to dispatch all three quickly, but he is so overcome by the ‘cruell wound’ that, according to the narrator, he would have died had ‘Prouidence heuenly’ not given him the aid of Belphoebe (3.5.26.2, 27.1), a noble huntress and, as Spenser writes in an explanatory letter to Raleigh, a ‘shadow’ of his queen (Spenser 2001: 716). Just as Elizabeth I in the 1580s and 1590s cultivated a public image as the virgin queen,

<sup>2</sup> Here and throughout, in-text citations of *The Faerie Queene* refer to Spenser 2001. The reference here is to 3.5.20.7.

so Spenser has represented Belphoebe thus far in *The Faerie Queene* as sober, rational and self-controlled, as befits a sovereign raised by the goddess Diana. In this episode, however, she falls prey to a private, piercing passion soon after she comes upon the squire's bleeding body:

Shortly she came, whereas that woefull Squire  
 And his sweete lips, on which before that stownd  
 The bud of youth to blossome faire began,  
 Spoild of their rosy read, were woxen pale and wan.  
 Saw neuer eie more heauy sight,  
 That could haue made a rocke of stone to rew,  
 Or riue in twaine: which when that Lady bright  
 Besides all hope with melting eies did vew,  
 All suddenly abasht shee chaunged hew,  
 And with sterne horror backward gan to start:  
 But when shee better him beheld, shee grew  
 Full of soft passion and vnwonted smart:  
 The point of pittie perced through her tender hart. (3.5.29–30)

Her immediate feelings are ones of hopelessness and 'horror', yet Belphoebe quickly comes to the aid of Timias and discerns that in him 'the weake sowle her seat did yett retaine' (3.5.31.4). After she removes his armour and presses the fluid of a 'soueraine weede' into the open wound, the squire slowly revives and wonders groggily with 'watry eies' how such an 'Angell, or Goddesse' could have descended 'from her bowre of blis' to dress his 'sinfull wounds' (3.5.34.3, 35). Later, Belphoebe and her nymphs carry Timias to their encampment, an 'earthly Paradize' set deep within the forest, where she continues to administer *materia medica* to cure 'his hurt thigh'. Ironically, in so doing she unwittingly 'hurt[s] his hart' (3.5.42.3–4) by provoking in him a love that is impossible to fulfil – she being royal and he but a squire. Even so, his love will later inspire a reciprocal affection, though the virginal Belphoebe gracefully refuses Timias's pledge of 'service'. Instead, she claims, she has been moved by the sight of the wound 'To succor wretched wights' who, in a fallen world, share her personal mortality, subjection to fortune and a 'commun bond of frailtee' (3.5.36.8–9).<sup>3</sup>

Significant to a study of sensation and affect in this episode is the convergence of several penetrations of bodies that prove to be physically and emotionally permeable: (1) the physical piercing of Timias's thigh; (2) the staid Belphoebe's affectively pierced heart; and (3) the piercing love soon to be awakened first in Timias and later countered by the responsive affection, if not love, of Belphoebe. In these several penetrations, the apparently solid boundary of the body is shown to be materially, sensorily and emotionally porous. Earlier, in Book 2, the narrator had

<sup>3</sup> Over the next twenty stanzas, Spenser attributes to the seemingly Stoic Belphoebe a range of passions, as noted below.

used a variant of ‘piercing’ to describe the extramissive force of Belpheobe’s eyes, which ‘darted fyrie beames’ and were ‘So passing persant, and so wondrous bright, / That [they] quite bereau’d the rash beholders sight’ (2.3.23.3–5).<sup>4</sup> In Book 3, however, the narrator emphasises that the beams of vision not only extend outward to affect Timias but penetrate inwardly, she being ‘perced’ by the sad spectacle of the beautiful youth. Her initial repulsion at the bloodied body transforms to painful pity lodged in her ‘tender hart’ – the seat of passion fed by the senses. In this passage, as elsewhere in Spenser and early modern literature, *affect* seems to precede cognition as both the initiator and a result of Belpheobe’s experience.<sup>5</sup>

One might read this exchange of sight and passion as simply an iteration of the ancient, medieval and Petrarchan trope of ‘amorous gazing’, wherein fiery darts or arrows emitted from the desiring eyes of a beloved wound a lover, who in turn feels erotic pain. Or, in a more chaste, familiar Platonic alternative, like that identified by Robert Baldwin in the thirteenth-century poem *Romance of Flamenca*, lovers’ idealised ‘rational mutual gazing’ could signal a conjugal, mutual love whose ‘rapture kindled in the eyes’ is less fiery and offers a more refined portal to the body than intimate, sensual touch (Baldwin 1986: 23–30). Dorothy Stephens offers another, subtler and more compelling way to approach Belpheobe’s gaze. She argues that though Spenser provides a damning critique of Petrarchism at the destruction of Busyrane’s castle and a sadistic, predatory mode of inscribing Petrarchan verse in the flesh, he elsewhere refigures Petrarchism as a ‘conditional erotics’ – a flirtation with varied erotic poses, circumstances, potential partners and narrative developments – that constitutes a ‘method of enriching the representation of relationships among desiring human beings and among the conflicting desires of each individual’ (Stephens 1998: 5). In Stephens’s reading, Spenser’s episode plays upon the conditionality of Belpheobe’s response and the ambiguous nature of her desire, if it is desire that she feels.

The gaze in this reading instantiates what Terence Cave has, via the work of the psychologist James J. Gibson, termed an open-ended ‘affordance’ – that is, a source of potential *uses* of an object, feature or in this case literary action that, for Cave, is also the object itself viewed in the light of its uses. A tree, Cave writes, is an affordance that can shift in perspective from uses such as ‘nesting, feeding, perching, climbing, shade’ to the tree considered in its environmental relationship to its uses and users. Such affordances, Cave suggests, contribute to an ‘ecology’ wherein ‘individual things collectively form a complex network of reciprocal relations’, and they offer the means for ‘redescription’ and shifts in perspective that derive from multiple views of a literary text (Cave 2016: 48, 62). An episode like the

<sup>4</sup> Despite the best efforts of Eros to light a ‘lustfull fyre’ in the eyes of Belpheobe, Spenser’s narrator explains, she, ‘with dredd Maiestie, and awfull yre’, ‘broke his wanton darts, and quenched bace desyre’ (2.3.23.7–9). The ease of Belpheobe’s bafflement of Eros is even more pronounced in the foolish voyeurs and would-be suitors of Book 2, Trompart and Braggadochio, who gaze upon her in fear; see Krier 1990: 67–82.

<sup>5</sup> Paster (2004: 11) writes that for early moderns ‘reason takes possession of the soul and body only after the body has already been inhabited by passions and the sense’.

one featuring Belphoebe and Timias opens multiple possibilities out of which may emerge several that seem, given various contexts, more likely. Cave writes that the processes readers of literary texts study are ‘dynamic, targeted, agent-driven’ and that the affordances they produce, ‘while referring to a generality’ such as the idea of a tree, have ‘no meaning without the particularity of the relations’ they convey (Cave 2016: 62). Rather than limiting Belphoebe’s sight of the wounded man either to a convention of painful, erotic carnality or to one of ‘rational mutual gazing’, or even to both, Spenser produces and conveys a range of emotions that turns Belphoebe’s apparently conventional response into a particular experience that an engaged reader may share. The richness of interpretive possibilities may later, perhaps, be reduced (though not necessarily eliminated) by consideration of various literary contexts. Upon seeing the wounded squire with his lifeless eyes, dishevelled hair and pale lips, Belphoebe registers discomfort, despair, disgust and horror at the bloody spectacle before transitioning more narrowly to ‘soft passion’ and ‘unwonted smart’. The latter emotions are compressed in the next line to the piercing ‘point of pity’, ‘pity’ being a word the *OED* links semantically to shared suffering, etymologically to Latin *pietas*, and iconographically to the *pietà* represented by painters and sculptors from the fourteenth century on.<sup>6</sup> In this passage, sight inspires emotion first and then action, with no evident mark of intentional thought, and it introduces a variety of overt and implicit affordances – in this instance, affective possibilities.

Cradling the body of Timias, as Mary does Jesus’s after the deposition, Belphoebe seems to have acted as a result of sense and affect, without conscious appraisal. Only after sensory and emotional experience does she search more intentionally for the pulse of Timias, remove his armour, seek and administer herbs ‘that mote him remedy’, and infuse healing juice in the wound while suppling and steeping his flesh, as a sixteenth-century physician would do (3.5.32–3).<sup>7</sup> Actions spring from emotions that, in the narrative, seem unintentional and that are experienced privately well before Timias revives and offers a perspective that builds upon Belphoebe’s focalised interior. No overt mark of the erotic appears until nine stanzas later, when, in a more typically Petrarchan formula, the still-dazed Timias, not Belphoebe, feels the wound of an ‘unwary dart’ rebounding from Belphoebe’s ‘faire eyes and gracious countenance’ (3.5.42.5–6). Moreover, there is no hint of the erotic awareness in Belphoebe until, eight stanzas later, she is said to refuse Timias ‘that sweet Cordiall’ (3.5.3.50) he craves but cannot request. Afterwards, oblique references to Belphoebe and the erotic occur when the narrator hyperbolically praises Belphoebe’s ‘daintie Rose’ kept in ‘chastity

<sup>6</sup> See Anderson 2008: 209 on the relation of Belphoebe’s posture with Timias to the *pietà*. On the classical senses of pity (the Greek *ἔλεος* and Latin *pietas*), see Konstan 2007: 201–18. Konstan shows that the classical senses include strong cognitive and weak affective dimensions, in contrast to the dominance of Belphoebe’s ‘soft passion’ and ‘tender hart’.

<sup>7</sup> In sixteenth-century medical use, ‘to supple’ meant ‘to soften (a wound, swelling, etc.) by applying an unguent, a poultice, etc.’ (*OED* v2b, citing Spenser’s usage at 3.5.33), just as Belphoebe pours into Timias’s wound the ‘juice’ of the ‘soueraine weede’. The verb ‘to steep’ denoted the action of soaking or bathing something in liquid to soften or cleanse it (*OED* v1, 1a, 1c).

and vertue virginall' (3.5.51.1; 3.5.53.6) and when in Book 4 Belphoebe speaks in jealous anger upon finding Timias comforting the wounded Amoret in the same posture she had used to comfort him (4.7.35–6). At this first sight of Timias in Book 3, however, Belphoebe feels multiple, overlapping emotions. Unlike the narrowly erotic gazes of medieval romance and early modern Petrarchan verse, Belphoebe's sight becomes an affordance for character and reader alike – one centred on the piercing pity that is lodged in her 'tender hart' and that is experienced only after she senses no signs of life in Timias's 'faire eyes', now seeming 'like lamps of *quenched* fire' (3.5.29.3, my emphasis). For Belphoebe, the eyes' absent light is a prompt for 'horror' and 'soft passion' rather than eros. Only later does the episode introduce a subtext that opens in Belphoebe the possibility of a 'conditional erotics', of intimate shared experience that, perhaps, serves as an additional affordance for private intimacy that must be restrained by her public character and her allegorical identity. Throughout, the affections of both Belphoebe and Timias are complex and multiple, involving senses, passions and questions of agency that recall but greatly complicate the received tradition of courtly love.

Understanding of Spenser's description of Belphoebe's reaction to Timias's wound is further enriched by awareness of a widespread early modern hybrid that mixed Hippocratic writings and those of ancient physicians with early modern versions of Aristotelianism and Galenism. Together, these sources offered ideas, metaphors and language with which to describe sensory experience and the senses' effects upon (1) the heart, (2) embodied spirits that were thought to shape self-awareness and awareness of others in the world, and (3) rational processes in the brain that were affected by and affected the body in a reciprocal, fluid, permeable exchange. In so doing, Galenists collectively promoted a systemic view of the body and brain that Paster (2004: 12) has called a 'psychological materialism' or 'psychophysiology' – a view that allowed for fluid reciprocity and that was displaced gradually in the seventeenth century by an emerging mechanistic discourse of physiology.<sup>8</sup> Spenser's representation of Belphoebe's interaction with Timias is also enriched by seeing it as what Colombetti calls an imaginative, dynamic 'emotional episode', wherein the fictional appraisal of the wounded squire is not 'purely cognitive' or divorced from 'the bodily components of emotion'; rather, Belphoebe's body first and then Timias's become that 'through which something else is experienced', both through their represented bodies in the text and through their bodies as imagined by readers. In just the stanzas quoted above, the reader shifts fluidly from sharing Belphoebe's perception of the wounded Timias to focusing on the emotional change *within* her, the latter contributing to what might be called in an engaged reader the *embodied* simulation of Timias's pain as witnessed through Belphoebe's eyes, with the reader's own mimicry of the fictive characters active, perhaps, at the level of neurons and muscles.<sup>9</sup>

<sup>8</sup> See Debru 2008: 268–73; Siraisi 1990: 107–9; Wheeler 2005: 21–53.

<sup>9</sup> See Edith Stein's *Empfindungseinführung*, qtd by Colombetti 2014: 173–6, 203–4. On 'embodied simulation', see Gallese 2005: 36–41; Gallese and Cuccio 2015: 13–19.

Taking into account the views of early modern theorists of the body such as Melanchthon, Levinus Lemnius and Thomas Wright as well as contemporary theories of embodiment and enactive affection, one can perceive Spenser's poem as inviting its reading audience to experience characters' mutual pain and to form an empathetic, *enactive* bond with them. In this invitation to shared experience, the poem *extends* the story-world's affective network beyond two characters and *outside* the physical text. I distinguish here the idea of literary extension from philosophical and psychological theories that identify cognitive extension preponderantly as a computational, causal connection of the brain and body to artefacts in the world. Instead, I link literary extension such as that found in the episode at hand to theories that emphasise dynamic processes and dynamic systems, especially ones like Colombetti's that apply to emotions and like Jan Slaby's that apply to 'inter-affective exchanges' wherein a 'manifested emotional expression . . . of one interactant is apprehended by the other in the form of an affective bodily resonance' that 'in turn modifies the second person's expressivity', creating 'a dialogical sequence of mutual corporeal attunement' (2014: 42).<sup>10</sup> Andy Clark argues that these two approaches to cognitive extension need not be exclusive but rather, potentially, are complementary (Clark 2008: 24–8). Colombetti and Slaby point to the significant role emotions play, the exchange of affect from body to body and the openness of permeable bodies and brains to emotions and their stimuli. Slaby goes further by writing that inter-affective exchanges that are experienced dynamically through embodied interactions and emotional atmospheres occur not only in social interactions but also in 'dynamic art forms', including music, film, theatre and dance (Slaby 2014: 41). Following Cave, one can by considering the effects of imagination add poetry and fiction to this list of dynamic forms (Cave 2016: 144). According to Miranda Anderson, one can trace in Renaissance writings the notion of cognition as enacted and extending from an author via the medium of their works, with authors shaped by the works which they shape through a form of co-creation, as well as shaping their readers who in turn may produce works of their own.<sup>11</sup> Extensions of this sort, which combine the embodied brain in the textual artefact with embodied affective enaction, are implicit not only in Spenser's episode but also, as I will present below, (1) in early modern theories of spirit, considered at once in its physical and divine semantic domains; (2) in early modern physicians' efforts to 'pierce' the envelope of the body to heal inward disease with therapies that include manipulation of affect; and (3) in an early modern enactive poetics that theorised that manipulation of affect could inspire readers to act virtuously. Metaphoric 'piercing', whose implications Hannah Wojciehowski explains in the following chapter, acted as an early modern affordance. It opened early

<sup>10</sup> See a similarly 'expansive approach' to extended mind by Anderson 2015b: 5.

<sup>11</sup> Anderson (2015b: 142, my emphasis): 'The Renaissance shows clear evidence of participating in the notion of the subject and the mind as extendable beyond the head and body boundaries. This concept included not only the fashioning of the subject or the mind through interaction with one's own text; a text was also valued for its potential ability to generate mental offspring in others.'



modern approaches to the whole body and its extended, dynamic engagement with others – including imagined characters and readers – in the world, and it facilitated models of enactive and affective exchanges with other people. In short, the metaphor helped shape early modern ideas about what we today may call embodied, enactive and extended affectivity.

In what follows I consider some of the contexts that favoured the development and spread of the sixteenth-century theoretical hybrid that I refer to as ‘Galenism’, as well as representative applications of it to theology, medical theories and poetics. Naturally, there existed a long history of late classical and medieval writers who had copied, translated or commented on at least some of Galen’s enormous corpus as well as the Hippocratic corpus and relevant writings by Aristotle and other classical philosophers of nature and medical practitioners. Besides, medical knowledge derived from many alternative sources, including folk medicine, natural magic and texts that passed along information about the body and its processes that related more or less distantly to the academic tradition. But during the sixteenth century Galenism became both more technically specific and more accessible as ancient sources made their way to print, first in Greek, then in Latin and sometimes the vernacular. It gained influence and infiltrated quotidian discourse as it filtered out from the universities to wider, increasingly literate audiences. After outlining some basics of Galenism and Galenic thinking, I turn to writings by Philipp Melanchthon, Levinus Lemnius and Thomas Wright, all of whom integrated an embodied and enactive Galenic psychophysiology into their discourse and writing, and I close with consideration of how ideas of embodiment and inter-affective exchanges link to early modern poetics and literature and contribute to a history of distributed cognition.

## Galenism and Early Modern Medicine

In the late fifteenth and sixteenth centuries recovery and dissemination of writings by classical medical writers such as Hippocrates and, especially, Galen led to renewed interest in anatomy and physiology. Although Galenic ideas, including humoural theory, had circulated in the West since the Latin translations and summaries of Galen by Avicenna and Averroes, only a small fraction of the Galenic corpus was readily accessible by the mid-fifteenth century.<sup>12</sup> In the late fifteenth century humanists looking *ad fontes* added classical medical works, including those by Galen, to the broad range of ancient Greek texts to be edited and translated. Between 1480 and 1514 Giorgio Valla, Niccolò Leonicensi, Wilhelm Kopp and Lorenzo Lorenzano translated into Latin about one-eighth of Galen’s large corpus. Between 1517 and 1524 the Padua-trained Englishman Thomas Linacre translated into Latin almost as much again, just prior to the Aldine Press edition in 1525–6 of the nearly complete Galen in Greek (Durling 1977: 77; Nutton 2008:

<sup>12</sup> According to Siraisi (1990: 97–101), medieval natural philosophers focused on reconciling Galen’s anatomy, physiology and psychology with Aristotle’s.

370–2).<sup>13</sup> Afterwards, the Aldine edition was translated into Latin and then into vernacular languages, with the result that Galen was associated with ‘new’ humanist approaches to medicine and with innovations such as medical demonstrations and the practice at universities of dissection of cadavers spreading from Italy across Europe. Combining learning and popular spectacle, their vogue inspired both literal and figurative ‘anatomies’ (Nutton 2008: 373–8; Lindemann 2010: 86–96).

Influences other than humanism, of course, drew the attention of early modern intellectuals to the practice of medicine and natural philosophy attributed to Aristotle, Hippocrates, Galen and other ancient sources. Charles Webster, for instance, finds that health crises in early Tudor London were the material cause that prompted Linacre to translate Galen’s works on hygiene and methods of diagnosis and prognosis and that led to his establishment in 1518 of the Royal College of Physicians as a way to regulate the training of physicians and the quality of care.<sup>14</sup> Bouts of plague, influenza, typhus, smallpox and measles had afflicted Londoners periodically before, but frightening new diseases appeared at the close of the fifteenth century, including the ‘great pox’ or ‘French disease’ first recorded in 1495 and the sweating sickness that peaked in London in 1485, 1508 and 1517.<sup>15</sup> In an atmosphere of epidemic, the urgency to devise treatments for widespread disease, amplified by the emerging readership created by the print industry, provided a reason to turn to the ‘new’ Galenism and its recommended hygienic practices and treatments. Aside from experiential reactions to plagues and diseases, the recovery, translation and publication in vernacular languages of non-medical Greek texts, including the romances of the first centuries ce, made accessible works that featured late Greek, Galen-influenced assumptions about the body and affective exchanges. Romance narratives by Matteo Maria Boiardo, Ludovico Ariosto and Torquato Tasso merged the characters and plots of Greek romance with chivalric romance and other sources and contributed to the spread of late Greek ideas of the body among early modern Europeans, influencing late-sixteenth-century England writers such as Philip Sidney, Shakespeare and Edmund Spenser. Early modern romance narratives supplemented other classical and medieval models with received fictions of adventure, rescue, intrigue, passion and erotic encounters from the Second Sophistic.<sup>16</sup> And running through early modern romances were

<sup>13</sup> Nutton (2008: 368) writes that Leonicensis made the ‘clarion call for Greek medicine’ when he published in 1492 a catalogue of errors in Latin translations of Galen and concluded that students of medicine must return to the original Greek. Galenists followed this advice as regards medical methods and anatomy (372).

<sup>14</sup> Webster 1977: 208. In founding the Royal College in 1518, Linacre sought to replace clerical oversight of physicians in London by the Bishop of London and Dean of St Paul’s, with regulations modelled on licensures in Italy (Lindemann 2010: 214; Webster 1977: 207–8; Guy 1982: 532–3).

<sup>15</sup> The sweating sickness gained special notoriety and attention from physicians in England because it afflicted prominent aristocrats and visitors, including Erasmus, Richard Fox, Thomas Wolsey and Henry VIII (Lochman 2014: 125–8). In contrast to these survivors, Erasmus’s friends Andreas Ammonius and John Colet and many thousands of others died.

<sup>16</sup> See Skretkovicz 2010: 336–9; Konstan 1994: 187–217; Cline 1972: 273–6.

assumptions about the body that stressed the coherent, dynamic interaction of interior organs, spirits and humours commonly thought to account for health and disease.

Whether seen through the lens of Galen directly or through the hybrid Galenism that permeated sixteenth-century culture, early modern interest in the body included new emphasis not just on anatomy and hygiene but also on physiology, especially on explanations of the dynamic actions – interactions and processes of sensation, passion, spirit (or *pneuma*) and key internal organs. These elements of the body received attention that vied with the medieval focus on the humours and their formation of an individual's 'complexion' (Siraisi 1990: 104–6). Early modern medical writers were particularly attentive to Galen's (inconsistent) valuation of the nutritive, vital and psychic spirits and their anatomical and dynamic linkages within the body to three principal organs: the liver, heart and brain.<sup>17</sup> Galen rarely allowed himself to speculate on internal physiology, which he could not observe well, but Galenic tradition came to identify each of the three organs as the site of a specific 'concoction' or 'cooking' that networked with the whole body. The heart in particular was both the source of 'vital' spirits and a nexus of impressions received by the body's senses. This two-fold function made the heart and the vital spirits mediators between exterior sensation and internal physical processes. From the heart, heated and refined blood – activated by the vital *pneuma* – flowed throughout the arterial circulatory system and conveyed vitality to the whole body, including the brain. There, the heart's vital spirits circulated through the ventricles and produced highly refined psychic spirits that flowed within and from the brain and became visible as tears, which flowed to the eyes through the optic nerve (Debru 2008: 271–2). As this process suggests, the Galenic view of the relation of body to brain and to faculties within the brain supposes a continuum that is fluid and mutable, and it is subject to dynamic, reciprocal actions from body to brain and brain to body (Paster 2004: 18–20). Such a view corrects ahistorical conceptions of faculty psychology, including one advanced by George Lakoff and Mark Johnson, who have contrasted modern cognitive science with all pre-twentieth-century faculty psychology, the latter being said to describe the essence of humanity entirely as the 'autonomous capacity of reason' (Lakoff and Johnson 1999: 16–17, 36–7).

Galen himself never unambiguously stated which of the three principal bodily organs dominated in this dynamic process, but he did seem to favour the brain, especially when he wrote of vivisections he performed on animals to demonstrate the effects of severing nerves in the spine (Rocca 2008: 247–52). Early modern Galenists, who included philosophers and theologians as well as physicians, applied elements of Galen's language and systems to vernacular essays, drama, poems and fictional narratives, these often combining Galen's physiology of organs, spirits and fluids with Aristotle's preference for the heart as the primary organ and the cause of all motion, sensation and passion (Siraisi 1990: 81–2). Medieval attempts to

<sup>17</sup> Galen (2011), *Method of Medicine III, Books 10–14*, ed. I. Johnston and G. H. R. Horsley, XII.5.839K–840K; see also Debru 2008.

unify Aristotelian and newly recovered Galenic theories of the body in the twelfth and thirteenth centuries had helped produce Christian interest in theories of the nature and unity of the soul so that, according to Nutton (2008: 378), Galen's three 'systems of the body', each linked to a key organ, came to be joined to the 'three instruments [nutritive, vital and psychic spirits] by which the faculties of the *soul* controlled the body'. In this synthesis, the spirits played a key role mediating and unifying the body's systems, and they were thought to contribute to and to be enacted by a soul 'distributed' throughout the body. Through enaction, they played a more-than-metaphoric role in uniting the divine Spirit and its actions to human souls. As Charles H. Parker (2014: 1269) writes, efforts to connect linguistically, conceptually and corporeally the divine, heavenly Spirit with Galenic vital spirits led theologians to blend 'humoral pathology with Christian anthropology, resulting in a close identification between bodily and spiritual welfare'. In early modern versions of the body, the ancient Aristotelian emphasis upon the heart became integrated with an increasingly refined understanding of Galenism, particularly with respect to its dynamic physiology and its motivating sensations, passions and spirits, and, as we will see, it became linked to cultural and religious assumptions that gave prominence to the passions in relation to sense and the brain.

## Dynamic Affectivity and Cognition

In the middle of the sixteenth century Philipp Melanchthon explained what we call embodied affectivity and a version of cognition by examining the soul. It is not surprising that a theologian would take up this task, but it is surprising that Melanchthon, the defender of and successor to Martin Luther, did so. In the 1521 *Adversus Rhadinum pro Luthero oratio*, the young Melanchthon staunchly defended Luther's 1520 banishment of Aristotle's works on physics, metaphysics, the soul (*De anima*) and ethics from the curriculum at Wittenberg. Both had argued that these works, in contrast to more utilitarian Aristotelian works on logic, rhetoric and poetics, were to be shunned as jargon-laden, heretical and of use primarily to Catholics who would presume to know God's mind (Kusukawa 1995: 42–4). After receiving the mantle as the leading spokesman of learned reformers, however, Melanchthon came to rely on Aristotle's natural philosophy to respond to arguments of Protestants and Catholics who, in one way or another, opposed Luther's teachings on the sacraments, vestments and other issues.<sup>18</sup> By 1533 Melanchthon had reclaimed Aristotle's *De anima* for university study, and in 1540 he published his notes, including comments with quotations in Greek directly from Galen and

<sup>18</sup> According to Kusukawa (1995: 65–7), Melanchthon first softened Luther's prohibition against philosophy by arguing that St Paul in Romans (14: 21) had condemned only the *abuse*, not the use, of philosophy. Later, as a leader of the 'Magisterial Reformation' that sought arguments to set alongside negative attacks on Catholic doctrine, Melanchthon allowed for a 'positive philosophy' aimed at 'corporeal life' in the world, apart from the divine, true teaching of the spiritual life found in the Gospel. He used this new space for philosophy to distinguish Lutheran orthodoxy from other teachings, Catholic and Reformed.

other ancient sources, as the *Commentarius de anima*.<sup>19</sup> In 1552 Melanchthon retitled the *Commentarius* the *Liber de anima* and added several new anatomical details drawn from the recently published *De humani corporis fabrica* of Andreas Vesalius (1543). Moreover, as Kusakawa emphasises, Melanchthon also added to the volume an important explanation of the Holy Spirit's embodiment in the soul.<sup>20</sup> The *Liber de anima* shows Melanchthon working toward an understanding of embodied physiology and psychology within a Galenic framework that we could call distributed affectivity and cognition. Moreover, within the context of reformed theology, he opens the door to creating a psychophysiology in ways we might consider a version of extended affectivity: he describes the divine Spirit's piercing affect and motion as it penetrates and animates the will within the human soul congruent with the cognitive insight derived from Christ as *logos* (λογος). The human body becomes the medium or 'text', as it were, wherein God inscribes dynamic love, with the result that, in turn, its divinely inspirited soul may act in imitation of God by literally 'in-spiring', breathing into, affecting and moving others. Melanchthon's ideas of the mutual interaction and responsiveness of the senses, internal spirits and the brain align broadly with theories of distributed cognition and affect advanced by Luiz Pessoa, Marc David Lewis and Colombetti, in that all avoid basing embodied awareness exclusively or dominantly on noetic cognition and, alternatively, assign an important role to dynamic 'affective interconnectedness', allowing for the affect of an other (divine or human) to merge with one's body and inspire cognitive activity through mimicry or penetrating infusion. The result, one might say, is an experiential convergence and extension that is a 'social' and/or 'divine' bonding.<sup>21</sup>

Melanchthon addresses this interconnectedness in the opening chapter, in a passage that reflects upon the Trinitarian *imago Dei* within humanity, wherein the scriptural identification of the Son as *logos* establishes him as an image, the

<sup>19</sup> Despite its title, Melanchthon's *Commentarius* differed substantially from Aristotle's *De anima*. Kusakawa (1995: 87–92) writes that Melanchthon reduced Aristotle's concern for the 'first principle of animated beings' to examination of the faculties (*potentiae*) and powers (*vires*) of the 'whole nature of man', that is, the human soul and body. In addition, the *Commentarius* featured a lengthy (usually ignored) section on the parts of the body and soul drawn from medical authorities unknown to Aristotle, especially Galen, whose works the learned Melanchthon often cites in Greek.

<sup>20</sup> Kusakawa (1995: 118–20) speculates that Melanchthon may have been inspired to revise the *Commentarius* by the growth of humanist medicine, the 1543 appearance of Vesalius's anatomical studies and a wish to update his university lectures on *De anima*. The only critical edition of the *Commentarius* and *Liber de anima* is found in vol. 13 of *Corpus Reformatorum Philippi Melanchthonis Opera quae supersunt omnia*, ed. Bretschneider and Bindseil – cited below as 'CR'. Nürnbergger's Latin edition in *Melanchthons Werke in Auswahl*, ed. Stupperich, and Keen's English translation (1988) omit entirely the long section of *Liber de anima* (1553) – almost two-thirds of the whole – that treats the physical body, selecting the section *De sensibus interioribus*, which moves quickly to philosophical and theological treatment of affects in relation to the rational soul. Lost in the omission is Melanchthon's physiological basis that unites physical and spiritual activity.

<sup>21</sup> Pessoa (2008: 148) locates full integration of cognition and emotion within the brain, removing the latter as an exclusive site for 'processes such as memory, attention, language, problem solving and planning'. Also see Lewis 2005 and Colombetti 2014: 15–20, 171–202, 204.

printed text, as it were, of the Father's *cognitio* or 'word' (John 1: 1). From scripture, Melanchthon writes, 'we know also that image to be formed within us'.<sup>22</sup> But alongside the noetic faculties are the soul's dynamic animating affects, which are, for Melanchthon, as tightly bound to God as intellection – both together constituting a dynamic cognitive hybrid. He frames this idea in the language of Galenic vital spirits when he writes that affects

arise from the heart and in truth are flames that are spread by the fires in all the affects – in joy, sorrow, love, hate, anger and the others. And these flames in the heart are congruent with unfeigned motions of the will. Through this analogy, whenever it occurs, I reflect on the name of the Holy Spirit, and I learn that name was bestowed on him in scripture because he is a cause of action (*agitor*) and as it were a flame proceeding from the will of the Father and Son, by whose immeasurable goodness divinity joins itself (*sibi copulat*) to us and fulfils our joy just as a mother, kissing an infant son or daughter, imparts (*effundit*) vital spirits.<sup>23</sup>

When addressing Aristotle's definition of the soul, Melanchthon explains the difficult word 'entelechy' in Aristotle's *De anima* by agreeing with Boethius that Aristotle had meant by it dynamic action or *agitatio*, not something already completed (e.g. *acta* or *res effectas*).<sup>24</sup> As Quintilian and Cicero had claimed when describing the energy transmitted from a rhetor to an audience, entelechy implies continuous motion (*energeia*), with the result that the soul is to be understood, like the Holy Spirit, as in process and active, and as an analogue of the heart with its vital *energeia* out of which emerges Galen's *pneuma* or vital spirit: 'the soul is an entelechy; that is, it is not matter, not fire, not water, not vital spirit, but life itself by which vital spirit lives'.<sup>25</sup> The human brain and body and its metacognitive, divine source dynamically fuse intellect and affect in a similar, perhaps even the same, process.

After focusing on several alternative philosophical descriptions of the soul's operation in the body, Melanchthon abruptly shifts focus, departing from his usual practice in *Liber de anima* of dispassionately outlining views by philosophers and physicians and considering instead an explicit theological counter to them. He observes that Aristotle and other philosophers had, by their definitions of soul,

<sup>22</sup> CR 13.7–8: 'Cogitatione enim formari imagines in nobis quoque scimus'. Translations in the text are my own.

<sup>23</sup> CR 13.8: 'Praeterea spiritus vitales in homine, nascuntur in corde, et vere sunt flammae, quae in omnium adfectuum incendiis, in laetitia, dolore, amore, odio, ira, et aliis, sparguntur. Et cum motibus voluntatis non simulatis hae flammae in corde congruunt. Ex hac umbra utcunque cogitamus de nomine Spiritus sancti, et discimus ei hanc adpellationem in divinis literis tribui, quia sit agitator, et quasi flamma, a voluntate Patris et Filii procedens, qua divinitas immensa bonitate nos sibi copulat et nos leticia complet, sicut effundit mater vitales spirilus osculans infantem filium aut filiam.'

<sup>24</sup> CR 13.12: 'Anima est Endelechchia prima corporis physici organici, potentia vitam habentis.' See Aristotle, *De anima* 412a 27.

<sup>25</sup> CR 13.15: 'Anima est Endelechchia, id est, non est materia, non ignis, non aqua, non spiritus vitalis, sed est ipsa vita, qua vivit spiritus vitalis.' See Bellucci 1998: 322–8.

managed only to distinguish the rational soul from the appetitive and spirited souls of animals. What remained undetermined, he writes, is the substance of the rational soul or mind, where it is located, and what the vital and animal spirits are. To address such matters, Melanchthon turns to theology and a distributed model of divinely affective and enactive cognition, noting that, as created by God, humans possess a soul and nature distinct from the animals. The cause of this distinction is ‘one soul, the *spiraculum*’, the ‘breath of life’ that is received from the Spirit as by Adam in Genesis 2: 7. It conveys divine light, and that brings life to all parts of the body.<sup>26</sup> Melanchthon builds on this statement by allowing that, although Galen had located the rational soul in the brain, others (including Aristotle) had placed it in the heart as ‘the fount of life and the seat of all affects that accompany cognition’.<sup>27</sup> In this passage, Melanchthon prefers Aristotle to Galen precisely because Aristotle agrees with those of the prophets and apostles who wrote of the heart as the source not only of affect but also of cognition (*de parte cognoscente*). He cites Paul’s ‘men have the law written in their hearts’ (Romans 2: 15) to confirm that ‘the heart . . . is the residence of the soul, whence it moves actions in other members at a determined distance’.<sup>28</sup> This soul, distributed throughout the body, can and should be responsive to God’s Spirit and then extend outward to others enactively, in the way a mother’s breath – her in-spiration and *energeia* – passes to her child through a kiss.

Following this overview of the soul, Melanchthon offers a fascinating sketch of a generally Galenic anatomy and physiology, with enough extraneous detail to demonstrate an academic curiosity about these subjects. He praises the human body as a manifestation of God’s creative power. He refers in passing to Vesalius’s anatomical discovery that the heart’s wall allows no exchange of blood between the ventricles, contra Galen, and refers often to Plato, Aristotle and Hippocrates. In general, though, he maintains a Galenic view of what Paster describes as the body’s psychophysiological activity. Detailed review is not possible here, but it is worth noting that he pauses to discuss at length the operations of the heart and its relation to the arteries and nerves connected to the brain, assigning to it three specific functions: (1) above all, the heart is the source and beginning of life and vivifying heat; (2) it is the source of spirits that temper the brain, activate the brain and nerves and provide vital energy for thought, sensation and motion; and (3) it is the seat and source of affects (CR 13.56–7). In a rare allusion in *Liber de anima* to the doctrine of the fall, Melanchthon writes that ‘God wanted to illumine our brain with rays of his wisdom’ and join them to our heart, ‘enjoying the knowl-

<sup>26</sup> CR 13.17: ‘In homine esse animam unam, videlicet spiraculum illud, simul vehens lucem divinam, et adferens vitam partibus omnibus congruentem.’

<sup>27</sup> CR 13.19: ‘Galenus animam rationalem in cerebro collocat, quia ibi sunt sensus interiores, quorum ministerio proximo anima rationalis in cogitatione et ratiocinatione utitur. Alii malunt, cor sedem esse animae, quia cor vitae fons est et sedes omnium adfectuum, qui cognitionem sequuntur.’

<sup>28</sup> CR 13.19: ‘Sit igitur cor animae domicilium, in quo ad certam distantiam in coeteris membris ciet actiones.’

edge of God' (*laetantia agnitione Deo*). But the brain and heart, meant to be united in harmony and sympathy, have fallen into a disorder (*turbata*) that obstructs the divine action of the spirit.<sup>29</sup> He devotes much attention to the brain, where the vital spirits grow 'more lucid' and become 'celestial' because of the fiery flames in the cerebrum, the 'organ of action' of interior senses (common sense, imagination, memory, ratiocination, judgement). Yet, in a process reminiscent of Belphoebe's discovery of Timias, Melanchthon's embodied spirits trace their beginning to the external senses that, like the waves produced by a stone thrown into water, make their way with the aid of vital and then psychic spirits to the interior senses through the cavities of the brain, whose sponge-like surface records their impressions, much like shapes that result from the impress of a seal (CR 13.69–70).

The centrality of the heart in *Liber de anima* mirrors its importance in Melanchthon's reformed theology, a point Daniel M. Gross makes when writing of Melanchthon's *Loci communes* (1521). There Melanchthon asserts that 'the heart and its passions must be the greatest and most potent part of man', a view Calvin shared with Melanchthon when writing that 'The assent which we give to the divine Word . . . is more of the heart than the brain, and more of the affections than the understanding . . . faith is absolutely inseparable from a devout affection'.<sup>30</sup> Tribble and Keene (2011: 28–9) note that reforming preachers and divines often used the very words 'piercing' and 'pricking', as of the heart, 'to figure the potential for articulation between external action and internal transformation' – for prayer that is faithful devotion rather than mere repetitive mimicry. Other early modern writings influenced by Galenism may have had a less overt theological relevance, yet even medical texts were shadowed by religious and moral convictions that linked physical health to spiritual virtue. Medical writings by the physicians Levinus Lemnius (1505–68) and Thomas Wright (1561–1623) illustrate the increasingly commonplace convergence of Galenic physiology with spiritual and moral therapies, and they continue to presuppose Melanchthon's dynamic convergence of affect and cognition.

In 1561 Lemnius published *De habitu et constitutione corporis*, a work Thomas Newton translated into English in 1576 as *Touchstone of Complexions*. Ordained a Catholic priest late in life, Lemnius, from Zeeland in the Netherlands, had earlier been associated with Protestantism and Protestants. His book presents a mix of Aristotelian and Galenic physiology that, like Melanchthon's, describes the bodily spirits (natural, vital and animal) as products of combusive mixtures of humour and heat in, respectively, the liver, heart and brain.<sup>31</sup> For Lemnius, if embodied spirit 'be sincere and pure, not mingled with anye straunge or forrayne quality, it

<sup>29</sup> CR 13.58: 'Voluit Deus lucere suae sapientiae radios in cerebro nostro.'

<sup>30</sup> Qtd by Gross 2012: 134–5. Melanchthon's merging of theology and medicine has medieval and sixteenth-century precedents, with ministers and priests capable of assuming the role of physicians: see Parker 2014: 1278–80; Lochman 2014: 118–22, 126–7.

<sup>31</sup> For Lemnius, the natural, vital and animal spirits or vapours are transported in the blood throughout the body, giving to it life, nourishment, growth, maintenance of health and procreative power (1582: 7v–8r).



causeth tranquillity of minde, frameth maners in good order & fashioneth, and finally qualifyeth and calmeth all affections'. Conversely, impure spirits produce disturbed minds, behaviours and affects. The physician is to diagnose impurity, assign a therapy and then sustain health, but, according to Lemnius, doing so has been hampered by Adam's sin, after which humankind bore a natural 'promptnes and inclination to euill' until Christ's redemption made it possible to mitigate the evil 'imaginations and thoughtes of mans heart'.<sup>32</sup> According to Lemnius, since Christ's death and resurrection, all, especially physicians, must recognise that bodily spirits *can* be 'prouokers and prickers forwarde *both* to vices & vertues' (my emphasis). That is, the spirits' actions within the body are indeterminate as regards both health and moral behaviour, so, through Christ's power, people *can* enjoy the restored imagination and corrected passions, a hybrid of noesis and affect. As regards health, embodied spirits are akin to what Galen had termed 'non-naturals'. The latter included environmental factors distinct both from what is in itself 'natural' and healthy for a body and from what is essentially 'unnatural' or toxic (Siraisi 1990: 101; Floyd-Wilson 2004: 133–4; Pender 2010: 193–209). For both Galen and Lemnius, a physician is to manipulate bodily spirits and non-naturals to achieve good health, as is evident in the regulation of – in addition to passion – access to clean air, exercise and rest, and healthful food and drink. Floyd-Wilson has observed that Galen's including passion in the list of non-naturals as an environmental influence may be particularly challenging for moderns to grasp. She writes, 'we understand emotion as internal, or part of our self, and not as an ecological or physiological force that moves in and out of the body. And yet early modern passions do cross the self's shifting and fluid boundaries' (2004: 134). Floyd-Wilson describes precisely the physiological exchange of sensation and emotion that Spenser represents in Belphoebe's piercing pity and that is omnipresent in the dynamic cognition and psychophysiology of Melanchthon and Lemnius. For Lemnius, the job of the physician is to penetrate the unhealthy body, minister to diseased passions, spirits, humours and organs and thereby restore the body's 'complexion'. The physician must take into account factors external to the body, including a patient's geographical location, since such can affect the body's natural balance. He allows that 'education, institution, and discipline' can help to overcome an environmental imbalance, but a physician often must prescribe therapies such as dietary regulations or chirurgical practices that are more potent. In both of these latter therapies, the physician is to extend his knowledge, as it were, into patients' bodies by means of material artefacts such as food or the surgeon's knife. Such treatments were thought to correct the effects of local climate, such as the cool and moist air that, Lemnius (a native of the Netherlands) speculates, makes the English people disinclined to the humanities and arts.<sup>33</sup>

<sup>32</sup> Lemnius 1582: 8r, 14v. The mind is prone to succumb to a 'lewde deuīs or wilfull thought', such as a sexual 'phantasie' wherein it casts off the restraint of reason that should moderate spirits and passions (1582: 14r–v).

<sup>33</sup> Spirits, wits and manners are affected by the 'condition and nature of the Place, Ayre, Countrey,

Lemnius's physician must be aware, then, of the body's dynamic permeability – from outside in and from inside out – and use that principle in the cure of disease. The physician's cures seek to recreate and sustain a patient's health, and, for Lemnius as for Melanchthon, this activity imitates the divine Spirit's infused *spiraculum* or breath – 'the breath of lyfe' – which accompanies the divine gift of creating 'an image after the similitude of God himself'. Just such a *spiraculum*, one recalls, Melanchthon had associated with the Holy Spirit that pierces and permeates the body.<sup>34</sup> Indeed, Lemnius (1582: 22r) observes that bodies are susceptible to being pierced by external spirits such as angels or demons – spirits 'without bodies' that converge experientially as they 'slyly and secretly glyde into the body of man'. For many early moderns, the traffic of human spirits, affects, divine Spirit and spirited beings through the portals of the body would have seemed commonplace, and many would have had little difficulty accepting the principles of a distributed cognition that connects brain, body and world. Moreover, both Melanchthon and Lemnius seem to adhere to the strong claim that the heart and passion, moved by the world and within the body, shape the activity of the brain just as the brain modulates passion, with this ideal reciprocity of affect and noesis a consequence of embodied permeability and the dynamic exchange of vital and psychic spirits.

Like Lemnius, the priest Thomas Wright had a career that, though firmly rooted in Catholicism, interacted with Protestantism in ways that encouraged hybrid religious beliefs as well as investigation of the body. The geographical path for Wright, from England through the University of Milan, Spain, the Netherlands and then to France, coincides with his persistent efforts to restore England to Catholicism.<sup>35</sup> Imprisoned in London's Gatehouse sometime after 1596, Wright used the time to author books on the Eucharist and on the passions, the latter, titled *The Passions of the Mind*, being first published in 1600, then republished in 1604 in an expanded form. Like Melanchthon and Lemnius, Wright signals a Galenist perspective that becomes evident when he states that 'passions . . . be certaine internall actes or operations of the soule' (Wright 1604: 8). Passions therefore are, like the vital spirits, expressions of *energeia* derived from the soul. He notes the passions' liminal status as 'bordering vpon reason and sense', and in Chapter 4 of Book I he amplifies the point that the passions contribute to spiritual as well as physical health. He sets Stoic *apatheia* – a view he ascribes to ancients and moderns who require passions to be entirely subject to reason – against the authority of scripture and Christ. The latter confirm that at least some passions are saintly, even godly. Wright sketches the physiology of the passions centred in the heart along lines we

and nourishment', with varying effects evident in national temperaments (1582: 16r–20r).

<sup>34</sup> For Lemnius, people have 'their minds taken out of a porcion of Gods owne spirite, as Cicero sayth, or rather according to the testimony of the holy Scriptures, haue receyued the breath of lyfe, and an Image after the similitude of God himselfe' (1582: 21r).

<sup>35</sup> Wright became alienated from both sides of the religious controversy because of his eagerness to return to England from exile in 1595, under the protection of the Earl of Essex, a pursuit that led both to his being dismissed from the Jesuit order for dangerous activity and to suspicion of Roman influence from clerics in the English church (Milward 2004).

have noted previously (Book I, Chapters 8–10), save that he clearly distinguishes the passions of the heart from those of the mind. The latter are ‘affections in the highest and chiefest part of the soule’ that men share with God, such as ‘love, hate, ire, zeale’, in contrast to those linked more closely to embodied sensation.<sup>36</sup> Pender notes that, in giving prominence to affections more closely linked to the brain, Wright accepts the sovereignty of the rational faculties. Even so, Pender continues, Wright would have agreed with the physician Humphrey Brooke, who wrote as late as 1650 in *Hygiene, or A Conversatory of Health* that ‘there is a mutual influence from the *Body* upon the *Mind*, and from the *Mind* upon the *Body*: not necessitating, but inclining’.<sup>37</sup> Such views directly counter claims that faculty psychology inevitably implied a tyrannical governance of brain over body.

In Book 5, Wright considers the relation of embodied sensation to passion when he undertakes extended descriptions of therapeutic activities that combine ‘morally textured’ physical interventions with sensation, including music and oratory that are intended to soothe or inspire the passions. Referring to classical, biblical and theological authority to describe the moving effects of music, Wright considers four theories that explain how it affects the passions, two of which, he states, are of less concern for a physician.<sup>38</sup> The third, though speculative, Wright finds more ‘palpable’ in that it accounts for music’s effects on the body and subsequent influence on the soul:

[M]usic, which according to the best philosophie, is nothing else but a certaine artificiall shaking, crispling, or tickling of the ayre (like as we see in the water crispled, when it is calme, and a sweet gale of wind ruffleth it a little . . .) which passeth thorow the eares, and by them into the heart. And there beateth and tickleth it in such sort, as it is moued with semblable passions. For as the heart is most delicat and sensatiue, so it perceiueth the least motions and impressions that may be: and it seemeth that musicke in those celles playeth with the vitall and animate spirits, the onely instruments and spurres of passions. (Wright 1604: 170)

Wright here outlines a process that, though primitive, theorises music’s ability to penetrate the senses and stir passion in the heart, anticipating some aspects of affect

<sup>36</sup> For Wright, the highest part of the ‘reasonable’ soul, the will (1604: 30–2), should be most removed from sense and appetites. Gowland (2013: 80) distinguishes via Galen between diseased passions of the soul, ‘which could be treated by a morally textured therapy’, and diseases of the body, including the brain, which ‘responded only to physiological treatment’. Solomon 2012 cautions against a tendency among some historians of early modern culture to reduce the importance of the mind as the focus of Wright’s treatment of the passions.

<sup>37</sup> Qtd by Pender 2010: 210–11.

<sup>38</sup> The first is an ineffable ‘sympathy, correspondence, or proportion betwixt our soules and musick’ that is like the mysterious attraction of iron to a lodestone, and the second, God’s intervention through music (Wright 1604: 168–9). Wright’s fourth point, omitted here, acknowledges the diversity of receptions of music, related to the varied moral states of the audience as well as ‘naturall dispositions’ or ‘complexions’ that the skilful physician can regulate without appeals to reason (171).

theory. Assumptions about the power of music to move body and mind are commonplace in early modern literature. They inform, for example, Shakespeare's *Tempest* (c. 1610) when Prospero, stranded by political enemies on an island, conjures 'marvellous sweet music' (3.3.19) to allure his enemies to the banquet where the spirit Ariel, in a frightening interruption, reveals them as rebels and attempted murderers. Later, Ariel describes to Prospero how his playing a pipe and drum had affected the crude companions of Prospero's brother and uncle, along with the island's native Caliban: when the music began, Ariel recalled, all pricked up their ears like 'unbacked colts'; they 'Advanced their eyelids, lifted up their noses, / As they smelt music'. Overpowered in this way, Ariel easily led them to a 'foul lake' whence there was no escape (4.1.174–83). Such literary representations play on and presuppose early modern psychophysiological effects of music upon the senses, passions and hence the brain and mind. Indeed, they anticipate in broad outlines the views of cognitivist theorists of music. Tom Cochrane (2008: 332–9) has argued that in jazz improvisation the musician's interactions with an instrument, the constraints implied in a musical piece and a unique expressive character comprise the musician's cognitive extension. Joel Krueger (2014b: 539–44) goes further by describing music as a 'real-time emotion regulator' that produces the 'emotion-specific reactive behavior' that extends from creator to a receiver.

Wright turns to rhetorical performance as another therapeutic for diseased passions of the mind. He writes that a physician who uses 'proper words and sound reasons' as well as actions marked by 'a certain moderation of the voice' and gesture can effect a cure of a patient (Wright 1604: 172). He summarises at length the basic principles of rhetoric and logic that should guide 'sound reasons' but asserts that such are most fit for an audience that is already wise; for 'the common people or men not of deepe iudgement', the orator must rely more on voice and gesture (Wright 1604: 183–293, 174). He explains that 'the passion wherewith the oratour is affected passeth by the eyes, for in his face we discover it . . . those passions we see, nature imprinteth deeper in our hearts, and for most part they seeme so euident' as to admit no doubt, whereas 'the suspition of sophistication' felt by an audience 'is much more encreased' when a reasonable orator lacks the passion needed to 'stirre vp' an audience (Wright 1604: 174–5). For Wright, sight is the sense that most powerfully 'imprints' passion in the heart and overcomes cognitive doubt; therefore, the physician/orator must be seen to feel passion if he is to express it forcefully, a commonplace of rhetoric borrowed from Cicero's *De oratore* (2.45.189–90). With reference to Galenic physiology, however, Wright describes the powerful combined effect of visual passion and eloquence: it 'passeth not onely thorrow the eyes, but also pierceth the eare, and thereby the heart; for a flexible and pliable voice, accommodated in manner correspondent to the matter whereof a person intreateth, conueyeth the passion most aptly, pathetically, and almost harmonically' (Wright 1604: 175). In this way, the rhetorically skilled physician, like a musician, embodies passion and performs it enactively for the health of others, achieving what Anna Gibbs has called 'affect contagion' (2010: 191).

Like Melanchthon and Lemnius, Wright traces a process whereby the senses activate passions that in turn affect the brain, which in turn affects the passions as well as the kinetic operations of the body in a loop whose configuration shifts dynamically along with changes in any of its components. A nearly seamless process presumes bi-directional permeability of sensations linked to the world and body/brain such that the brain may be unwittingly affected by the extended world (as by therapies that reconstitute it) and also extend outward to the world by means of visual rays, sources of sound, and spirits. The process is embodied and enactive, with the subjective self both the receiver of sensations from the world, one who is linked to and informed by it, and an agent projecting itself outward to others and the world. This process constitutes cognition in an expansive sense that includes consciously or subconsciously perceived sensation rooted in the world, passion, and kinetic response in the world in communion with perception and the 'higher' faculties of ratiocination and intellection.

### Poetic Imagination and the Brain

For Wright, the immediacy of sensation, especially of sight and sound, reduces the value of imagination, which, he writes, lacks a 'visible object' (1604: 158). On this point he differs from Philip Sidney, who in his *Defence of Poesy* describes the 'right poet' as a kind of physician of the soul and mind who uses imagination to inspire affective delight in a reader.<sup>39</sup> In fact, Sidney insists that *only* the poet (by whom he means a writer of drama, fiction and poetry proper) produces something other than what is rooted in sense, using imagination to 'make things either better than nature bringeth forth, or quite anew'. For Sidney (2001: 64–5), an imaginative creation has the same physical and moving effects as what exists materially. When the poet produces an imitation or, in Sidney's phrase, a 'speaking picture' that unites sight and sound, he 'yieldeth to the powers of the mind an image of that whereof the philosopher bestoweth but a wordish description which doth never strike, *pierce*, nor possess the sight of the soul so much as that other doth' (my emphasis). The motivating force of poetry's piercing image affects the heart and therefore, in Sidney's poetics, has the affective power to move an audience to wish to act virtuously, virtue being what the mind knows through the 'inward light' of conscience but cannot, in man's fallen state, achieve: 'to be moved to do that which we know, or to be moved with desire to know, *Hoc opus, hic labor est!*' (Sidney 2001: 61, 74, 83).

The defective motivating power Sidney attributes to reason in the postlapsarian mind gives point to poetic mimesis as a dynamic art form capable of moving readers and characters. Poetry for Sidney, as Colombetti might express it, allows the writer to 'converge experientially' with an audience through the extended medium of a text, and it offers the potential for the author, characters and audience to achieve 'affective interconnectedness' through the imaginative power of

<sup>39</sup> Sidney's *Defence of Poetry* was composed around 1580 but published posthumously in two editions in 1595.

fiction. In theory, then, Sidney's poetics turns the piercing point of pity outward, extending it to an audience that may use it as a therapeutic for diseased virtue. Whether a writer succeeds in stimulating that complex affect, much less whether a writer manages to move a reader to virtue, remains open to question. But within the framework of Galenic embodiment, a psychophysiology that privileges the imagination should be capable of stimulating the passions and producing action, whether performed consciously or not. Through fiction, the poet becomes a physician of the soul, restoring what Melanchthon had described as the dynamic entelechy that propagates the body's vital spirits. Literature, healing and theology converge. As we have seen, theoretical assumptions about the psychophysiology of the body had guided Melanchthon and Calvin just as they had the physicians Lemnius and Wright when the latter emphasised the action of the heart and passions as precursors and shapers of thought in the experiential and fallen world. Although Sidney and Wright disagree on the therapeutic value of the imagination, they agree on the dynamic effects of discourse and vision upon the heart and therefore upon the power of the senses and passions to unite with and even lead the brain. They presume a version of cognition that is far more expansive than the noetic model that arose in the seventeenth century, a version that can be extended to, pierce and penetrate an audience.

In thinking of imagination, sensation and poetry's effect upon an audience, we return to the stanzas from *The Faerie Queene* with the thought that it instantiates an early modern idea of an affective bond between Belphoebe and Timias, one that potentially extends outward from that text to us as readers, bringing us to witness and perhaps participate in an interactive exchange across centuries. Whether our part in that exchange is or can be historically accurate cannot be determined, but examination of cognitive and affective dynamics across centuries expands the affordances of a text to us, increasing the significance and the possibilities for entering into antique story-worlds. Paster (2004: 20) encourages study of 'the phenomenological character of early modern experience of emotion' because it contributes to an emerging cultural history of emotion, and this history is an important component of a history of distributed cognition. Early modern theories and representations of passion remind us of and teach us the many ways to understand affectivity; they help us identify and eschew unwarranted assumptions about the relation of body and brain, both then and now; they demonstrate why explanations of emotional experience must allow for a broad range of variation and contingency. And they offer us the promise of discovery of early modern minds glimpsed at points of convergence.

## Metaphors They Lived By: The Language of Early Modern Intersubjectivity

*Hannah Chapelle Wojciehowski*

### **Language in Our Grasp: A Brief History of Conceptual Metaphor**

In their 1999 book *Philosophy in the Flesh: The Embodied Mind and its Challenge to Western Thought*, cognitive linguist George Lakoff and philosopher Mark Johnson made a modest proposal: human language, even at its most abstract, relies on metaphors of the body; its functions, feelings and perceptions; and its movements in space and time. Understanding an idea, they pointed out in a classic example, is often described as *grasping* something, while *not* understanding might be described as *going by* a person or *going over one's head* (Lakoff and Johnson 1999: 45). Conceptual metaphor, as they called this phenomenon, is a tool that humans use to explain in language the abstract and subjective in terms of other, more concrete domains of sensorimotor experience that are situated, as it were, closer to hand.

In *Philosophy in the Flesh* Lakoff and Johnson called for nothing less than a reassessment of the conditions of reason itself. They argued that '[t]he same neural and cognitive mechanisms that allow us to perceive and move around also create our conceptual systems and modes of reasons. Thus, to understand reason we must understand the details of our visual system, our motor system, and the general mechanisms of neural binding' (Lakoff and Johnson 1999: 4). Understanding these facts requires a reappraisal of the Western philosophical tradition, which for more than two millennia has celebrated its transcendence of the corporeal and the natural world by means of the exalted power of human reasoning; in doing so, the authors held, philosophers have consistently failed to recognise the embodied and metaphorical dimension of their discourse.

At the time that they published *Philosophy in the Flesh*, Lakoff and Johnson were not only amplifying their earlier collaboration on conceptual metaphor, *Metaphors We Live By* (1980), as well as Johnson (1987) and Lakoff (1987); they were also responding to the then-new scientific theories of the embodied mind that had emerged in the early to mid 1990s, notably those of Varela, Thompson and Rosch (1991) and Damasio (1994). The insights of *Philosophy in the Flesh*, which seemed radical at the time, have now been largely absorbed into mainstream philosophy

and linguistics, psychology and neuroscience.<sup>1</sup> Lakoff and Johnson's insights have also played a key role in the theorising of distributed cognition, a separate but related conversation that began in the mid to late 1990s, which was driven by many of the same developments in the social sciences, cognitive science and AI that had influenced Lakoff and Johnson,<sup>2</sup> and which ultimately incorporated the embodied mind as one of its foundational concepts.

Just as the paradigm of the embodied mind can be said to deconstruct the division of mind and body, which has been a staple of Western philosophical discourse since antiquity, so do theories of distributed cognition challenge the notion of the isolated, individual mind, disconnected in its thought processes from other people and the environment.<sup>3</sup> Building on ideas from the phenomenological tradition in twentieth-century philosophy, the philosophy of distributed cognition is, at least in certain of its variants, a philosophy of intersubjectivity. Analysing the history of distributed cognition (hereafter HDC) – the task of the present collection of essays – is potentially revealing, since it throws into relief pre-modern conceptions of the self in relation to others, or of the body in relation to the natural world and constructed environments. Many cultural historians have contended that these older conceptions reflect a greater sense of connectivity between self and other, in tandem with a greater sense of bodily porosity and/or vulnerability. John Sutton (1998: 41) has argued that by the late Renaissance and Enlightenment, the human body began to be imagined as 'a static, solid container, only rarely breached, in principle autonomous from culture and environment, tampered with only by diseases and experts'. In response to Sutton, Gail Kern Paster, Katherine Rowe and Mary Floyd-Wilson (2004: 16) propose that 'early modern Europeans had not yet separated the mind from the changeable body, or the body from the world'. In the Middle Ages and Renaissance, the human body was understood to be permeable, 'a porous, labile arena of contesting fluids,' they contend (15), not yet imagined as individuate. Exploring HDC in light of these findings has the power to defamiliarise what we know, or think we know, about ourselves and those who preceded us, and to challenge solipsistic, 'brainbound' (Clark 2008) strands of post-Cartesian philosophy that are still with us today. HDC offers a fundamentally new and mind-expanding way to understand the past and to 'supersize' the study of history and culture.<sup>4</sup>

<sup>1</sup> Conceptual metaphor theory has received many challenges, as well as endorsements. For a summary of such challenges, see McGlone 2007. McGlone takes issue with CM theorists' 'hyper-literal construal of the relationship between metaphoric language and thought' (122). There are indeed ways in which CM theory does not work perfectly, and it continues to be debated across many fields.

<sup>2</sup> Anthropologist and cognitive scientist Edward Hutchins is often credited with the concept of distributed cognition, which he began developing in the 1980s and elaborated most fully in his 1995 book *Cognition in the Wild*. Andy Clark and David Chalmers' 1998 article 'The extended mind' also helped to precipitate key debates in the conversation on distributed cognition.

<sup>3</sup> 'Cognition (or mind, or thought, or intelligence . . .) may be said to be distributed when it is, in some way, spread out over the brain, the non-neural body and (in many paradigm cases) environments consisting of objects, tools, other artefacts, texts, individuals, and/or social/institutional structures' (Wheeler 2014).

<sup>4</sup> Here I would suggest that 'supersizing' the past, (a concept I adapt from Clark (2008), is a way of



There are many possible approaches to HDC in the Middle Ages and Renaissance. One might seek out and analyse, for example, major statements in philosophy, theology, medicine and literature, in order to understand how early modern thinkers understood the interface between the mind and the body; the self and the group or the environment; or the human and the divine, the animal or the demonic. One might study artefacts of the past – whether concrete and material (e.g. physical objects<sup>5</sup>), immaterial and conceptual (e.g. juridical codes), or behaviours and practices (e.g. arts of memory<sup>6</sup>) – in order to deduce more about the ways in which cognition was distributed over structures of different varieties. One might also look to language itself for clues embedded in recorded usages of weight-bearing words and metaphors that provide clues to how people in the past thought about the world. New techniques in gathering and classifying so-called big data will also help us to understand patterns of thought that have not been readily perceived before the advent of databases and computer modelling.<sup>7</sup>

## Conceptual Metaphor, Extended Mind and the History of Emotion

Originally presented as a companion piece to Dan Lochman's 'Pierced with Passion',<sup>8</sup> included in the present volume, this chapter offers a case study of some of the conceptual metaphors that Lochman tracks across a wide range of literary, theological and medical texts. In his chapter Lochman investigates the rich intellectual history of the passions as represented in Renaissance literature and culture, which he reinterprets in light of recent theories of distributed cognition. Following Giovanna Colombetti (2014: 204) Lochman explores the 'affective interconnect- edness' implicit in the revival of Galenic thought in the Renaissance. In studying

approaching the study of history in a non-individualistic, systemic and dynamical way. What that might look like the reader can gather from the present collection of essays.

<sup>5</sup> Anderson (2007a, 2007b, 2015b) analyses the effects of the improved technology of the mirror, as well as the sociocultural contexts, on the use of the mirror as a metaphor for distributed cognition in the Middle Ages and Renaissance.

<sup>6</sup> See, notably, Tribble 2011 and Anderson 2015b.

<sup>7</sup> For example, the Metaphor Map of English, now being created by scholars at the University of Glasgow, enables its users to track the use of metaphors over a 1,300-year period, from the Anglo-Saxon era up to the present. This new database and map represents a major breakthrough in our ability to understand networks of metaphors in the English language and to see how these metaphors change over time. See <<http://mappingmetaphor.arts.gla.ac.uk>> (last accessed 10 December 2018). See also Brad Pasanek's systematic and wide-ranging study of metaphors of early modern mind and distributed cognition, *Metaphors of Mind: An Eighteenth-Century Dictionary* (2015). This study relies on big data culled from a comprehensive database of eighteenth-century texts in English. Pasanek's model shows new possibilities for tracking the diffusions of a set of ideas across a culture and across time; it is a major historical and methodological contribution to the study of metaphor, as well as the study of mind.

<sup>8</sup> Our papers were presented in tandem at the History of Distributed Cognition Workshop 2, dedicated to the Middle Ages and Renaissance, in Edinburgh in May 2015.

the passions, Lochman analyses an aspect of distributed cognition that has up to now been relatively little theorised – namely, emotions and emotionality. In this chapter I shall draw on CM theory in order to bring to light a different, though compatible, body of evidence regarding the history of emotions in the Middle Ages and Renaissance.

The absence of emotion as a topic within some areas of DC research has been noted by the philosopher Jan Slaby (2014: 32), who contends that philosophers of Extended Mind<sup>9</sup> have been relatively unconcerned with emotions and affective states until quite recently. Slaby proposes his own enactivist approach to the study of emotion. He argues that emotional experiences, far from being bounded by an individual's brain-body system, 'contain an element of phenomenal fusion or coupling – in face-to-face interaction, in a person's immersion in a group, or in the absorbed beholding of a work of art'. He also proposes that collective emotions are 'promising candidates for extended emotions' (Slaby 2014: 32).

Similarly, Colombetti and Evan Thompson propose an embodied, enactive approach to the study of emotions. They define enaction as the way that living beings 'enact or bring forth their own cognitive domains'. They state:

An autonomous system, instead of processing pre-existing information 'out there', brings forth or enacts information in continuous reciprocal interactions with its environment. 'Inner' and 'outer' are not separate spheres, connected only through a representational interface, but mutually specifying domains enacted in and through the structural coupling of the system and its environment. (Colombetti and Thompson 2008: 55)

It is this definition of enaction by Colombetti and Thompson that I will rely on in my analysis of conceptual metaphors of embodied, extended, enacted emotion that were used in the early modern period: specifically, the metaphor of piercing or being pierced with passion and/or other emotions and/or perceptions.

To this 3E approach (cf. n. 9) I shall add an additional element, as yet largely untheorised within philosophical conversations on distributed cognition: namely, gender. This perspective, which I call the GEEE approach, focuses on the ways in which conceptual metaphors often depend on notions of gender, in addition to those of embodiment, extension and enaction. While gender may, at first glance, appear to function as a subset of the embodiment criterion, gendered conceptual metaphors may or may not align with the sexed body of the speaker, or of the person, object or situation being described, but may instead be understood as the

<sup>9</sup> Slaby uses the phrase Extended Mind more or less as a synonym for distributed cognition. Other philosophers – e.g. Wheeler (2014) – speak of extended mind as one of four specific perspectives on DC, along with embodied, embedded and enacted mind: the so-called 4Es. In Wheeler's more narrowly defined sense, extended mind refers to a view of cognition as not exclusively internal to the brain-body system, but also scaffolded on and partially realised by external factors beyond the skull and skin (cf. n. 3).

speaker's projection or fantasy of embodiment. Gender is tricky to theorise as an aspect of distributed cognition, since it arises from the fact of our embodiment, yet in our languages and imaginations, gender has, as it were, a life of its own. Distributed cognition is generally discussed by philosophers and critics as if it were gender-neutral, but, as we shall see from the case study analysed in this chapter, gender is fairly fundamental to the way humans think about the world. Drawing attention to the gendered aspect of DC, then, helps us to understand our own embodiment better, while also enabling us to perceive and, if desired, to critique in new ways the long history of real and imagined gender differences, as well as the political, social and conceptual hierarchies that have been naturalised in and by our metaphors.

Conceptual metaphor theory offers a useful avenue for exploring gendered discourses on the passions in the early modern era, since the study of metaphors of emotion by CM theorists and cognitive linguists is by now a well-developed area of research; however, synchronic analyses such as Lakoff and Johnson's far outnumber diachronic ones that attempt to take historical and cultural forces into account as well. Lakoff and Johnson propose 'Love is a Journey' as a typical example of conceptual metaphor (1999: 64–72 ff.). To what extent can this metaphor and others like it be called universal? Linguist Richard Trim has broached this question, raising the nature/nurture problem at the heart of the matter:

[T]he emotions logically epitomise the potential of metaphor creation based on physiological conceptualisation. Are the emotions ultimately physiological or, at least, one of the most physiological semantic fields that exist? Doubts have crept in during discussions on the salience of love metaphors. There seem to be a large number of cultural factors involved in the way we behave in love if we look at different historical periods. (Trim 2011: 108)

I shall raise this same question in the context of a set of conceptual metaphors related to pity, empathy, love, desire, understanding and openness to others – mental states that were metaphorised as 'piercing'. These metaphors provide many clues to how early modern people in England represented their own mental processes as highly susceptible to outside influences, which were imagined as physical intrusions.

Elaborating on Lakoff and Johnson's synchronic model of conceptual metaphor, I shall also draw on Richard Trim's method for diachronic study (2007, 2011), by considering the interrelation of conceptual mappings and cultural history.<sup>10</sup> I shall argue that conceptual metaphors constitute a form of distributed cognition, and a highly efficient one at that.

<sup>10</sup> Trim (2011: xi ff.) establishes six parameters for the study of the historical evolution of language: namely, the analysis of conceptualisation processes innate in the human mind; the role of structures – grammatical, syntactical and others – within individual languages; the potential influence of universal mechanisms on long-term paths of metaphors; culture; diachronic salience; and the types of semantic fields selected for metaphor analysis.

## The Point of Pitty: The Challenge of Historicising Conceptual Metaphors

In his epic poem *The Faerie Queene* (1590), Edmund Spenser includes many episodes of love (or passion or empathy) at first sight. Among them is the story of Belpheobe, a beautiful virgin huntress who happens upon a severely wounded young man lying unconscious in the woods. At the sight of Timias, Belpheobe is stricken with emotion. Spenser writes:

Saw neuer liuing eie more heauy sight,  
That could haue made a rocke of stone to rew,  
Or riue in twaine: which when that Lady bright  
Besides all hope with melting eies did vew,  
All suddainly abasht shee chaunged hew,  
And with sterne horror backward gan to start:  
But when shee better him beheld, shee grew  
Full of soft passion and vnwonted smart:  
The point of pittie perced through her tender hart. (3.5.30)

Belpheobe's heart is pierced by 'the point of pittie',<sup>11</sup> which is to say that she is deeply moved by the sight of the wounded Timias, who has been literally pierced in the thigh by an enemy's spear (cf. Lochman in this volume). An additional metaphor rounds out the line: Belpheobe's heart is 'tender'. The final line of this stanza presents a complex metaphor,<sup>12</sup> which might be loosely rendered as 'To Feel for Another is to be Wounded', (or possibly) 'Empathy is Wounding'.<sup>13</sup>

To feel empathy may imply that one is soft or tender to begin with; however, Belpheobe is in fact *tenderised* by the 'point of pittie'. In other words, it is the sight of Timias's wounded state that induces an affective alteration in her. Belpheobe 'chaunged hew' – that is, her complexion or mood altered as she perceived a sight that moved her to feel 'soft passion' and 'vnwonted smart', or unaccustomed pain. Though Belpheobe is looking at Timias, the 'point of pittie' seems to originate with

<sup>11</sup> The exact meaning of the word 'pittie' in this Spenserian example is hard to pin down. I would gloss it, following the *OED*, as 'Tenderness and concern aroused by the suffering, distress, or misfortune of another, and prompting a desire for its relief; compassion, sympathy' (*pity*, n., 2b).

<sup>12</sup> Building on Joe Grady's analysis of primary metaphors (1997: 19–31 *et passim*), Lakoff and Johnson propose a theory of complex metaphors, which are compounded from primary ones: '[a]ll complex metaphors are "molecular," made up of "atomic" metaphorical parts called *primary metaphors*. Each metaphor has a minimal structure and arises naturally, automatically, and unconsciously through everyday experience by means of conflation, during which cross-domain associations are formed. . . . Universal early experiences lead to universal confluents, which then develop into universal (or widespread) conventional conceptual metaphors' (1999: 46).

<sup>13</sup> There may be another conceptual metaphor implied here, as well – namely, 'Love is War'.

Timias and to move from Timias to Belpheobe. Like an arrow, it bores through her heart.

While Belpheobe ministers to Timias's wounds, treating them with herbal remedies, this process is reversed. Timias soon falls in love with Belpheobe when she looks at him:

O foolish Physick, and vnfruitfull paine,  
 That heales vp one and makes another wound:  
 She his hurt thigh to him recur'd againe,  
 But hurt his hart, the which before was sound,  
 Through an vnwary dart, which did rebound  
 From her faire eyes and gracious countenance.  
 What bootes it him from death to be vnbound,  
 To be captiued in endlesse duraunce  
 Of Sorrow and despaire without aleggeaunce? (3.5.42)

This time it is Timias whose heart is 'hurt' by 'an vnwary dart' from Belpheobe's eyes and 'countenance'. He is smitten with overwhelming desire for her – a physical desire that will not be reciprocated by Belpheobe during the course of the epic. That condition – 'captiued in endlesse duraunce / Of Sorrow and despaire' – is, needless to say, a painful one for Timias.

Interestingly, the notion that our eyes receive or emit arrows (or darts, currents or flows) of feeling is, in fact, an ancient one, though it does not seem to be universal. Ruth Cline (1972) traces the conceit as far back as Aeschylus and Plato, through later Greek and Hellenistic writers, and into the medieval Arabic poetic tradition. In the twelfth century, it passed from Arabic letters into French and Provençal writings, where it was prominently featured in romances such as Chrétien de Troyes' *Cligès*.<sup>14</sup> While the present chapter focuses on one verb – 'to pierce' – it would certainly be possible to trace a nexus of related words and metaphors that could be rendered as 'To Feel for Another is to be Wounded'.<sup>15</sup> What is common to all, however, including the Spenserian 'point of pitty', is a pre-modern theory (actually many theories) of vision as a two-way process connecting our internal world with the one outside. According to this view, vision is both passive and agentive, to use Cline's term<sup>16</sup> – or, alternatively, extramissive

<sup>14</sup> Chrétien (1176) writes in the *Cligès*: 'Or me di donc reison comant / Li darz est parmi l'uel passez, / Qu'il n'an est blechiez ne quassez. / Se li darz parmi l'uel i antre, / Li cuers por coi s'an dialt el vandre / Que li ialz ausi ne s'an dialt, / Qui le premier cop an requialt?' (2009a: ll. 694–700); 'Now speak reason to me: how has the dart passed through thine eye in such wise that the eye is not wounded or bruised by it? If the dart enter through the midst of the eye, why does my heart suffer pain in my body? Why does not my eye also feel the pain, since it receives the first blow?' (2009b).

<sup>15</sup> The Glasgow Metaphor Map, as yet unfinished, will make it possible to explore a nexus of metaphors such as this one (see n. 7).

<sup>16</sup> The concept of the agentive gaze, of eyes that strike the eyes of the beloved into the heart, is one of five related ideas that Cline traces from the Greeks to the Provençal poets. The others are love at

and intromissive – for describing how something goes out from the perceiving eye toward the object being perceived, or how something from that object enters into the eye. I shall return to these theories later in this chapter, because they play a central role in the history of distributed cognition as it relates to perception, affect and also cognition.

Not surprisingly, neither Grady nor Lakoff and Johnson mention ‘Pity is Piercing’ in their lists of primary metaphors.<sup>17</sup> This absence raises an interesting question, precisely because this particular example may not leap to our minds as a way of describing the experience of compassion or of incipient passion, of falling in love. Perhaps we tend to phrase it differently today, or perhaps the metaphor still exists, but somewhat vestigially, as, for example, in the iconic Valentine’s heart pierced by an arrow (conceptual metaphors can be visual too; see Trim 2011: 12–13).<sup>18</sup> In the Middle Ages and Renaissance, by contrast, this particular affective metaphor and related ones were highly salient and in wide circulation.<sup>19</sup> They are important reference points for the study of HDC.

## Diachrony, Metaphoric Slippage and the Problem of Fixed Meanings

Let us now consider the etymology of the verb ‘to pierce’, meaning ‘To penetrate; to pass or break through or into something, especially as or in the manner of a sharp-pointed object’, or ‘to travel or make one’s way through or into’ (*OED pierce*, v., 1a). An Anglo-Norman word imported to England at the time of the Norman Conquest, ‘pierce’ derives from the Old and Middle French word *percer*, to pierce

first sight; the eyes as agents, as well as perceivers of beauty; strife between the heart and eye; and the heart’s potential escape from the body to join the beloved (Cline 1972: 263).

<sup>17</sup> Lakoff makes a distinction between superordinate categories of conceptual mappings that include basic level categories within them (2006: 195–6). Thus he might argue that ‘pitty’ is a basic level category of a superordinate category such as sympathy. However, what is missing from his list is a conceptual metaphor linking certain kinds of emotions and pain, or pain-pleasure – admittedly hard to capture under a single conceptual mapping.

<sup>18</sup> Under its entry for the verb *pierce*, the *OED* offers the following recent example of piercing in its extended sense of ‘To affect keenly or deeply with emotion (as pain, grief, etc.); to touch or move deeply. Freq. in *to pierce one’s heart*: ‘1996 *San Antonio Express-News* (Nexis) 8 July 2 b A beautiful young lady whose tears reflected the emptiness that pierced her heart.’ ‘Pity is Piercing’ may still exist as a primary metaphor, but it is arguably less salient today than it was in the Renaissance. Lakoff (2006: 192) states, ‘Metaphor, as a phenomenon, involves both conceptual mappings and individual linguistic expressions. It is important to keep them distinct. Since it is the mappings that are primary and that state the generalisations that are our principal concern, we have reserved the term “metaphor” for the mappings, rather than for the linguistic expressions.’ Given this position, Lakoff might split off the diachronic aspect of metaphor – i.e. expressions of primary metaphors that are particular to an author or perhaps a time period – as secondary and inessential. From an HDC perspective, the diachronic expression assumes far greater importance than it does in Lakoff and Johnson’s accounts of CM.

<sup>19</sup> See, for example, Cline 1972, Klein 1979, Baldwin 1986, Krier 1990, Stewart 2003, and Hendrix and Carman 2010.

through, to penetrate, and from the post-classical Latin verb *pertusiare*. There are cognates in Occitan (*pertusar*), as well as Italian (*pertugiare*).

By extension, pierce or piercing could also refer to the intense physical effects (cold, light, noise, etc.) that suggest the penetrating action of a sharp-pointed instrument (*OED pierce*, v., 2b). Perhaps the most familiar fourteenth-century example of the verb in this extended sense occurs at the beginning of *The Canterbury Tales* (1987):

Whan that Aprill with his shoures soote  
The droghte of March hath perced to the roote  
And bathed every veyne in swich licour  
Of which vertu engendred is the flour (ll. 1–4)

There is an added sexual overtone in Chaucer's opening lines, since the 'vertu', or force, of the rain not only pierces the drought of March, but also engenders the flower.

We might contrast Chaucer's *percing* with Dante's use of *pertugio* in its noun form at the tail end of the *Inferno*:

salimmo sù, el primo e io secondo,  
tanto ch'i' vidi de le cose belle  
che porta 'l ciel, per un pertugio tondo.  
E quindi uscimmo a riveder le stelle. (XXXIV, 136–9)

we mounted up, he first and I second, so far that through a round opening I saw some of the beautiful things which Heaven bears, and thence we issued forth again to see the stars. (Alighieri 1990: 369)

Dante and Virgil pass through the bottom of hell into Purgatory by means of an anus-like passage through the centre of the earth, a *pertugio*, which enables them to come out the other side of the planet and see the constellations above them again. This usage, though seemingly more literal than Chaucer's, may nevertheless carry the suggestion of an orifice in the world's body, for such was a secondary connotation of the word in medieval Italy.<sup>20</sup> The Italian verb *pertugiare* did not develop clear affective or cognitive secondary meanings, at least not in the early modern period (*Grande dizionario* 1961–: XIII, 131–3), though such meanings did emerge in French as early as the thirteenth century (*percer*, *Grand Larousse* 1971–: 5, 4142; *OED pierce*, v.).

By Chaucer's time the word 'pierce' had acquired the affective connotation that had appeared earlier in the French language: namely, to 'affect keenly or deeply with emotion' (*OED pierce*, v., 5). Implicit in that figural use of the word and cen-

<sup>20</sup> The *Grande dizionario della lingua italiana* (1961: XIII, 132, 4) defines a secondary meaning of *pertugio* as an orifice of the human body. This meaning seems not to have passed into the English language.

tral to this philological case study of HDC is a concept of the body, the emotions or the self as a container<sup>21</sup> susceptible to penetration. This metaphoric meaning of ‘pierce’ entails embodiment, extension and enaction, since outside forces are imagined as producing an affective state change with the bodily container of a given subject by piercing it.

Here it is important to distinguish between literal and figural enaction. When philosophers of distributed cognition speak of enaction, they mean literally ‘a process of dynamic interaction between the sensorimotor capacities of an organism and its environment, a process in which significance is not recovered, but enacted’ (Wheeler 2014). By contrast, what I call figural enaction is an ‘as if’ process, not real, but felt, imagined, and described by metaphors that represent an enactive view of some process, such as feeling pity or falling in love. To experience sympathy, for example, is to feel *as if* one has been pierced by an arrow (only better). To be pierced by a gaze, in contrast, was understood, at least by some, as a literal enaction – that is, an actual, interactive physical process typically involving two bodies.

In the 1509 allegorical poem *The Pastime of Pleasure*, Stephen Hawes revisits Chaucer’s metaphors and gives them a different spin. In that poem the protagonist Amoure declares his love for Pucell, exclaiming:

O Lorde God than! how joyfull was I!  
 She loked on me wyth lovely countenaunce;  
 I kyst her ones or twice right swetely;  
 Her depured vysage, replete with pleasaunce,  
 Rejoyced my heart with amerous purveaunce.  
 O lady clere! that perste me at the rote,  
 O floure of comferte, all my hele and bote! (1846: 88)

Hawes seems to have had the opening of *The Canterbury Tales* in mind as he wrote these last two lines (*perste*, *rote* and *floure* parallel Chaucer’s word choices), only here it is Amoure himself who is pierced at the root (i.e. to the core, with possible sexual overtones as well); interestingly, it is Pucell, the flower ‘herself’, who pierces.

A comparison of Hawes’ and Chaucer’s uses of piercing metaphors raises interesting questions about the gendering of these and other CMs during the time period in question. Gender remains, as noted earlier, a largely untheorised topic within the philosophy of distributed cognition,<sup>22</sup> though it is highly relevant to the material at hand, and in general worth exploring. In the instances presented so far, a gaze that pierces appears to be an equal-opportunity metaphor, insofar as it can apply to men or women. Sometimes, however, the metaphor may imply an ironic subversion of expected gender roles and power dynamics, as in the case of Hawes’ Amoure and Pucell.<sup>23</sup>

<sup>21</sup> On the self metaphorised as a container, see Lakoff and Johnson 1999: 275.

<sup>22</sup> A notable exception is the discussion of gender in Anderson (2015b), especially 57–61.

<sup>23</sup> Anderson (2007a: 74) describes another instance of affective piercing that is of relevance here:



We may also observe a similar subversion of gender norms in Spenser's description of Belpheobe, since it is the sight of the wounded and passive Timias which disarms the huntress, who is otherwise impervious to the opposite sex. Yet ultimately it is Timias, wounded by the 'unwary dart' of Belpheobe's eyes, who ends up more frustrated by his passion than she is by hers. If Spenser was using his characters to comment on the vexed real-life relationship of Queen Elizabeth I and Sir Walter Raleigh, as Spenser himself indicated (Mills 1990), then the story of Belpheobe and Timias is not only about random people falling in love in the woods, but also about the power dynamics of the Elizabethan court, headed by a commanding female sovereign. Spenser was communicating to an audience of inquiring minds no doubt interested in understanding those dynamics, either to better navigate them themselves or to imagine others doing so.<sup>24</sup>

Gendered metaphors like those discussed in this chapter have implications for how men and women enact their power through their sexed bodies, but also – and just as importantly – through their metaphors of enaction; that is, through the ways that they think about themselves and others. Such metaphors can be gendered counter-sexually, as we have seen. Is the piercing gaze, regardless of the sex of the owner, also a phallic gaze? Arguably it depends on the instance and the context, as well as the hermeneutics of the reader. Certainly such a gaze is a powerful one, because it is, from an HDC perspective, enactive. Since it is based on pre-modern understanding(s) of how vision operated, the study of this particular metaphor helps us recognise something non-obvious about the past: because they conceptualised vision and bodily vulnerability differently, early moderns also conceptualised power and its distribution differently than we do today.

It should also be noted, however, that Renaissance literature and visual art are replete with the motif of the mutual gaze, studied by Robert Baldwin (1986) – the paradigmatic example being John Donne's famous line 'our eye-beams twisted' in 'The Exstasie'.<sup>25</sup> Mutual gazes, then as now, generally suggest a more tender and egalitarian exchange between the two gazers, though today we are far less likely to believe in agentive vision, mutual or not. As Baldwin concluded, 'the Renaissance fusion of eye and spirit, in part dependent on the incorrect optical notion of projecting eye-beams, has become a beautiful thing of the past.'<sup>26</sup>

In addition to its re-gendering of Chaucer's famous line, Stephen Hawes' meta-

Chaucer's Troilus is pierced by Love's arrow before falling in love with Criseyde. Anderson explains that event is understood as a version of the fall of Adam, which relates to the medieval understanding of human knowledge, and acts as an inversion of the conventional gendered binary opposition: 'the phallic arrow of desire impales the male lover and masculine reason submits to the feminine senses.'

<sup>24</sup> DeNeef (1994: 163) interprets Spenser's motives in writing *The Faerie Queene* as follows: 'It might be argued . . . that the poem is specifically addressed to such men as are subject to the omnipresent gaze of the ever-absent queen, and that the gentleman that Spenser wishes to fashion is precisely one who understands that gaze to constitute him as a subject.'

<sup>25</sup> Discussed by Baldwin 1986: 30, 38, 43.

<sup>26</sup> Baldwin 1986: 43.

phor of the piercing of Amoure by Pucell is intriguing for another reason, since it shows how metaphors can morph in the hands of a poet into different yet related ‘containers’ of meaning.<sup>27</sup> Chaucer’s complex metaphor becomes something quite different in Hawes’ hands. In this way metaphors are distributed geographically, across languages and across time. They are passed forward in time, providing a vast repertoire of thought configurations to others who use a language, or who one day will use it. Changes in meaning may result from the conscious intentions of language users, especially persons who speak or write creatively, but they may also be the result of slippage – a non-conscious, unintentional or not quite precise reuse of the metaphor that results in slight or substantial variations in meaning.

### Piercing Insight: Cognitive vs. Affective Applications

In Chaucer’s day, other English writers were employing the verb ‘pierce’ in a more cognitive and active sense, i.e. to ‘penetrate with the sight, mind, or intellect; to see thoroughly into, discern; to understand, make sense of’ (*OED pierce*, v., 6a). Two sides of cognition are encompassed by one verb: the first associated with feeling, and the second with knowing and understanding. As we shall see, though, there were and are not just two sides.

The English translation of the second volume of Erasmus’s *Paraphrases of the Newe Testament*, prepared by Miles Coverdale and John Olde, presents a clear example of a more cognitive inflection of the piercing metaphor: ‘Ye receiued the lawe, but ye geue none eare to that it sayd, or if ye gaue eare unto it, ye understande it not, because ye cleaue to the literall meanyng onely and pearce not to the spiritual sence therof’ (1549: XVr). In contrast to the previous examples, the metaphor ‘pearce’ in this translated text means ‘to penetrate deeply with the mind’. Erasmus explains, following Paul, how a listener can and should move from the literal sense of the law to the deeper, figural one. Here, it is the act of understanding that is figured as a piercing. The literal dimension of Scripture functions as a membrane, in effect, that must be punctured if the reader is to arrive at the next level of comprehension. In Erasmus’s exegesis of Galatians 4: 21–3, ‘pearce’ presupposes a notion of enactive cognition. Reading a text carefully requires penetrating its meanings; successful understanding, in turn, transforms the reader. The act of *not* piercing may also have an affective connotation as well, perhaps of wilful reluctance or resistance to understanding, of holding back from insight.

We find a similar metaphor of cognitive piercing in Thomas Wilson’s *A Christian Dictionary* (1612), which was intended as a tool for readers of the King James Bible, which had been published the previous year (Curtin 2010: 197). Wilson sought to guide readers to a clearer understanding of Scripture by glossing key words and

<sup>27</sup> If a classic modern example of distributed cognition (Clark 2001, following Beach 1988) is that of the bartender who sets up a set of glasses on the bar in front of him in order to remember the orders he needs to prepare, as well as how to prepare them (each glass serving as a prompt for a particular drink), then conceptual metaphors are, metaphorically, like *all* the glasses in the bar. One must imagine a bar much bigger than usual for this analogy to work.

figures of speech. In one case, Wilson glosses the phrase ‘to Know Man’ as follows: ‘To pierce into his Heart, euen into his very thoughtes and purposes. Iohn 2, 24. *Because hee Knew them all.* Verse 25. *For hee Knew what was in Man*’ (1612: 277). In Wilson’s gloss, the verb ‘pierce’ seems to have cognitive as well as affective overtones, since the verses in question refer to Christ’s ability to understand the hearts of those who witnessed his miracles – hearts housing the ‘thoughtes’ but also ‘purposes’, or motives and feelings, of other people.

This use of the verb and metaphor ‘pierce’ to suggest divining the ‘thoughts and purposes’ of others was not uncommon in the time period, as we see from a 1580 letter by Elizabeth I of England to her suitor Francis, Duke of Anjou, a.k.a. ‘Monsieur’:

At one thing I reioyce – that you are so well furnished with good friends that you will not be ignorant of some of my defects, so that I am assured of not being found worse than they have represented me. And yet, being so well admonished, you will be well resolved or you will not hazard it. And I pray God to give you the grace of clear sight to pierce the unfathomable depths of their leadings, and that I do not live to be the means of your discontent. (Marcus et al. 2000: 245)

Here Elizabeth urges her French suitor not to believe everything that others might say about her; by piercing the ‘unfathomable depths of their leadings’, Monsieur will come to understand their true motives and the possible inaccuracies or slanders they produce. In this letter the metaphor ‘pierce’ has a cognitive connotation of understanding what is truly not obvious. It may hold an affective connotation as well, insofar as Elizabeth may have been asking Francis to trust her above his ‘good friends’, and to believe the best rather than the worst of her, which might cause him ‘discontent’. Interestingly, Elizabeth is speaking of her suitor’s perceptive powers, telling him how to use them. Her exhortation raises an important question: did early modern women ever describe their own intelligence and understanding as piercing or the equivalent? If so, it was not common, for I have found no examples as yet. Again, the gendering of this metaphor is quite significant, insofar as women writers may have been reluctant to describe their own mental acuity in ‘distributed’ and specifically enactive ways, that is, as piercing.

### **Event-Structure Metaphors and HDC**

Contained in all of the literal and figural (or extended) uses of the verb ‘pierce’ that have been discussed thus far is the notion, and also the feeling, of breaking through something – a cloud, a membrane, a wall, a barrier – and often that barrier is the bounded space of the body, the lens of the eye, the tympanum of the ear and so on. In their analysis of metaphors of causality, Lakoff and Johnson argue that ‘changes of state are understood as movements from one bounded region to another . . . *Bring, throw, drive, pull, push* . . . are all verbs of forced movement in their central, physical senses’, though they can be used ‘to indicate abstract causation: caused

change from one state to another' (1999: 184). Similarly, the verb 'pierce' has a literal connotation of forced motion that can be used in a range of metaphoric contexts to indicate a change in mental state, a movement from unknowing to knowing, which is frequently (though not exclusively) associated with vision. Moreover, as the previous examples suggest, these contexts are sometimes gendered, though not necessarily.

Lakoff and Johnson call this conceptual schema of causality an Event-Structure Metaphor, the features of which are the following:

- States are Locations (interiors of bounded regions in space)
- Changes are Movements (into or out of bounded regions)
- Causation is Forced Movement (from one location to another)

An interesting feature of Lakoff and Johnson's account of Event-Structure Metaphors is that they suggest not only state change, but also distribution – that is, a crossing from one space to another. Difficulties, meanwhile, tend to be conceptualised as impediments to movement, as, for example, when the mind fails to 'pearce' the literal sense of Scripture in order to arrive at the spiritual meaning.

Let us compare this more cognitive use of the Erasmian metaphor 'to pearce' to two affective metaphors of piercing in order to understand its implications for HDC. In 1606 the playwright and political writer Edward Forset published *A Comparative Discourse of the Bodies Natural and Politique*. In one intriguing passage he draws an analogy between the relation of the king and his subject and that of the soul and the body, and, mixing his metaphors, to twins in the womb. Forset explains this intimate relationship as follows:

Then as the soule is the forme which to the body giueth being, and essence; and the body is the matter which desiringly affecteth his forme: so both the ruler should wholly indeuour the welfare of his people, and the subiect ought (as in loue to his owne soule) to conforme vnto his soueraigne; that both of them mutually like twinnes of one wombe, may in the neere and deare nature of relatiues, maintaine vnuiolate that compound of concordance, in which and for which they were first combined. (Forset 1606: 3–4)

Later on Forset compares that same relationship between ruler and ruled to the head and the foot of one body (a variation on the standard body politic metaphor):

We see the head naturally endued with a fellow feeling of any the griefes in the whole bodie, in so much as there is scant any disease so weake or small in any part, as doth not affect and disturbe the head also; yea, it holdeth such a sympathie with the verie foot, as that a little wet or cold taken in that remotest place, hath forthwith a readie passage to the head. Gracious Soueraignes have the like compassions and compuncions in the distresses of their subiects, and be in the

same sort deeply peirced & perplexed with any wrong or distemperatures, hapning to the meanest of their people. (Forset 1606: 27–8)<sup>28</sup>

‘Gracious Soueraignes’ feel the pain of their subjects because they are ‘peirced’ by it. This affective piercing transfers the sufferings of ‘the meanest of their people’ into the sovereigns’ minds/bodies, where it manifests as ‘compassions and compunctions’. While the mechanism of piercing is not explained, it is analogised to ‘a little wet or cold taken in that remotest place’ (i.e. the foot) which ‘hath forthwith a readie passage to the head’. Thus empathy is compared to the mental awareness of physical discomfort in the body’s extremities. The sensation of pain or cold is also associated with piercing, as discussed above.

Affective piercing is also associated with pain in the following example from *A Midsummer Night’s Dream* (c. 1595). In Act 3, Scene 2, Shakespeare (2004) employs the metaphor of piercing in an affective sense, when Demetrius says to Hermia in the dark forest outside of Athens:

So should the murdered look, and so should I,  
Pierced through the heart with your stern cruelty.  
Yet you, the murderer, look as bright, as clear,  
As yonder Venus in her glimmering sphere. (3.2.58–61)

Here, affective piercing is understood as dyadic, though not mutual. Hermia’s eyes have a piercing power that feels murderously cruel to Demetrius. For some of the original viewers of the drama, Demetrius’s metaphor might have called to mind a theory, or indeed a set of theories, about vision as active and passive.

In her book *Gazing on Secret Sights*, Theresa Krier explains that

Physiological optics, like other studies of perception, was a field pursued with some vigor, and theories of vision debated notions of rays or images moving actively into (intromissive theories) or emerging from (extramissive theories) the eye. . . . All theories also implicitly raise the issue of the activity or passivity of the eye. The eye is thought to emit radiation, or to receive radiation from the object viewed, or to mingle its extended substance with the mediating air. The viewer may be understood as aggressor, thief, or violator, if the eye emits rays; or the viewer may be understood purely as recipient, if the eye is a receptor. The object seen may be the passive object of radiation before the viewer’s eye, or may function as an active agent by emitting radiation to another’s view. (1990: 30)

This theoretical debate, which began in antiquity, continued into the Renaissance, Krier notes, adding that ‘it was not until Kepler that a radically new concept of the

<sup>28</sup> My thanks to Mario DiGangi for introducing me to these passages in his lecture ‘Affective entanglements and alternative histories on the early modern stage’, presented on 9 October 2015 at the University of Texas at Austin.

retinal image cleared the way for redefinition of the terms of the debate' (1990: 84). Sight and desire were constantly linked; Krier notes that to exchange flirtatious glances was known as 'making babies' (1990: 84), a slightly different metaphor for enactive, penetrating gazes.

How particular authors understand the process of vision is, of course, highly relevant to what they may write about it, and the scientific or philosophical theories of a given period<sup>29</sup> may filter into a poet's account of feeling sympathy, falling in love or understanding hidden meanings, to consider the examples discussed above. Explaining how such theories trickle down – or flow across – is an important, indeed essential, part of HDC. However, the study of metaphors as ready-made<sup>30</sup> containers for thoughts and feelings, and for literary effects, provides a separate approach to HDC with a somewhat different yield. Metaphors, in a sense, do the thinking *for* their authors, who may not consciously choose to reference theories in their writings or may not even be aware of them, yet who employ metaphors in order to produce a desired affective, cognitive or other response in their readers. Metaphors may constitute an alternative, pre-theoretical route to meaning that registers in individual minds in a more immediate, *felt* and automatic way (though readers or listeners are free to mull over metaphors and draw their own inferences if they choose to do so).

## Collective Emotions and Vital Synchrony

Jan Slaby (2014: 32) has proposed that 'collective emotions seem promising candidates for extended emotions: The affective dynamics pertaining to a group profoundly transforms the individual group member's emotional experience.' Group-level affects, he suggests, may constitute a phenomenal extension of the emotions of single individuals.

It may be that Shakespeare thought so too, if we take Prospero's epilogue in *The Tempest* (1611) as a description of affective interconnectivity within a large group. In that play we find yet another version of piercing, neither cognitive nor affective, strictly speaking, but representative of a third category of shared experience that remains hard to classify. At the conclusion of the play Prospero enjoins his audience:

But release me from my bands  
 With the help of your good hands.  
 Gentle breath of yours my sails  
 Must fill, or else my project fails,

<sup>29</sup> For an extremely useful collection of essays on theories of intromissive and extramissive vision from classical antiquity, the Persian and European Middle Ages, up to the Renaissance and Enlightenment, see Hendrix and Carman 2010.

<sup>30</sup> Metaphors are in some sense ready-made, since we inherit language and its history when we learn to speak; we don't invent language, even though we may make incremental contributions to it.

Which was to please. Now I want  
 Spirits to enforce, art to enchant,  
 And my ending is despair,  
 Unless I be relieved by prayer,  
 Which pierces so that it assaults  
 Mercy itself and frees all faults.  
 As you from crimes would pardoned be,  
 Let your indulgence set me free. (9–20)

Prospero's piercing prayer 'assaults / Mercy itself' and, in so doing, aims to set into motion a large-group phenomenon: 'indulgence' on the part of the audience that 'frees all faults'. The complex of metaphors in this passage conveys gentleness, as well as violence, to jarring effect. It is a difficult passage to parse, though we may recognise in it something like the conceptual metaphor 'Empathy is Wounding' discussed earlier. Yet there is something else happening here as well. The audience is being asked for several things: to applaud, to breathe ('Gentle breath of yours my sails / Must fill'), and to grant indulgence in order to provide Prospero's 'release'. In effect Prospero asks the audience to coordinate its breathing and hand motions as part of a loosely synchronised process.

There are occasions in life, often highly gratifying, when humans synchronise, briefly and surprisingly, their explosions of shared emotion, vitality and bodily motion (facing the same direction, clapping, smiling, enjoying). As Stern (2010: 9) observes, 'The experience of vitality is inherent in the act of movement. Movement, and its proprioception, is the primary manifestation of being animate and provides the primary sense of aliveness.' Prospero seeks to elicit and to coordinate such a rousing response, which I call vital synchrony, from his audience.

Philosophers of distributed cognition have begun to study such synchronous phenomena. Tollefsen and Dale, for example, have proposed that joint action involving two or more people depends on alignment at multiple levels, including the physiological, as well as the cognitive and the intentional. They explain:

it has now become evident that when individuals engage in a joint activity such as conversation or joint problem solving they become aligned at a variety of different levels. Their eye movements may become coordinated, their speech patterns more similar, and even their bodily movements can synchronize to some extent. (Tollefsen and Dale 2012: 386)

Recent breakthroughs in cognitive neuroscience, such as the discovery of mirror neurons thought to subtend some synchronous behaviours in humans and other primates (Rizzolatti and Sinigaglia 2008; Gallese 2001), have helped to explain and draw attention to these phenomena. What is important for our purposes, however, is recognising the early modern description of vital synchrony, spectacularly imagined and enacted by Prospero at the conclusion of *The Tempest*. The metaphor of a prayer that pierces mercy itself in order to release it and distribute it across the

group in a burst of shared vitality may be considered the culminating example of extramissive *mind* mapped on to the sensory modality of hearing.<sup>31</sup>

### Putting it All Together: Conceptual Metaphor and HDC

In this chapter I have tracked a range of literal and metaphoric uses of the word *pierce*, together with the conceptual metaphors that underpin them. The synchronic and diachronic study of CM helps us to understand the ways in which distributed cognition was, in fact, built into the language of the early modern age – as indeed it is in our own, though not necessarily in identical ways.

It would take a more comprehensive, big-data study along the lines of that conducted by Pasanek (2015) in order to develop a fuller picture of the evolution of metaphors of extended mind and distributed cognition in the early modern age; the evidence presented in this chapter is too selective to generate anything like a complete picture of DC as it was understood, imagined and experienced in pre-modern England or elsewhere. I would argue, however, that piercing was a metaphor of high salience in the time period considered in this chapter,<sup>32</sup> and that its salience, as well as its conceptual content of opening or rupturing a container (the heart, the mind, the body, the self), lends support to the conclusions of intellectual historians (e.g. Sutton 1998; Paster et al. 2004; Lochman, this volume) that early modern views of self and other were predicated on notions of the permeability of the human body and mind different from post-Cartesian views of the self and body that were more autonomous and relatively more impervious to outside influence. As the present analysis has shown, the gendering of the body's permeability is also crucial to study, because what we find is not always what we would expect. As we have seen, early modern metaphors of piercing gazes apply in slightly different ways to both men and women, or to things gendered male and female, suggesting that our precursors conceptualised sexual desire, empathy and passion in ways different from our own, based as they were on a belief in agentive vision that gradually fell away by the seventeenth century, along with other notions of the body's permeability.

As I have further argued in this chapter, CM is itself a form of *imaginary* distributed cognition, by which I mean not something that happens in the world (like Clark's bartender distributing glasses to be filled across the bar in front of him (2001), but rather a way of fantasising mechanisms, often gendered, for the

<sup>31</sup> On pre-modern theories of sound and hearing, including extramission, see the exceptional essay collection *The Second Sense* (Burnett et al. 1991).

<sup>32</sup> The Lexicon of Early Modern English (LEME) shows that in lexicons dating from 1450 to 1750, the word/metaphor 'pierce' (spelled variously) occurred with greatest frequency in the second half of the sixteenth century and in the middle of the seventeenth century, while only sporadically before and after. This constitutes further evidence of its salience, though conceivably other words performed the same or similar functions within conceptual metaphors of other time periods. Exploring that possibility remains outside the scope of this chapter, though the completion of the Glasgow Metaphor Map will help facilitate further research.



transfer of emotions, thoughts and sensations between persons, between persons and objects, or within groups. Experiencing a metaphor, as, for example, when we read a poem, watch a play or even glance at the back of a cereal box or frozen dinner, entails an almost instantaneous, pre- or non-theoretical and, above all, *felt* form of understanding – heartfelt, hand-felt, mind-felt, body-felt (choose your metaphor). Metaphors do the thinking for us, so that we don't have to; although effective, 'fresh' metaphors do invite us to think about them and to think differently as a result of doing so. Jarring combinations of source- and target-domains, which in CM are abstract and material respectively, instantly arouse our understanding and feeling by cutting to the chase. They are efficient little meaning packets that infiltrate our minds as we read, often without our even noticing that they have done so.

Metaphors, conceptual and otherwise, represent an extraordinary feat of *cumulative downstream epistemic engineering*, to borrow a phrase from philosopher Kim Sterelny (2003) – and an interesting mixed conceptual metaphor if ever there was one. Wheeler and Clark summarise Sterelny's idea as follows:

Having earlier argued for group selection as a key force in human evolution, Sterelny notes that groups of humans engineer their own habitats, and that these are transmitted to the next generation, who further modify the habitat. Importantly, some of these modifications are to the epistemic environment, and affect the informational structures and opportunities presented to each subsequent generation. Although other animals clearly engage in niche construction, it is only in the human species (Sterelny argues) that we see this potent, cumulative, runaway (self-fuelling) process of epistemic engineering. (Wheeler and Clark 2008: 3565)

Not just language, but metaphor specifically can and must be viewed as a premier example of epistemic engineering. Metaphors, we might say, are meaning packets that float downstream (to extend Sterelny's metaphor) toward future generations. They contain, communicate and thereby distribute past experiences, which can easily become present ones, with remarkable efficiency. Metaphor *is* special, to paraphrase Andy Clark (2004), because of its unique capacity to distribute meanings, feelings and sensations across minds and cultures, and across time. Metaphors can also be repurposed by poet-engineers of the present time for a superlative cognitive fit that is snuggler, or suppler or more comfortable – or perhaps more painful to those who entertain them, reminding us of what it is like to think-feel with words.

## ‘Le Sigh’: Enactive and Psychoanalytic Insights into Medieval and Renaissance Paralanguage

*L. O. Aranye Fradenburg Joy*

If this putative sadness also gives rise to a lament, if nature laments . . . through sensuous sighing and even the rustling of plants, it is perhaps . . . [not] because it is mute . . . it is nature’s sadness or mourning that renders it mute and aphasic, that leaves it without words.

Jacques Derrida, *The Animal that Therefore I Am*

‘Enactivism’, owing to the inspiration of thinkers like Varela, Thompson and Colombetti, is now one of our most important available frameworks for considering the creative activity of organisms and their environments as they mutually constitute one another. Humanists and social scientists are familiar with this kind of thinking in the form of ‘social constructivism’, wherein subjects construct themselves in part by constructing the social contexts that give their selfhoods meaning. Enactivism insists on both the materiality of these processes and their centrality to all organic experience. One of the central tenets of enactivist philosophy is in fact ‘the deep continuity between life and mind’ (Thompson 2007: 128). As Giovanna Colombetti puts it, mind is ‘enacted or brought forth by the living organism in virtue of its specific organization and its interaction with the world’ (Colombetti 2014: xiv). Mind is ‘thickly’ embodied, ‘distributed’ beyond the brain and central nervous system to the viscera, the endocrine and immune systems and elsewhere, (xvi). Consequently mind ‘is intrinsically . . . affective’, where affectivity is a ‘*lack of indifference*’, ‘a *sensibility* or *interest for . . . existence*’ (1). Sentience is possible only because matter is capable of affecting and being affected. Even the ‘simplest living things’, as Antonio Damasio’s research has shown, have the ‘capacity to be personally affected, to be “touched” in a meaningful way’; their ‘relationship with themselves and the world in which they are situated . . . entails purposefulness and concern for their existence’, to which we may add, concern for the existence of all things on which the organism’s well-being depends.<sup>1</sup> Concern generates the organism’s co-creative interplay with its environment, including its ‘expressivity’.<sup>2</sup>

<sup>1</sup> Damasio 2003: 31–4 cited by Colombetti 2014: 22 ff.

<sup>2</sup> The enactivist notion of affectivity invites comparison with the work of Gilles Deleuze and Félix

When a cell's environment 'perturbs' or stimulates it, the resulting change in its state becomes perturbing in turn (Varela et al. 1991: 151 ff.). Vulnerability, in the form of openness to affects, percepts and sensations, is *constitutive* of living process, not something that afflicts it. Vulnerability may cry out for the ethical response, but more fundamentally it is what enables responsiveness in the first place. Ethics is neither latecomer nor mystery, but rather an elaboration of living matter's fundamental capacity to affect and be affected, brought forth in our creative enactments of our surrounds.

For Damasio, 'self-concerned life regulation always coexists with the machinery of automated life regulation' (Damasio 2012: 60); many autonomic and non-autonomic activities are materially linked and mutually supportive. These linkages are nowhere more evident than in the activities of ventilation and respiration, sourced chiefly by the most 'primitive' part of the brain, the brainstem, more specifically the *pons* and the medulla oblongata (what is known as the pre-Botzinger complex), but involving also the spinal cord, intercostal muscles, diaphragm and many different receptors distributed throughout the body. It appears, according to a study by researchers at UCLA and Stanford, that the sigh reflex in particular is controlled by 'two tiny clusters of neurons in the brain stem', stimulated by a certain family of neuropeptides; they cause us to sigh every five minutes, which maintains lung function.<sup>3</sup> Not only does breathing exemplify the *intrication* of newer and very old parts of the human brain – they are not as far distant as we might suppose – it also exemplifies the brain's intrication with other bodily systems. The notion of embodied cognition entails the notion also of a 'distribution' of cognition, beyond the brain to more apparently uncanny participants like the afferent neurons of the aortic and carotic bodies that sense oxygen levels in our blood and play a role in determining ventilatory rates. Breathing can further be affected by emotional states, through input from the limbic system of the brain; breathing is also, unlike many other basic functions supported by the brainstem, amenable to conscious voluntary control by the cerebral cortex. Speech, in fact, *requires* voluntary control of breathing. Breathing crisscrosses the still-mysterious border territory between psyche and soma in quite remarkable ways.

A panic attack, for example, is neither a 'phenomenon of a psychological' nature, nor one of a 'neurobiological or even neurochemical nature' (Masi 2004: 311): it is both. As one psychosomatic researcher has put it, breathing is 'under the command of an urgent need', but it is also 'the first postnatal communication that we establish with our environment'.<sup>4</sup> Hence it is always an occasion and model for meaning, and, as Sándor Ferenczi noted long ago, for modulating experiences

Guattari on 'subjectless subjectivity' (see Bains 2005), as does the concept of autopoiesis with their work on 'becoming' (Deleuze and Guattari 1987: 10 ff.).

<sup>3</sup> The neuroscientists included Jack Feldman (UCLA Brain Research Institute) and Mark Krasnow (Stanford University School of Medicine), <<http://newsroom.ucla.edu/releases/ucla-and-stanford-researchers-pinpoint-origin-of-sighing-reflex-in-the-brain>> (last accessed 11 December 2018).

<sup>4</sup> Wyss 1974.

of pleasure and unpleasure: 'The greatest significance is ascribed to oxygen in the pleasure-unpleasure workings of the psyche' (Freud 1966: 117). Along with feeding and elimination, but even before them (if that matters), respiration is part of the history of how and what bodies take in and push out, of what is liked and absorbed as Self, or rejected as Not-or-No-Longer-Self. We can stylise the rhythms of our 'exchanges' of gases, yet we can't choose to stop breathing altogether; thus, breathing links expressivity to matters of life and death and the concern they inspire in us. Breathing is the first taking in, but also invasion by, something other – something that is not exactly chosen; and yet it is not as automatic as the heartbeat, though that too is open to conscious influence and training.

That interesting life form the 'organism-*plus*-environment' (Bateson 2002: 422) is, if not always human, always a humanist, adept at real-time expressivity, and responsiveness thereto (Fradenburg 2013: 81). Respiration is one of its arts: Forsyth (1921: 124) describes infants playing with respiration, breathing quickly then slowly, shallowly then deeply, 'their attention . . . concentrated on the game'. A patient of his remembered blowing into his cupped hands and then 'handing' his breath to another child whose lungs were labouring after a race. We can hold our breath until we turn blue; sigh dramatically when disappointed; develop asthma as a manifestation of stress; turn breathing into spiritual practice. Theodore Reik insisted on the epigenetic as well as genetic nature of such expressions: '[e]xpressions come to bear the mark of their reception by others . . . As the child matures, her expressions develop as composites of the urges they convey and the reception of these urges by the child's social world', and by her environment more generally.<sup>5</sup>

Breathing expresses and *enacts* embodied states (of mind) and seeks transformation as a consequence thereof, discharge (in some vocabularies), symptom relief and greater responsiveness from the environment, including relational objects. Levinas writes that 'wherever a moan, a cry, a groan, or a sigh happen there is the original call for aid, for curative help . . . from the other'.<sup>6</sup> As A. J. Fridlund puts it, with less feeling, 'all expressive displays, even those that take place in private, have social motives'.<sup>7</sup> As is well known, we all breathe the same air; we participate, for that matter, in the Earth's own respirational rhythms, which rise and fall by dusk and dawn, oxygen-rich in spring and relatively oxygen-poor in the autumn. As an instance of distributed meaning-making, breathing reaches through the body to its environment or *Umwelt*, to participate in acts of mutual transformation. In these ways, too, breathing has its histories.

Breathing, then, is itself a form of distributed cognition, modulated by experience, co-constitutive with its environment, and arguably a historical phenomenon. But how can we take historical account of such an ancient and 'autonomic' function? Discontinuist historicism, as opposed to history, has had some difficulty welcoming the insights of contemporary philosophies and sciences of mind,

<sup>5</sup> Reik cited in Arnold 2006: 738.

<sup>6</sup> Atterton 2007: 565, citing Levinas.

<sup>7</sup> Cowie and Cornelius 2003: 25, citing Fridlund, ll. 1680–5.

despite its own scientific tendencies, due to its belief in the radical alterity of past minds.<sup>8</sup> Cultures, including cultures of learning, may differ in the ways they study the mind, but this does not mean that past and present minds themselves have nothing in common. It is worth asking what assumptions discontinuist historicism is in fact making about minds when it asserts that historical and cultural differences are radically and irremediably estranging. Better, in my view, to ask what it means about the mind when we assert that it is capable of historical experience in the first place. Moreover, though the contemporary mind sciences are pursued quite differently from the ‘natural history’ and philosophico-theological work of pre-modernity, I believe that enactivist thinking on vulnerability and care for life would have been at least partly intelligible to the pre-moderns.<sup>9</sup> For one thing, medieval commentators stressed the extreme vulnerability of human minds to social, supernatural and natural environmental forces; cognitive embeddedness was axiomatic, as, in the form of the ‘humours’, was cognitive embodiment.<sup>10</sup> Heather Webb notes that the ‘term “spiritual” had such an extension that many entities or processes called by that name would today be described as “physical”’ and that ‘the physiological, the psychological, and the spiritual [were not seen] as three separate realms, but as three continuous aspects of a single life process’ (Webb 2008: 265–6). Historians have often ascribed to the Middle Ages a devaluation of life under the sphere of the moon in postlapsarian Nature, which is beset, as Innocent III put it, by all the miseries of the human condition. But ancient and medieval thinkers are struck by, and frequently comment on, the universality of the creature’s concern for its life and well-being. John of Trevisa’s translation of Bartholomaeus Anglicus’s *De proprietatibus rerum* explains in time-honoured fashion that all creatures have ‘wits’ that give feeling to and move their bodies ‘in breeding and rearing of their children and in making of bowers and dens, in seeking and getting food and nourishment, in medicine and healing of wounds, in flight and avoiding harm, in anticipating changes of time and weather, in knowing the love of their mates’ (Trevisa 1975: 1097–8, 1129). True, these kinds of wits earned less respect from pre-modern thinkers than did Reason. Nonetheless, pre-modern aliveness is interested, concerned and purposive, irrespective of whether the animal is thought to be here to serve and edify human beings, to exist for its own sake, or both. Colombetti calls this interestedness ‘primordial affectivity’; it is ‘that for which existence is an issue’, like Heideggerian *Dasein*, which ‘care[s]

<sup>8</sup> By ‘discontinuist historicism’, I mean historicism that assumes history is interesting for its discontinuities, breaks (e.g. periodicity) and radical alterities between pasts and presents. I prefer to see history as more richly textured, a result also of the simultaneous insistences, conservations, transmissions and traditions through which discontinuities strike out. For critical remarks on discontinuist historicism, and on scientism in cognitive literary studies, see Fradenburg 2009, 2012a, 2012b.

<sup>9</sup> Cf. Anderson 2015b: vii on parallels between Renaissance depictions of mind as embodied, embedded, enacted and extended, and ‘recent philosophical and scientific research’.

<sup>10</sup> Recent work on the ‘passions’ and the ‘humours’ can also be found in Arikha 2007 and Paster 2004.

... for its activities and projects', for the 'where' and the 'how' it finds itself (Colombetti 2014: 10–11).

The sigh is one of the oldest and most unmistakable signs of care in Western culture, and it is also a spectacular instance of the link breathing creates between concern for life, on the one hand, and artful expression on the other. In *Macbeth*, notorious for its violations of care-full relationality, the 'superfluous' Doctor says of the sleepwalking Lady Macbeth, 'What a sigh is there! The heart is sorely charged' (5.1.2176). Lady Macbeth's illness is the kind only she herself can cure, he opines. Lady Macbeth in fact cares for herself as best she can, discharging her overcharged heart in sighs, washing the traces of Duncan's blood off her hands, trying to rid herself of the kinds of feelings that cannot 'pass through' sentient things without reorganising or disorganising them thoroughly. The sigh in *Macbeth* labours to expel the excessiveness of the Real of Duncan's blood, but fails.<sup>11</sup> Says Claudius of *Hamlet*, '[t]here's matter in these sighs. These profound heaves / You must translate; 'tis fit we understand them' (4.1.2626–7). For Shakespeare, the sigh is 'material' and meaningful; it requires interpretation. It emerges from the body as a consequence of the organism's 'cares', as a form of display that may betray.

Pre-modern psychologies anticipated, if in the rough, many of the principles underlying contemporary inquiry into distributed cognition, affective embodiment and psychosomatic interactivity. Qualities (heat, cold, dryness, moisture), elements (earth, air, water, fire) and humours (black bile, yellow bile, blood, phlegm) entered into complex combinations. The 'temperaments' composed thereof were at once physiological and psychological (as well as 'spiritual'), and highly sensitive to changes in inner and outer environments. Microcosms (and their temperaments) reflected and interacted with the macrocosm; as noted, creaturely bodies were highly vulnerable to what might very loosely be called distant attractors, such as the sympathies and antipathies that (un)bound material particles, and the 'influences' that rained down from the stars, shaping our developmental potentials. Melancholy, famously, was one such temperament, dominated by dryness and black bile; the literature on love-melancholy or love-sickness (*amor hereos*) is a vast treasure trove of information and ideas about how bodies make and are made by meanings. Sappho's description of the 'burning . . . and paleness . . . that the vision of the beloved produces in the lover' became a '*locus classicus* of embodied desire' for subsequent medical literature as well as love poetry: 'a subtle / flame suddenly runs under my skin, / I can't see a thing and my ears / ring . . . I'm paler than grass / And I seem to myself to be about to die'.<sup>12</sup>

Pre-modern literature on love-sickness and melancholy is full of concerns about fixation and mobility, circulation and blockage. The sigh is an attempt to assuage disturbances in *imaginativa* and *estimativa*, the interlinked imaginative and estimative faculties, when they are taken over by the 'obsessive presence' of the image of a

<sup>11</sup> 'The Real' is a Lacanian term. It refers to everything that exceeds or escapes signification. For discussion, see Laplanche and Pontalis (1973), s.v. 'Real'.

<sup>12</sup> Rynearson 2009: 345, citing Sappho 31.9–16 V.

loved object. According to Arnaldus Villanovus, one of the most important of all medical authorities in the Middle Ages, when ‘a pleasing form reaches the internal faculties of the soul’, ‘the sudden pleasure causes a sudden multiplication of the vital spirits, which overheat and spread throughout the body’.<sup>13</sup> These spirits are, once again, not ‘abstract or intangible concept[s]’; after the arrival in Europe of Aristotelian natural history in the ninth and tenth centuries they are conceived as ‘substantial material entit[ies] operating through traceable physiological systems centered in the heart’ (Webb 2008: 266). The overheating of spirits affects the faculty of estimation, and if the stimulus is powerful enough, it results in a fixation caused by excessive dryness, an image (*phantasmata*) of the beloved unresponsive to reality-testing about its permanency or availability, ‘firmly imprinted in the organ of memory, polarizing the attention of thought’.<sup>14</sup> The sigh is an attempt to restore plasticity, to free the circulation of vital and animal spirits from blockage caused by the overheating of *estimativa*, *imaginativa* and the relevant ‘encephalic area’ (Ciavolella 1979: 231). Sighing, again, is vital activity; the bodies of lovers sigh all the time to further the action of the chest muscles, to ensure the best possible inspiration and expiration and prevent suffocation, thus cooling the body and purifying it of the wastes generated by the burning of the blood.

Much of this material on difficult respiration found its way into discussions of ‘green-sickness’, a term used in the English Renaissance for the love-melancholy of young girls (King 1996: 374, n. 19). Greensickness was a popular as well as a learned matter of concern: a seventeenth-century ballad, ‘A remedy for the green-sickness’, describes how

A handsome buxom lass  
lay panting on her bed.  
She look’ t as green as grass  
and mournfully she said  
Unless I have some lusty lad to ease me of my pain  
I cannot live  
I sigh and grieve  
My life I now disdain.<sup>15</sup>

According to the treatise *Aristotle’s Masterpiece*, the ‘combination of narrow channels and a surplus of blood’ characteristic of the bodies of pubescent girls could ‘affect the mind’, by inciting their imaginations to ‘Venerly’ and threatening their health with ‘Short Breathings’ and ‘Tremblings of the Heart’.<sup>16</sup>

On the threshold of language and the Real, the expressive power of the sigh reorganises the state of the organism+environment. When we sigh, we affect the

<sup>13</sup> Ciavolella 1979: 230–1, citing Arnaldus Villanovus.

<sup>14</sup> Arnaldus Villanovus, fol. 249v, cited in Ciavolella 1979: 231.

<sup>15</sup> King 1996: 381 and n. 55, citing British Library C40m10 (161).

<sup>16</sup> King 1996: 385 and n. 73, citing *Aristotle’s Masterpiece*, 2–3.

atmosphere, it affects us, and through the actions of opening and breathing, we transform the affect that initiated the sigh in the first place, as well as the *Umwelt* in which it arose. In *Much Ado About Nothing* it is the surround of midnight that might 'assist our moan; / Help us to sigh and groan, / Heavily, heavily' just as graves will 'yawn and yield' their dead '[t]ill death be uttered, / Heavily, heavily' (5.3.16–21). Openings enable the utterance, the *oultrance*, the carrying to excess that enables death, the unspeakable, to be spoken. The link between artful breathing and the cares of the living and the dead is a strong one. Breathing itself can be dangerous. Sometimes it means change, for example when the sigh reprises the moment in which the baby must take in for the first time the alien element of air. 'Emergence' has its passional aspects, especially emergence into a new element.

Lacan remarks that the 'intrusion within the organism of the respiratory neo-formation [of lungs]', of the breathing apparatus, is 'unbelievable', and just as strange as its later technological prostheses, the iron lung, the spacesuit, even the boat insofar as it is also a 'reserve of air' (Lacan 1962–3: ch. 25, 3). In *The Tempest*, Prospero describes being set adrift in '[a] rotten carcass of a boat', '[t]o cry to the sea that roar'd to us, to sigh / To the winds whose pity, sighing back again, / Did us but loving wrong' (2.1.146, 2.1.149–51). This is 'affect storm', breath-sound-word-storm, Deleuze and Guattari's 'lived analogy', which re-enacts the transformative operations giving rise to it (Massumi 2002: xxxii). Enactivism would not encourage us to cry 'pathetic fallacy' in response. Rather the storm is the kind of perturbing perturbation that 'touches' the living body, remakes its affectivity, and generates 'display'. As Patocka puts it, commenting on Heidegger's conception of mood, 'the world makes a certain impression on us', a 'corporeal', 'physiognomic' impression: 'the sky is leaden, the air is heavy'.<sup>17</sup> Lacan links the first breath, the first intake of the 'alien element', to the notion of *agalma*, of 'impress', which marks the 'ceding' of the organism to the demands of its surround.<sup>18</sup> Discussing the costliness – in the form of 'more severe energetic demands . . . and novel forms of risk' – of animality's 'special relation with the world', a relation 'charged with internal significance and hence with the development of an emotional dimension', Di Paolo references the water boatman's remarkable ability to 'breathe underwater by trapping air bubbles (plastrons) using tiny hairs in the abdomen', thus providing 'access to longer periods underwater', an enhancement 'nevertheless potentially riskier than normal breathing' (Di Paolo 2009: 17). If we accept Colombetti's argument for primordial affectivity or concern on the part of even the simplest organisms, we are in a better position to consider anxiety as potentiated in living process and its risky processes of, in Deleuzo-Guattarian terms, 'becoming' and 'expressing'.

The expenditure of energy, the application of force, and the interactivity of impact are all part of the semantic range of 'expression': to 'press' is to make

<sup>17</sup> Colombetti 2014: 14, citing Patocka 1998.

<sup>18</sup> For a comparative discussion of Lacan's work on the alienation of the subject by language and EM/enactivist conceptions of mind, see Anderson 2015b, section 2.5, 'The Subject and Language in Lacan'.



‘contact with something by exerting continuous physical force’, ‘to apply pressure’; ‘to flatten, shape or smooth’, whence cometh juice, or oil, or song (*OED*, s.v. ‘expression’). ‘Expression’ links vividness (making-present, becoming) to truthfulness, to ‘abreaction’ – Freud’s term for the outbursts that sometimes punctuate analytic sessions – and to Grotstein’s ‘truth-drive’ (Grotstein 2004).<sup>19</sup> It is ‘manifestation’, the *making-perceptible* or ‘display of the existence, presence, qualities, or nature of some person or thing’, e.g. of ‘thought’ (*OED*, 5b). The action of *making-perceptible* is, indeed, an *action*, as is perception itself (vision, for example, entailing constant and usually unnoticeable eye-movements). Enactivism offers a revision of the phenomenology of representation. Perception changes the state of the organism by (among other things) engaging its musculoskeletal system, its kinaesthetic trajectory and its *concern*, its quest for salience. In this enactivist perspective, sensations and percepts are never not salient; they do not pre-exist ‘appraisal’. We do not first have the perception and then judge its significance; we only perceive what the non-conscious mind has already judged to be significant. Following, with some differences, the tracks laid down by J. J. Gibson in his ‘Theory of affordances’ (1977), Colombetti explains that

sensory information . . . impinges on an active organism . . . already furnished with . . . expectations of how the world changes in relation to movement; perceiving is, then, better characterized as the exercise of this practical knowledge, rather than the representation of sensory information in a dedicated part of the brain. (Colombetti 2014: 64)

Display, sensation- and percept-*making*, is ecological creativity before it is captured by psychical representation. ‘The force of expression . . . strikes the body . . . [and] passes transformatively through the flesh’ such that ‘its immediate effect is a differing’ (Massumi 2002: xvii). Language is only one of its agencies: ‘[e]xpression is abroad in the world’, ‘always on the move, . . . overflowing individual experience, . . . self-transporting’ (Massumi 2002: xxi). Its emergence into words and things ‘is always an *event* before it is a designation’ or ‘signification’ (Massumi 2002: xxiii).

According to the anthropologist Steven Feld (2012), the sounds of the natural world are strongly linked to human cultural expression, forming interdependent auditory ecologies. Not only are birdsong and bird calls to be found in human music; elements of human noise are in the songs and calls of neighbouring birds. Here proximity is decisive: the Australian lyrebird now incorporates the sound of the chainsaw into the song of his living experience of the territory (Rothenberg 2006). Just so does John Donne incorporate the objects of a relatively disenchanted world – twin compasses, fleas, flies, palsy – into his own songs and sonnets. The song is expressive announcement, the ‘here I am’ so difficult to explain for animal

<sup>19</sup> Freud’s early emphasis on the transformative significance of abreaction has more to offer psychoanalysts of the embodied and distributed mind than we generally realise (Breuer and Freud [1893] 1955: 7–11).

behaviourists because of its potential 'costliness'. But, writes Massumi, expression is always 'too big to fit the contours of an individual . . . body'; its movement across experiences 'envelops' its 'field conditions of emergence' and 'the collectivity of a people [, of the creatures,] to come' (Massumi 2002: xxix).

Michael Winkelman, in his book *A Cognitive Approach to John Donne's Songs and Sonnets*, links certain expressive acts, such as conspicuous consumption, to the notion of 'fitness', as signifying access to 'excess resources' (2013: 153). Donne's poetic inventions are 'costly signals' that evince 'an intellect correlating to high mating fitness' (2013: 156). These claims are consonant with the adaptationist view that 'the task of evolution consists in finding heritable strategies, [that is] sets of interrelated genes . . . capable of contributing to . . . reproduction', as Varela and colleagues put it (1991: 188). But this way of looking at things ignores the fact that, whatever else evolution may 'select', it also selects *for* vulnerability, in the form of creatures' sensitivity to their environments. Furthermore, many evolutionary biologists contend that each and every gene, being always already 'intertwined with a multitude of other genes' (Varela et al. 1991: 186–7), has 'multiple effects', any one of which 'need not increase fitness in the same manner or even the same direction' as another, a phenomenon known as 'pleiotropy' (Varela et al. 1991: 189). In fact, the Russian scientist Timoféeff-Ressovsky used the term genetic 'expression' in 1927 to indicate that 'phenotypic manifestation [of] the genotype' is affected by 'external conditions' and the proximity of other genes. As Varela and colleagues put it, 'the genome is not a linear array of independent genes (manifesting as traits) but a highly interwoven [and ecologically embedded] network of multiple reciprocal effects' (Varela et al. 1991: 188). Genes are generative well beyond the passing-on of 'traits' and the pursuit of 'optimal fitness'. Even the chemical processes at work in the formation of genes are now acknowledged to be highly sensitive to environmental considerations. Evolutionary process is multiply determined, following many different 'viable trajectories', shamelessly 'admit[ting] any structure that has sufficient integrity to persist' (Varela et al. 1991: 196). Not only do we need to imagine diverse kinds of fitness, we also need to imagine life's tolerance and even embracing of many varieties of *un*-fitness or mis-fitness, surely the only way to guarantee development of vulnerability and its paradoxically vitalising power. If, as Sewall Wright believed, 'individual (co)adaptability' is not only of enormous significance 'as a factor of evolution' but also, 'perhaps, the chief object of selection', it makes sense that living processes might prefer open territory and diversity, neurodiversity included, to gated communities (Wright 1930: 148). The richer and more responsive the brew, the greater the dynamism.

I would argue that Shakespeare's sonnets give shameless welcome to the differently fit: to the oversensitive, the over-sharing, the abject. Even worse: many of the sonnets appear to address a 'dominant' young man who doesn't want to breed at all; others are addressed to a woman who offers absolutely nothing in the way of futurity. There are mood shifts, random objects, sensations both shopworn and bizarre, manifold openings and closings, strivings, anxiety, hope, panic and despair, unreadiness, weariness, aging, hatred – in short, 'primordial affectivity',

expressed by becomings and by ‘the people to come’.<sup>20</sup> ‘[T]he intrinsically purposive nature of the organism’ that ‘enacts or brings forth what matters to its continuation’ (Colombetti 2014: 5) is certainly capable of generating the imaginary of rivalrous display, but is by no means limited to it. Rather, we should imagine striving as related more broadly to the care-full-ness of life, to the vulnerability of living being. Grieving Titus Andronicus imagines the outcome of ‘kneeling together’ with Lavinia in this way: ‘heaven shall hear our prayers; / Or with our sighs we’ll breathe the welkin dim, / And stain the sun with fog, as sometime clouds / When they do hug him in their melting bosoms’ (3.1.213–16). Perhaps, if words fail us, we can breathe and sigh, and thus dim and stain our celestial surrounds, in as tactile a fashion as when clouds ‘hug’ the sky. We become the phenomenological ‘we’, the ‘we’ that is more than 1+1 (Zahavi 2014a), even Bateson’s organism+environment (air is an affordance, a means of cognitive extension). And we become pathetic; we imagine things, yearn for what cannot be. Shakespeare’s sonnets uniquely prize folly, exposure, ridiculousness, ‘love that is infantile, incestuous, dependent’, hopeless, all the *epiphenomena* of neo-Darwinism; love for inappropriate objects, lost causes; ‘the kind of love that makes a fool, a [misfit], a pervert, a stalker out of you’ (Fradenburg 2011: 319).

Expression is pre-eminently responsive engagement with, and sensitivity to, environment; ideals of representational accuracy have a place in its consideration and practice, not least because deception is so important in the surviving and thriving of mortal creatures living in precarious worlds; but those who lament the plasticity of language by comparison with the non-negotiable precision of mathematics completely miss what language enables – which is all the more surprising since awareness of the embeddedness of expression and impression in living process is, as noted previously, many centuries old.<sup>21</sup> This embeddedness was, moreover, already amply attested in Darwin’s 1872 *The Expression of the Emotions in Man and Animals* (2009–10), which saw emotional expression as heritable capacity, as involuntary display, *and* as social practice. In the early Freud, expression is also embodied, affective activity, not simulacrum. Abreaction *pushes out* affect: I ‘spit it out’, ‘cry my head off’, ‘get “it” off my chest’; ‘[a]n insult which is returned, if only in words, is remembered differently from one . . . endured in silence,’ Freud notes, speaking of ‘the revenge drive’ (Freud 2001: 36). In contemporary affect theory, expression is our principle *means* of becoming; affect-regulation is *activity*, often accompanied by changes in vital signs that in turn feed back into the brain and influence further processing.

The infant researchers Beebe and Lachman also argue that ‘particular facial or vocal pattern[s]’ accompany the particular ‘states of arousal’ catalysed by connections between conscious and unconscious processing, for example the ‘increased

<sup>20</sup> Massumi 2002: xxvii. As Deleuze and Guattari put it, the subject is always ‘becoming’, ‘under formation’, still ‘yet to come’ (Massumi 2002: xxviii).

<sup>21</sup> See Andy Clark’s chapter on ‘Material symbols’ in *Supersizing the Mind: Embodiment, Action, and Cognitive Extension* (2008: 44–60) for a discussion of how language enables mind.

sensory attention and motor tension' Freud attributes to preparedness (Beebe and Lachman 1994: 129). Contemporary work in psychosomatics asserts that the capacity for 'symbolisation' is essential to thriving and surviving; disturbances in symbolisation are not simply *signs* of stress and distress in mind/body but actually play a central role in the *causation* thereof. As Graeme Taylor puts it, speaking of research on alexithymia (difficulty in foregrounding and describing one's emotions), 'the pathogenic impact of emotion on the body is a *consequence* of a failure to adequately symbolize, and thereby contain, distressing emotional states' (Taylor 2010: 185). Citing the example of eczema (wherein emotional stress activates the hypothalamic-pituitary-adrenal axis, resulting ultimately in neuropeptide dysregulation), Taylor proposes a 'psychobiological dysregulation model of disease in which perturbations in one or more components of the feedback loops between the various bodily systems (including the emotion system) may lead to changes over time in the rhythmic functioning of one or more of the systems, thereby creating conditions conducive to disease activity' (Taylor 2010: 190). 'Heightened affect' changes the embodied mind, and the embedded, extended mind too, by means of (usually non-conscious) warnings, repulsiveness, solicitation of non-autonomous care responses, by generating and communicating feelings of helplessness, indifference or inattention, by soliciting autonomous care responses, by filling the very atmosphere with the ever-changing biochemical outputs of affective experience. Expression acts in and through the relational field of the Other, and beyond, even (as in epidemiological phenomena) beyond the *Umwelt*. I act *out*. I *unfurl* my most attractive, most terrifying, feathers, and risk looking ridiculous. Infantile mimetic expression combines affect and motor activity as a means of maintaining contact – touching, coupling, co-creating – with loved objects and ideas, where the goal is not primarily to copy but rather to invite, sustain and develop relationships. That social goals predominate in the practice of mimicry is becoming axiomatic in contemporary mind sciences.

Were we to speak of 'love' alongside 'social goals', we might be less surprised. As Shakespeare's Sonnet 47 puts it:

When that mine eye is famish'd for a look,  
 Or heart in love with sighs himself doth smother,  
 With my love's picture then my eye doth feast,  
 And to the painted banquet bids my heart  
 . . .  
 For thou not farther than my thoughts canst move,  
 And I am still with them, and they with thee;  
 Or, if they sleep, thy picture in my sight  
 Awakes my heart, to heart's and eye's delight. (ll. 3–6, 11–14)

Reading this poem a few decades ago we might have focused on the incommensurability of painted banquets and the lived experience of the body. I don't want altogether to lose the force of those insights. As noted, organismic couplings are

passional; what emerges from them is transformed, different. But these days, at least if we have warmed to Bateson's and Clark's arguments for the notion of 'extended mind', we are more likely to agree with Milton in *Areopagitica* about the strange, undead lives books give their authors, and the opportunities for coupling those books offer.<sup>22</sup> Furthermore, Shakespeare's rendering of the sigh in this sonnet is a clear and striking example of distributed cognition. The sigh is an action reaching from and through ancient respiratory processes to the most deliberate forms of self-care and beyond, to a respirational form of *jouissance* in which a heart can love 'too much' the risings and fallings, openings and closings of the sigh.

And so with the image. Elaine Scarry, following many rhetoricians and philosophers before her, explains in *Dreaming by the Book* that the image of a lost or absent friend is indeed not that friend, is 'enfeebled' by comparison with that friend's presence; but it is also *not nothing*. It provokes affect, stimulates memory (facial recognition and associations thereto) and sense-making; it *makes-perceptible*. The image probably activates occipitotemporal, posterior parietal, and premotor cortical areas of the brain, possibly also precuneus, fusiform gyrus, and posterior temporal areas (Di Dio et al. 2015: ll. 92–7). Our embodied minds *can* 'feast' on a picture; the picture can expand the heart, beyond smothering; the eye can host the heart, awaken it, share its thoughts of love. We can feel better and have a better day. Maybe we will plant something and add oxygen to the atmosphere. Maybe we will be more loving to our students.

Psychologists Cowie and Cornelius agree with Beebe and Lachman that interactions between speech and emotion are situated in the domains of 'feeling, appraisal, action tendency, and social consequences', as well as temporality, where multiple timescales 'might be at work . . . with some signs building up . . . and others erupting briefly but tellingly' (Cowie and Cornelius 2003: 20). One important action of the sigh in the analytic session is *delay*, often seen as a defence mechanism, especially in the heyday of ego psychology. In a paper on 'Autonomic resistances in word association tests', Baker supposed a 'link between temporal delays in such tests', delays which sometimes occur when the subjects are given words like 'homosexual', and respiratory and other acts emerging during those delays, like breathing heavily and sighing (Baker 1951: 276). I do not disagree with Baker's conclusion that sighs are signs of delay because they occur during pauses, though the logic seems circular. But we must keep in mind that the sigh, like so many other signs, has multiple, context-dependent meanings. Nor, in my opinion, are delay and deferral resistant in and of themselves; other associations, like patience, repose, renewal, idyll, pastime, liminality, timeout, reverie and daydream, also come to mind.

The sigh can express many different emotional states, often co-occurring: Heim et al. suggest that 'the extent of irregularity in breathing during speech' – including sighing and breath-holding – 'may [sometimes] reflect the intrusion of conflicting

<sup>22</sup> I speak here of Bateson's concept of mind as extended by cultural activity. See Bateson 2002: xi; Clark 2008.

impulses into a . . . habitual function' (Heim et al. 1968: 271). In their study of speech and emotion in psychotherapeutic sessions, the sigh was associated with emotion 'clusters' like distress, giving up and arousal (Heim et al. 1968: 263). My own survey of 204 analytic interpretations of sighing has revealed scattered references to sighs of disgust, recognition, boredom, anxiety, anguish, fright, reproach, freedom, love and pleasure. There were seven associations of the sigh with sadness; five with resignation; four each with despair, annoyance and satisfaction. Interestingly, however, sixty-six references associated the sigh with 'relief', often accompanied by 'relaxation'.<sup>23</sup> These clinical observations are consistent with studies by Vlemincx et al. (2009, 2015) in the journals *Psychophysiology* and *Biological Psychology* that correlated higher rates of sighing with states of relief from stress, and proposed that sighing acts as a resetter in the regulation of both breathing and emotions (see also Ramirez 2014). In the field of psychoanalysis, Gary Davis has linked the sigh to depressive 'filling' of emptiness, and thus perhaps to avoidance of mourning (Davis 1976: 413–14). But as Freud noted in 'Mourning and melancholia', the very means we adopt to hold on to what we have lost are also the means that enable us to mourn, and eventually to love anew (Freud 1957: 243–4). The sigh can buy time, but it can also give us the time we need to get somewhere new. Either way, the sigh belongs to lovers, because we are always waiting to get what we want – which, of course, we never quite do.

One of Christopher Bollas's analysands 'narrated life's events . . . [repeatedly heaving and sighing] like someone who feels he must describe a dreadful event that he has seen as soon as possible'; these performances 'amounted to a kind of emotive tidal activity, as he would sigh in waves of released but never resolved despair' (Bollas 1984: 205–6). When Bollas spoke, however, the 'sighing would cease, the analysand's body would be at rest, and he might report a dream or talk about material from another session, all stated in a calm and serene manner' (ibid.). Bollas suggests that by means of this latter 'dreamy' mood the analysand held on to 'his childhood need to be mirrored in the radiant light of an admirer, something which he had lost through parental discord' (ibid.). The tone of Bollas's descriptions of this particular analysand betrays, to my ears at least, a smidgen of disapproval at the latter's resistance; the analysand, he seems to think, is a little histrionic. Of course, the sighs, cries and whispers *are* asking for attention. Why not? Anyone who has to go to that much trouble to get attention needs *something* they're not getting. And when Bollas speaks, he gives *something*. What? Is it something Bollas says, or is it perhaps just the sound of his voice, that causes the shift from tidal respirations to the ensuing 'mnemonic environment'? Is the shift a response, at least in part, to the fact that whatever Bollas may or may not have said, his voice *comes from the inside of his body*, laden with its odours and chemicals and gases? Further, does the analysand's shift from one state to the next mark intimacy and its acceptance, or does it indicate impingement, disassociation, vertical split, melancholic disavowal? Might

<sup>23</sup> Jaak Panksepp notes that animals given "'safety signals" . . . sigh consistently, namely, exhibit double-respirations' (2016: 1627, citing Soltysik and Jelen 2005).

it also mark the rhythmic nature of living process? A time to embrace, and a time to refrain from embracing?

The waves of sighs characteristic of the analysand's state prior to Bollas's vocalisations are repeated in the overall sequence: waves crash and pound; then comes that peaceful moment when the sea lingers on the sand, luminous, smoothing, depositing its offerings, flotsam anyone can claim, in many cases remnants of destruction, disaster, death, all resting in peace, collectable(s) in tranquillity. I am reminded of Winnicott's (1967: 368) famous citation of Rabindranath Tagore: 'On the seashore of endless worlds children meet'. What Tagore (1910) goes on to say, and what Winnicott omits, is this: 'Tempest roams in the pathless sky, ships are wrecked in the trackless water, death is abroad and children play. On the seashore of endless worlds is the great meeting of children.' Lines of defence are always drawn in the sand because they mark what lies immediately alongside whatever we wish to conserve. Sighing is a transitional phenomenon.

Putting the sigh into discourse by asking about it is an important analytic intervention, because it bridges paralinguage and language, infusing the latter with the unspoken intimacies of the former, marking the uncanny non-conscious channels of communication between analyst and analysand. As the psychoanalyst Sergio Bordin puts it, to

communicate to the patient that '... the sigh you made reminded me of that time you had thought that I ...' or '... your silence tells me that what I was afraid of ...' serves to identify signs of an affective state present when the theory of mind required for 'classical interpretations' is not; in this way 'an experience becomes just sufficiently apparent to make it possible to share it, and once it has been shared, to communicate it'. (Bordin 1989: 604–6)

There is a little more to it than that, though. The analyst's communication implies a *shared* semiotic competence that includes non-verbal as well as verbal registers, as if to say *we are talking, even when we are silent*. He also uses positional pronouns – you, me, I, your – to flicker between identification and difference. Time is enriched and plasticised when the sigh functions as a mnemonic marker of a *link* not just between two subjects, but also between their earlier and later selves and histories, being reminded of a shared past or a possible future.

Fred Busch's analysand Miss A felt she had been kicked out of the nest before she was ready to fly and registered this feeling of prematurity in her responses to the timing of office visits. In one session she 'suddenly looked at the clock, gasped, and then sank down into her chair with a sigh of relief' (Busch 1978: 491). She had thought their time was up, and then realised she still had fifteen minutes to finish what she was talking about. This sigh may well enact, and signify, a stay of execution, a pardon, or a resistance to being timed. Certainly we could see this as an instance of 'regression' to paralinguage. But above all it speaks eloquently of a wish for time, for the time of affective expression. Neither is paralinguage a primitive 'before' or 'underneath' language. Rather, according to Bateson at least, paralan-

guage has grown richer and more complicated along *with* language, owing to their longtime collaboration (Bateson 2002: 418). There appears to be neuroscientific evidence for this co-creative intimacy between language and paralanguage. For example, a study by Chang et al. (2009: 314) 'showed substantial activation overlap between speech and non-speech [vocal] function in [brain] regions', suggesting 'common neural substrates' – difference, but also sharing.

The chief kinetic action of the sigh is *opening*. According to Heim and colleagues (1968: 271) 'the physiologic role of the sigh' in reopening 'atelectatic air spaces' (in the lungs) 'interact[s] with emotional factors'. If, as Davis suggests, sighs 'fill' the spatiotemporal voids created by unmourned loss, they also counter the heart's self-'smothering' with feelings of expansiveness and plenty. Sighs don't just fill lungs; they inflate them and are used in respiratory therapy to provide enough volume to prevent over-absorption of certain gases (Pelosi et al. 1999). When patients are on respirators, they are given five regular breaths and then a sigh, another five regular breaths and then a sigh, and so on. Since 'the . . . laryngeal muscles are exquisitely sensitive to emotional stress', sighs have also been used in the treatment of psychogenic speech disorders to ease what is known as vocal constriction or hyperfunction and precipitate a 'relaxed, vocalized expiration'.<sup>24</sup> Phrases and sentences can be initiated 'on the sigh', with the hope of introducing patients to the 'soothing potential' of speech.<sup>25</sup> Vocal constriction or hyperfunction is a 'musculo-skeletal tension disorder' resulting from the use of excessive force in the process of articulation, resulting in the upward pull of the larynx and hyoid bone (Boone and McFarlane 1993). The sigh relaxes constriction, opens up the throat, and makes speech and prosody possible.

Sub-glottal pressure regulation plays a 'crucial role' in intonation.<sup>26</sup> The 'glottal' or 'vocal fry', a (relatively) slow forcing of air through a partial glottal closure while emitting low-frequency sound vibrations, is a good example of the wide range of uses to which non-verbal signs can be put. Glottal fry is a recognised sign of speech disorder, but it is also a form of slang, to be found, for example, in the speech of many young Americans (Lewandowski 2012). Like the sigh, it has been used in speech therapy to help patients ease vocal constriction. Throat clearing also makes use of glottal constriction to clear a channel, and also takes time; Bollas reports that his analysand "'cleared" his voice with guttural expulsions, as if this was a prerequisite to the material that followed' (Bollas 1984: 206). Easing of vocal hyperfunction has also been encouraged by teaching speakers to 'initiat[e] phonation with the /h/ sound', to open the mouth, to sigh, and to 'yawn-sigh', where the yawn helps to precipitate a 'relaxed, vocalized expiration'; phrases and sentences can be said, or at least initiated, 'on the sigh', again with the hope of introducing patients to the soothing potential of speech (Boone and McFarlane 1993).

'Full-blown' emotional states typically suspend speech, even if only for a short while (Cowie and Cornelius 2003: 11). The sigh might at times be a compromise

<sup>24</sup> Aronson cited in Boone and McFarlane 1993.

<sup>25</sup> *Ibid.*

<sup>26</sup> Lieberman cited by Heim et al. 1968: 261.



formation, an expressive means of suspending speech in order to sustain its possibility. Might tidal waves of sighs enact a liminal 'holding environment' in which movements to and fro might be practised? The words and behaviour of a patient called 'Lily', who had just acknowledged that her analyst, 'rather than being the cruel separator she labeled him before', was 'just the opposite', is described as follows:

With a deep sigh . . . [she] lay down on the couch again, and the room became very quiet. 'I can hear you breathing. It makes me happy'. A little later, she said, 'I feel giddy', and curled up on her side. She began to shiver and put her arms around the cushion with her face almost buried in it. She began to mumble not very clearly, 'So happy, so very happy . . . so kind . . . everyone kind and happy and good . . . lovely feeling . . . all colors . . . such nice taste . . . good taste . . . I'm flying . . . the blue's coming near . . . it's going away . . . it's gone'.<sup>27</sup>

Buchholz and Chinlund (1994: 369), commenting on this case narrative, think that 'this moment . . . in the idyllic holding environment . . . was not a denial of closeness but, rather, an indication that Lily's self had strengthened', and could acknowledge needs for 'both intimacy and aloneness'. Lily's sigh opens her ears to the sounds of her analyst's breathing in a shared milieu, with room enough for all colours, for flight, for "the blue", for "coming near" and "going away". Her sigh also initiates story-telling: "the blue's coming near . . . it's going away . . . it's gone", where the sharing of experience enables us to leave blue behind, at least for the moment.

Caruth (1987: 46–7) reports a patient who sighed deeply as he prepared to lie down on the couch: 'In response to my comment acknowledging the sigh he replied, "I sighed for you."' Caruth suggests that this sigh indicated pre-Oedipal merger with the fantasised fatigue of the patient, but 'in another stage of the transference' could also have represented Oedipal longings (*ibid.*), perhaps in the context of rescue. Intersubjectivity is initiated and furthered by breathing; the analyst and musician Steven Knoblach describes breathing with his patient in this way:

I too took in a deep gutful of air . . . [I]t seemed to regulate my sadness . . . I released the breath, but with a different resonance . . . a deep quiet sound that came from the chest area and was somewhere between a moan and a sigh. Here, our sound shapes briefly filled a vast area of affective space, a space [that] made [it] possible . . . for something new to begin to emerge. (Knoblach 2008: 815–16)

Respiration is both enabling *and* symbolic of intersubjectivity, and, most importantly, it is part of the expressive 'style' of the individual 'organism+environment'. According to Heim et al. (1968: 266) there are 'marked inter-personal and intra-

<sup>27</sup> Anthony 1961: 218, cited in Buchholz and Chinlund 1994: 369.

personal variation[s]' in 'patterns of respiratory movement' during speech, variations characterised by 'constancy' over time. In other words, we not only have particular styles of breathing, we also have particular styles of breathing with others. Breathing patterns are among the 'regularities that are at every instant the result of our biological and social histories . . . Indeed [of] the whole mechanism of generating ourselves . . . and our world . . . which we bring forth in our co-existence with others' (Maturana and Varela 1992: 255).

Writes Shakespeare:

When to the sessions of sweet silent thought  
 I summon up remembrance of things past,  
 I sigh the lack of many a thing I sought,  
 And with old woes new wail my dear time's waste  
 . . .  
 But if the while I think on thee, dear friend,  
 All losses are restor'd and sorrows end. (Sonnet 30, ll. 1–4, 13–14)

The force of Shakespeare's much-discussed sonnet form, wherein quatrains are followed by a concluding couplet, is always to create something like a lull or respite, a pit stop – the extra time, the *breathing room* that helps us bear our care-full lives, our struggles with what passes through us. This extra time for expression can be occupied in many different ways: as abreaction in the form of the words that help us remember insult differently ('all this the world well knows; yet none knows well / To shun the heaven that leads men to this hell', Sonnet 129); as plea for reunion ('so will I pray that thou mayst have thy Will, / If thou turn back and my loud crying still', Sonnet 143); above all, as loving words for the enlivening effects of phatic discourse itself ('So long as men can breathe, or eyes can see, / So long lives this, and this gives life to thee', Sonnet 18). In the words of another poet, Bob Hicok:

I often feel  
 everything is applause, an apparition  
 of the surprise of existence,  
 that the substances of life  
 aren't copper and lithium, fire  
 and earth but the gasp  
 and its equivalents, as when rain falls  
 on a hot road  
 and summer sighs. Or the poem  
 feels that, it's hard to tell  
 my mind from the poem's . . .

Bob Hicok, 'Equine Aubade'<sup>28</sup>

<sup>28</sup> Thanks to Eileen A. Joy for introducing me to this poem.

## ‘The adding of artificial organs to the natural’: Extended and Distributed Cognition in Robert Hooke’s Methodology<sup>1</sup>

*Pieter Present*

Robert Hooke (1635–1703) is mostly known for his work as assistant and technician for Robert Boyle, for whom he constructed and operated the well-known air-pump, and as ‘Curator of Experiments’ of the Royal Society.<sup>2</sup> Hooke has, however, also left behind texts expressing his methodological views, which were intricately entwined with his views on the nature and improvement of human cognition.

In this chapter, I will read Hooke’s views through the lens of the contemporary theories of extended and distributed cognition, showing how Hooke conceptualised the role of external media in cognition.<sup>3</sup> Although the idea arguably has older roots, the notion of extended cognition is mainly associated with Andy Clark and David Chalmers’ by now canonical paper ‘The extended mind’. There, Clark and Chalmers argue that human cognition is not bound by the body and the skull but can ‘extend’ into the environment. In the case of doing complex calculations with the help of pen and paper, for example, the manipulation of these external media should be seen as part of the cognitive process of calculating. The brain still plays a role, but some cognitive operations are ‘delegated to manipulations of external media’ (Clark and Chalmers 1998: 7–8). As a further illustration, Clark and Chalmers refer to a study done by David Kirsh and Paul Maglio (1994) on Tetris players. To determine if the falling shape fits a slot, a player can perform a mental rotation of the shape *or* she can physically rotate the shape by pressing the rotation

<sup>1</sup> I would like to thank Sorana Corneanu, Boris Demarest, Steffen Ducheyne, John Sutton and the anonymous reviewers for their comments on earlier versions of this chapter. Special thanks to Maarten Van Dyck and Charles T. Wolfe for their guidance and continuous support during my research on this topic.

<sup>2</sup> For further background on Hooke and his scientific activities, see Bennett et al. 2003; Cooper and Hunter 2006; Hunter and Schaffer 1989.

<sup>3</sup> Due to the shortness of this chapter, and due to my focus on presenting Hooke’s views in his own terms, I will not treat the discussions between proponents of different approaches to extended cognition, for example the so-called ‘first wave’ and ‘second wave’ approaches. An overview of these positions, and of the most important criticisms on extended cognition, can be found in Menary 2010b. A discussion of the relation (and differences) between the approaches of extended and distributed cognition is given by one of the leading authors on distributed cognition in Hutchins 2014.

button. In the latter case she can visually check whether shape and slot are compatible. Kirsh and Maglio calculated that the use of physical rotations to determine shape-slot compatibility takes 700 milliseconds less than doing it by mental rotation. The use of physical rotations in this process is an example of what Kirsh and Maglio call *epistemic actions*, actions that, in Clark and Chalmers’ (1998: 8) words, ‘alter the world so as to aid and augment cognitive processes such as recognition and search’. In the first part of the chapter, I will discuss Hooke’s calls for the use of an external memory, precisely to allow for such epistemic actions.

In the second part of the chapter, I show how this external memory made it possible for the Royal Society to work as a distributed cognitive system. Edwin Hutchins’s *Cognition in the Wild* (1995) is often viewed as the foundational text for applied research in distributed cognition. Like Clark and Chalmers after him, Hutchins wants to move beyond the view that cognition is something which only happens inside the human skull. Unlike Clark and Chalmers, however, Hutchins does not focus on individually extended cognition, but rather analyses the way in which a system comprising people and artefacts can be seen as a cognitive system. He does this by analysing the way navigating a navy ship is performed by a distributed cognitive system comprising people, instruments, artefacts, external representations and the structures provided by the environment in which the navigation team works. The external representations on board, such as the alidade, the record log and naval charts, play a crucial role in this process. Rather than seeing these external representations as merely inputs and outputs of human cognition, Hutchins sees the transfer and manipulation of these external artefacts as part of the broader cognitive process carried out by the distributed system. Through a reading of Hooke and Thomas Sprat’s *The History of the Royal Society of London*, I will show how written materials were conceptualised as making it possible for the Royal Society to work together as a socially distributed mind.

The aim of this chapter is not to present Hooke and Sprat as proponents of extended or distributed cognition *avant la lettre*, but to show how they tried in their own terms to conceptualise the cognitive nature of external artefacts and the distributed nature of scientific cognition.

## Robert Hooke’s ‘Universal Cure of the Mind’: Extending Cognition

Now though by what I have been saying, I have endeavour’d to shew that the soul has by its radiation a more than ordinary and commanding power over all the ideas placed within the repository; yet I would not be understood so to limit its sphere of radiation, and thereby may extend it, not only to all and every point of the body inlivened and preserved by it; but possibly it may extend even out of the body, and that to some considerable distance, and thereby not only influence other bodies, but be influenc’d by them also.<sup>4</sup>

<sup>4</sup> Hooke 1705: 147. Throughout the chapter, when quoting early modern authors I retain the original spelling, but use present-day capitalisation.

Although most of Hooke's views on cognition were expounded in the context of his methodological writings, in his posthumous works we find a lecture which is exclusively devoted to the presentation of a model of memory and its workings. According to Waller, who edited and published Hooke's posthumous works, the lecture on memory was delivered in 1681/2 (Hooke 1705: xxiv). I will not go into all the details of Hooke's model, but will only highlight the aspects that are relevant for the current discussion.<sup>5</sup>

Hooke starts by emphasising the material character of the memory faculty. It is, says Hooke (1705: 139), 'as much an organ, as the eye, ear or nose'. The 'organical' nature of memory is inferred from its being susceptible to both improvement and impairment. Fever, a blow on the head, or heavy drinking, for example, can inhibit the working of memory. The soul, however, is, according to Hooke, not affected in these instances, as it is the 'first principle of life' and 'an incorporeal being' (140). Despite its incorporeal character, 'in performing its actions, [the soul] makes use of corporeal organs, and without them cannot effect what it wills' (140). Cognitive actions for Hooke are therefore always actions involving material entities. Hooke goes on to show how the actions of the soul, such as 'apprehending, remembring and reasoning' can be explained as material operations (141).

Hooke calls the memory a 'repository of ideas' and he describes it as seated in the brain. These ideas are distinct material entities formed by the soul out of the material of the brain. They originate either from sensory impressions or from reasoning. In the case of sensory impressions, however, ideas cannot be formed without 'the concurrent act of the soul', leading Hooke to specify that in those cases we should say that the ideas are formed 'partly by the senses, but chiefly by the soul itself' (140). The latter Hooke imagines to be located somewhere specifically in the brain, although he does not pinpoint an exact location (140). As for the location of the ideas, Hooke says

that there is as it were a continued chain of ideas coyled up in the repository of the brain, the first end of which is farthest removed from the center or seat of the soul where the ideas are formed; and the other end is always at the center, being the last idea formed, which is always the moment present when considered. (140)

Each idea is characterised by certain 'determinate motions' (142). These correspond to the motions that impacted the senses in the act of sensation. Each sense has its own type of brain matter, capable of storing the related motions (140–2).

Comparing the soul to the sun sitting at the centre of the solar system, Hooke posits that the soul is sensible of the ideas stored in the repository by propagating a 'radiation', feeling the ideas, as it were, 'by their lying in the way of the radiation, and partly also by their reacting and repercussing a radiation back upon the soul'

<sup>5</sup> A discussion (and visual representation) of Hooke's model can be found in Oldroyd 1980. A discussion of Hooke's model from a contemporary psychological perspective is given by Hintzman 2003. For a further contextualisation of this specific lecture, see Singer 1976.

(144). Every action of the soul produces a new idea, so every time the soul remembers something, and thus ‘senses’ an idea in the repository, a duplicate of the idea is produced (145). Reasoning, for Hooke, consists in the formation of a more complex idea, combining the motions of several ideas already stored in the repository:

Another and more compleat action of the soul, is the forming new ideas from the comparing re-actions from several ideas placed here and there in the repository, and its [that is, the soul’s] being sensible of the harmony or discord of them one with another, which does produce an idea wherein all those various respects are in some means united and impressed upon one and the same idea. This is an idea of greater perfection, and according to the attention of the soul in being sensible of more and more variety of former ideas, and the regularity and order of its proceeding in that action, and the more stedly and distinct manner in the course and progress of it, so is the idea more compleat, as well as more compou[n]ded: and this I conceive to be that action of the soul which is commonly called reasoning. (146)

Both remembering and reasoning consist in the soul using material stored in the repository of the brain and producing a new idea which is then also stored in the repository. Since reasoning always involves work on and with the material stored in the repository, care for the content and organisation of this material will be crucial for the natural philosopher (146).<sup>6</sup> As I will now show in the next section, in Hooke’s methodological writings, this will indeed be one of the main concerns. Hooke’s care for the mind will, however, go beyond the confines of the skull. In order to circumvent the shortcomings of internal memory, Hooke will propose the use of writing as a way for the soul to reason on paper.

In the preface to his celebrated *Micrographia* (1665), Hooke gives an account of his methodology, which he describes as a ‘universal cure of the mind’ (preface, b2). In presenting his methodology in this way, Hooke was using the vocabulary of an existing literary tradition. Sorana Corneanu (2011) has argued that the methodological writings of Hooke and other Royal Society virtuosi should be seen as part of a broader tradition in early modern culture which concerned itself with the ‘cure’ or ‘cultivation’ of the mind. This so-called *cultura animi* or *medicina animi* tradition had brought forth an elaborate literature traversing different disciplines and genres.

What the works of the *cultura animi* tradition had in common were ‘analyses of the faculties and distempers of the whole mind and prescriptions of remedies and cultivating regimens envisioned as life programs’ (Corneanu 2011: 5). These were deemed necessary to remedy the ‘distempers’ and ‘diseases’ which had plagued the human mind ever since the Fall. It was hoped that through these regimens, one would be able to regain some of the perfections (both cognitive and moral) that

<sup>6</sup> For further discussion of Hooke’s views of memory in relation to his methodological views, see Mulligan 1992.

Adam enjoyed before the Fall.<sup>7</sup> In line with this tradition, Hooke (1665) presents his own cure of the mind as a way ‘to recover some degree of those former perfections’ (preface, a1). This will be done by ‘rectifying the operations of the sense, the memory, and reason’, the faculties that together make up our cognitive apparatus (preface, a1). The contextualisation of Hooke’s work in the context of the *cultura animi* tradition makes clear why discussions of scientific method in his work are inextricably connected to discussions of the workings of the human cognitive apparatus.<sup>8</sup>

The first thing that should be done is to ensure ‘the right correspondence’ between these faculties. In order to generate reliable knowledge, the faculties have to be internally organised in a very specific way. Both memory and the senses are to be subordinated to reason. Hooke (1665), however, emphasises that the latter is to order the other faculties ‘only as a lawful master, and not as a tyrant’ (preface, b3). With regard to the senses, reason ‘must watch [their] irregularities’ (preface, b3). With regard to the memory faculty, reason has to perform a kind of quality check on the information stored there and order it:

It must examine, range, and dispose of the bank which is laid up in the memory: but it must be sure to make distinction between the sober and well collected heap, and the extravagant idea’s, and mistaken images, which there it may sometimes light upon. (Preface, b3)

Both of reason’s regulatory functions are interrelated, and in performing these functions, the reasoning faculty is in fact dependent on the other faculties. New information from the senses helps in the assessment and organisation of memory, while old information stored in memory can help in watching the irregularities of the senses. Hooke therefore speaks of a ‘continual passage’:

[The true philosophy] is to begin with the hands and eyes, and to proceed on through the memory, [it is] to be continued by the reason; nor is it to stop there, but to come about to the hands and eyes again, and so, by a continual passage round from one faculty to another, it is to be maintained in life and strength. (Preface, b3)

Restoring the right correspondence between the faculties is not enough, however. Memory and the senses are both individually plagued by ‘infirmities’, ‘imperfections’ and ‘frailties’. Our senses are prone to errors, and incapable of observing the

<sup>7</sup> A further treatment of the role and the importance of the notion of the Fall in early modern epistemology and scientific methodology can be found in Harrison 2009.

<sup>8</sup> Lotte Mulligan (1992: 54) has remarked that ‘Hooke presented the operation of memory as an analogue of Baconian scientific method’. Using the term ‘analogue’ here could, however, be misleading, given the nature of the *cultura animi* tradition. Hooke’s presentation of the operation of memory and his Baconian scientific method are part of the same project, rather than the one being constructed in analogy to the other.

very small or large. Our memory, in turn, is incapable of retaining all particulars, and even when they are retained, it is often difficult to recollect them when necessary. Given that these faculties, which form the basis for the functioning of reason, are in such a sorry state, it is not surprising that our judgements and reasoning are so imperfect. As a faculty, reason itself, however, does not have a particular imperfection: ‘the errors of the understanding are answerable to the two other [faculties]’ (preface, a2). Hooke’s cure of the mind will therefore focus on the senses and the memory, on the one hand aiming at ‘the right ordering of them all, and the making them serviceable to each other’, and on the other hand remedying their imperfections (preface, a3).

In addition, the imperfections of the senses can be remedied by the use of instruments, which for Hooke is, ‘as it were, the adding of artificial organs to the natural’ (preface, a3).<sup>9</sup> The memory faculty is not without its own kind of external aids:

[W]e may be sufficiently instructed from the written histories of civil actions, what great assistance may be afforded the memory, in committing to writing things observable in natural operations. If a physician be therefore accounted the more able in his faculty, because he has had long experience and practice, the remembrance of which, though very imperfect, does regulate all his after actions: What ought to be thought of that man, that has not only a perfect register of his own experience, but is grown old with the experience of many hundreds of years, and many thousands of men. (Preface, d1)

In the same way that instruments are artificial organs added to the natural, writings provide us with an artificial memory resource. This external memory allows one to have ‘the experience of many hundreds of years, and many thousands of men’. By using artificial organs to enhance the scope of our senses and memory, the reasoning faculty is therefore provided with more materials to aid its work. In the lecture on memory discussed above, Hooke conceived memories to be material entities and construed reasoning as an operation upon these material entities, using them as material to produce new ideas. As ‘thinking is partly memory, and partly an operation of the soul in forming new ideas’ (Hooke 1705: 146), our thinking can be greatly enhanced through the use of an external memory:

What may not be expected from the rational or deductive faculty that is furnished with such materials, and those so readily adapted, and rang’d for use, that in a moment, as ’twere, thousands of instances, serving for the illustration,

<sup>9</sup> For a further discussion of Hooke’s views on scientific instruments and their role in his experimental and natural philosophy, see Bennett 1980. The notion of providing technological aids to the human faculties is already present in the work of Francis Bacon, the main source for Hooke’s methodological views. Miranda Anderson compares Bacon’s view that human beings are ‘necessarily comprised of physical, mental, technological and sociocultural factors’ with the extended mind hypothesis (Anderson 2015b: 71). A further assessment of the relation between Bacon’s and Hooke’s views, however, lies beyond the scope of this chapter.



determination, or invention, of almost any inquiry, may be represented even to the sight? (Hooke 1665: preface, d1)

Hooke's *Micrographia* (1665) itself is designed to serve this function. In a rhetorical move of modesty, Hooke describes the observations recorded in the book as 'some materials, which [the great philosophers of this age] may afterwards order and manage with better skill' (preface, b2). In the same way as the soul reasons by the formation of complex ideas out of simple ones, books filled with 'particulars' can provide material for the soul for reasoning and 'the raising of axioms and theories' (preface, b2).

In another posthumously published treatise, Hooke further elaborates on the methodology presented in the preface of *Micrographia*. The treatise itself again proposes specific 'remedies' for the frailties of the senses and the memory, but focuses mostly on 'a method of collecting a philosophical history, which shall be as the repository of materials, out of which a new and sound body of philosophy may be raised' (1705: 18).<sup>10</sup> Hooke here refers to written histories in the same terms as to the stock of internal memories in the brain, namely as a 'repository'. In the same way the soul uses ideas already stored in the memory for its reasoning, and stores newly made ideas in the same repository, the external repository functions both as a store of old information and as a receptacle for new information. Hooke gives his readers concrete instructions on how to organise their external repositories, emphasising the need to be able to continuously reorder, reorganise and revise its contents:

Now these histories being writ in brief, on a small piece of very fine paper, 'twill be very convenient to have a large book bound after the manner of those that are very usual for keeping prints, pictures, drawings, &c. in . . . On the sides of which . . . it would be convenient to stick on with mouth glew, or some such substance . . . the several small schedules containing the abbreviated and complicated histories of observations or experiments, as they are last written on fine paper, for by the contrivance of this book, which for brevity's sake I will call a repository, not only all the histories belonging to any one Inquiry may be placed so as to appear all at one view . . . but they may at any time, upon occasion, be presently remov'd or alter'd in their position or order. (1705: 64)

The information already written down serves as material for rereading and further synthesising, the result of which is again put down on paper, preferably in short-hand or abbreviation, 'whereby the whole history may be contracted into as little space as is possible' (1705: 64). We here see an externalised version of the 'continual passage' between the faculties that Hooke deemed necessary for the pursuit of

<sup>10</sup> This clearly echoes Francis Bacon's call for the collection of 'natural histories'. For a further discussion of Bacon's view on 'natural history' and the use of notebooks, and its impact on the views and practices of several Royal Society virtuosi (including Hooke), see Yeo 2007 and 2014.

true philosophy, and an externalised reasoning process, analogous to the process that occurs within the brain. Just as the soul compares different ideas stored in the internal repository and produces a more complex idea which synthesises the information contained in those different ideas, the external repository is meant to be taken up in a continual process of revision, comparison and synthesising.

Commenting on the use of external aids, Hooke explicitly states that reasoning with and on external means is not essentially different from internal reasoning:

And tho’ indeed this process of reasoning and inquiry may seem nothing else but what every man would do, and does indeed continually practise in all kinds of inquiry: yet [it] has this vast advantage above the common way, where the bare powers of the senses, memory and understanding are relied upon, that it perfects these faculties to the highest pitch they are capable of, and that is indeed as much as can be hoped for from art. (1705: 34)

The process of cognition involving the use of external means is thus not essentially different from ‘what every man would do, and does indeed continually practise in all kinds of inquiry’. The relevant difference lies in the fact that external aids allow one to ameliorate this process by bringing the ‘faculties to the highest pitch they are capable of’. In the discussion of the cure of the mind presented by Hooke in the preface to his *Micrographia*, we saw how he conceived this cure as the remediation of the defects of the senses and the memory by external instruments. The text following the passage quoted above makes clear that Hooke indeed has this in mind:

from whereas in the common ways of ratiocination, examination and inquiry, all things are trusted to the immediate power of the faculties of the soul, *viz.* the bare senses, memory and reason; in this they are none of them left, without their armour, engines, and assistants, the senses are helped by instruments, experiments, and comparative collections, the memory by writing and entering all things, ranged in the best and most natural order; so as not only to make them material and sensible, but impossible to be lost, forgot, or omitted, the ratiocination is helped first, by being left alone and undisturbed to it self, having all the intention of the mind bent wholly to its work, without being any other ways at the same time employed in the drudgery and slavery of the memory. (1705: 34)

Hooke’s assertion that ‘the ratiocination is helped first, by being left alone and undisturbed to it self, having all the intention of the mind bent wholly to its work’ seems odd at first sight.<sup>11</sup> Had he not defended the view in the lecture on memory that cognitive actions always involve material entities? There, he had explicitly stated that ‘in performing its actions, [the soul] makes use of corporeal organs, and without them cannot effect what it wills’ (Hooke 1705: 140). Moreover, we have seen how internal cognition for Hooke always involved work on and with material

<sup>11</sup> I would like to thank Miranda Anderson and Michael Wheeler for pointing out this ambiguity.

memories stored in the repository of the brain. Rather than helping the cognitive process, leaving the ratiocination to itself seems to make the cognitive process impossible. To understand Hooke, we should however remember that in his presentation of his cure of the mind he made clear that the reasoning faculty does not have a particular imperfection. Rather, ‘the errors of the understanding are answerable to the two other [faculties, i.e. the senses and memory]’ (1665: preface, a2). As the senses and the memory are the organs used by reason in cognition, the imperfections of these faculties cannot but lead to an imperfect cognitive process. Conversely, by ‘perfect[ing] these faculties to the highest pitch they are capable of’, one automatically perfects the cognitive process.

In the lecture on memory, Hooke had used his model to explain the imperfections of internal memory. Recall that Hooke conceived of the soul as being posited in the centre of the brain, with the memories stored around it. New ideas were produced in the centre, pushing the other ones outwards in a spiral fashion. In this way, however, ideas ‘being protruded farther and farther from the center or seat of the Soul, and crowd[ed] into orbs, though further off, yet closer stuffed and crowd[ed] together [can] be in time alter’d, and sometimes quite lost’ (1705: 144). In the discussion of the lecture, we also saw how Hooke compared the soul to the sun sitting at the centre of the solar system. Through a kind of radiation, the soul was able to sense the ideas stored in the repository. As in the solar system, however, ideas might stand in the way of this radiation, eclipsing other memories. In this way, recollection might be temporarily hampered (1705: 144). These are the imperfections that Hooke has in mind when he speaks of the ratiocination being ‘employed in the drudgery and slavery of the memory’. Memory should here be understood as *internal* memory. By curing the mind through the use of writings as an external memory, the ratiocination is ‘left alone and undisturbed to it self’ in the sense that it can rely on the more perfect form of memory provided by writings, rather than having to struggle with the imperfections of internal memory. This is made clear by a further passage, where Hooke describes the nature and advantage of an external repository:

for first all things are set down in their order . . . [N]or will the mind be much troubled to run over all the particular instances and heads of inquiry, they are all presented at once to the view: their order, congruity, disagreement, similitude, &c. are all manifest to the eye, quickly to be examined, recollected, reviewed, otherwise placed, blotted out, or the like, according to occasion. (1705: 34)

Here, Hooke uses the same words as in his discussion of the internal repository. As the mind is able to sense the order and the congruity or disagreement between ideas stored in the internal repository, the same operations can be done with the external repository. And as internal cognition results in the addition of a new idea to the repository, the external repository also allows one to add new material resulting from the examination of the writing. Both processes, internal and external, have a structural similarity. But whereas internal memory is characterised by imperfections, external memory is not. When using internal memory, the ratioc-

ination is subject to 'the drudgery and slavery of the memory'. However, when it uses an external memory 'all [instances are] manifest to the eye, quickly to be examined, recollected, reviewed, otherwise placed, blotted out, or the like, according to occasion'.

To summarise, according to Hooke, the use of artificial aids 'perfects [our] faculties to the highest pitch they are capable of', but reasoning with these aids 'may seem nothing else but what every man would do, and does indeed continually practise in all kinds of inquiry'. In the discussion of Hooke's model of memory, we have seen that Hooke describes reasoning as a process in which the soul compares several ideas in the repository, becomes 'sensible of the harmony or discord of them one with another', and 'produce[s] an idea wherein all those various respects are in some means united and impressed upon one and the same idea'. The external repository Hooke describes in the quotation above enables one to perform this same reasoning process on paper. Just as the soul can see and compare the ideas stored in the internal repository, in the external repository '[the instances] are all presented at once to the view: their order, congruity, disagreement, similitude, &c. are all manifest to the eye'. This enables one to perform the same kind of activities as the kind of activities performed by the soul on internal ideas, the product of which can be again put down on paper, just as ideas which are the product of internal reasoning are again stored up in the internal repository. Thinking being defined by Hooke as being 'partly memory, and partly an operation of the soul in forming new ideas', the external repository envisaged by Hooke enables one to think on paper, by manipulating entries in the external repository in the same way as the soul manipulates ideas in the internal repository (1705: 146). Hooke's 'universal cure of the mind', which he himself described as consisting of 'the adding of artificial organs to the natural', can therefore be seen as a regimen involving the extension of cognition through the development of artificial organs which the soul can use in its operations.

Before turning to the discussion of the conceptualisation of the Royal Society as a socially distributed mind, it is important to briefly address the issue of Hooke's dualism.<sup>12</sup> The fact that Hooke emphasises the soul's incorporeal nature might at first glance seem to be at odds with the notion of extended cognition, given the fact that some of the proponents of extended cognition explicitly present their approach in contrast to so-called 'Cartesian' classical cognitive science, which assumes a problematic distinction between mind and body or mind and world.<sup>13</sup>

<sup>12</sup> I thank one of the anonymous reviewers for pressing me on this issue.

<sup>13</sup> An example of this can be found in Rowlands 2010. Defining one's own position in contrast to Cartesianism is an old move, leading Richard Bernstein to the observation that '[m]ost contemporary philosophers have been in revolt against the Cartesian framework' (Bernstein 1972: 5). Bernstein is quick to add that he speaks 'of the "Cartesian framework" rather than "Descartes" because there is a serious question whether what is being attacked is really the *historical* Descartes' (Bernstein 1972: 5). A more subtle reading of Descartes's own views on cognition (and especially memory) and the role of the body therein can be found in Sutton 1998. Sutton also provides a reading of Hooke's model of memory as part of a series of English responses to Descartes's theory of memory (Sutton 1998: 129–48).

However, this does not endanger my reading of his theory as allowing for an extended version of cognition.

To begin with, it might be interesting to consider the reaction of some of Hooke's contemporaries to the model presented in the lecture on memory. The editor of Hooke's posthumous works felt obliged to add the following disclaimer:

[T]hough possibly some persons may imagine that the foregoing explication of these abstruse actings of the soul is too mechanical, and tends to the making the soul a material being, yet I hope the candid reader, perusing it without prejudice, will not find the least cause for such an imputation. (Hooke 1705: 148)

This, however, was just the concern that was voiced by some members in the audience after Hooke's lecture was given (Singer 1976: 117). According to Oldroyd (1980: 25), Boyle might even have been reacting to Hooke's model of memory when in his *Christian virtuoso* he 'expressed amazement at the thought that such a multitude of ideas might be accommodated in such a restricted space'.

Although, as Oldroyd (1980: 21) notes, Hooke's theory 'was essentially a form of Cartesian dualism', and his contemporaries were wrong in thinking that he made the soul a material being, he does make *cognition* a material process. As I have shown in the discussion of Hooke's model of memory, cognition for Hooke always involves material entities. Every cognitive activity is therefore also a material activity, where the soul uses an instrument, be it internal or external. We can compare this to Andy Clark's 'hypothesis of cognitive impartiality':

Our problem-solving performances take shape according to some cost function or functions that, in the typical course of events, accord no special status or privilege to specific types of operations (motoric, perceptual, introspective) or modes of encoding (in the head or in the world). (Clark 2008: 121)

Applied to Hooke's view on the workings of the understanding: the immaterial soul accords no privilege to internal or external memories, but in the context of natural philosophy, there are a lot of benefits to be gained by using external memories. According to Clark, the hypothesis of cognitive impartiality poses a (solvable) puzzle to the proponent of extended cognition:

For it threatens, unless delicately handled, to undermine the image of cognitive extension in quite a novel fashion. Thus, suppose we now ask: Just *what is it* that is so potentially impartial concerning its sources of order and information? The answer looks to be 'the biological brain'. So haven't we (rather deliciously) ended up firmly privileging the biological brain in the very act of affirming its own impartiality? (Clark 2008: 122)

To solve this puzzle, Clark makes a distinction between two different explanatory targets. On the one hand we have the recruitment of the extended organisation

itself and on the other ‘the flow of information and processing in the newly soft-assembled extended device’ (122). This leads Clark to the dictum: ‘Individual cognizing, then, is *organism centered even if it is not organism bound*’ (123, emphasis in original). In the process of assembly, the brain plays a very special and central role. However, once the extended system, comprising both organism and external media, is in place, ‘it is the flow and transformation of information in (what is often) an extended, distributed system that provide the machinery of ongoing thought and reason’ (122). This discussion by Clark can help alleviate the worry that Hooke’s immaterial soul, safely tucked in its seat in the brain, sits uneasily with the notion of cognition being extended. In Hooke’s case, cognition is centred around the soul, but the flow and transformation of information takes place in an extended system comprising immaterial soul and material memory, both internal and external.

### **‘A union of hands and eyes’: Socially Distributed Cognition in the Royal Society**

For, let the wittiest, and most eloquent men think as largely as they can, on any subject in private; yet, when they come into the publick; and especially, when they have heard others speak before them, their argument appears quite another thing to them; their former expressions seem too flat, and cold for their present thoughts; their minds swell, and are enlightned, as if at that time they were possess’d with the souls of the whole multitude, before whom they stand. (Sprat 1667: 98–9)

In the previous section, I have shown how the external memory envisaged by Hooke made possible an extended version of the ‘continual passage’ between the faculties (senses, memory and reason) on which the ‘life and strength’ of the ‘true philosophy’ depended. Another advantage provided by the externalisation of memory is that it allows for the emergence of a communal variety of this continual passage. In the previous section we have seen how, according to Hooke, the understanding had to ‘examine, range, and dispose of the bank which is laid up in the memory’. Externalising these memories makes it possible to perform on paper the kind of operations normally performed on internal memories: comparing, ordering and synthesising. But the external nature of this written memory also allows it to be continuously checked and improved by several different people, whereas internal memory is only accessible to one soul. In this way, a higher degree of certainty can be attained in natural philosophy:

How neer the nature of axioms must all those propositions be which are examin’d before so many witnesses? And how difficult will it be for any, though never so subtil an error in philosophy, to scape from being discover’d, after it has indur’d the touch, and so many other tryals? (Hooke 1665: preface, d1)

There are other ways in which the use of externalised memories allows for the communalisation of the continual passage between the faculties. Other observers can function as extended senses providing input for the common repository. This allows for division of cognitive labour. Whereas a natural philosopher working entirely alone has to proceed in his natural philosophical labour by using his own senses, memory and reason, a natural philosopher who is part of a scientific community is no longer troubled to make the observations himself. He can now employ himself to the ‘nobler’ work of philosophising:

As for my part, I have obtained my end, if these my small labours shall be thought fit to take up some place in the large stock of natural observations, which so many hands are busie in providing. If I have contributed the meanest foundations whereon others may raise nobler superstructures, I am abundantly satisfied; and all my ambition is, that I may serve to the great philosophers of this age, as the makers and the grinders of my glasses did to me; that I may prepare and furnish them with some materials, which they may afterwards order and manage with better skill, and to far greater advantage. (Hooke 1665: preface, b1–2)

In *The History of the Royal Society of London* (1667), an apologetic work intended to present and defend the activities of the Society against its critics, Thomas Sprat also discusses this cognitive division of labour within the Society. Lesser minds can contribute by ‘[bringing] their hands, and their eyes’ to the aid of the Society, ‘[assisting] in the *examining*, and *registering* what the others represent to their view’ (Sprat 1667: 72–3, emphasis in original).<sup>14</sup> In this way, the Society becomes a ‘union of eyes, and hands’ (Sprat 1667: 85), making possible a socially extended version of the ‘continual passage’ envisioned by Hooke. Before an experiment is conducted, the Society consults its memory ‘either from the observations of others, or from books, or from their own experience, or even from common fame it self’ (Sprat 1667: 95). In the same way as individual memory helps reason to watch the irregularities of the senses, the common knowledge of the Society can help guide its further inquiries. Here, also, the cognitive division of labour comes in handy. As ‘those who have the best faculty of experimenting, are commonly most averse from reading books’, the construction of this ‘general collection’ of information is done ‘by the joint labours of the whole society’ (Sprat 1667: 97). The experimenter appointed by the Society who is confronted with this information,

having so good an opportunity, of comparing so many other mens conceptions with his own, and with the thing it self; must needs have his thoughts more

<sup>14</sup> The fact that these lesser minds are uneducated provides further benefit according to Sprat (1667: 72), as there is no possibility that ‘their brains [are] infected by false images’. Because they are unaware of existing philosophical theories, they will not be inclined to comply their judgement in favour of a certain theory.

enlarg'd, his judgment confirm'd, his eyes open'd to discern, what most compendious helps may be provided; what part of it is more or less useful; and upon what side it may be best attempted: the truths, which he learns this way, will be his pattern; the errors will be his seamarks, to teach to avoid the same dangers; the very falshoods themselves will serve to enlarge, though they do not inform his understanding. (Sprat 1667: 98)

With this 'enlarged' understanding, the experimenter can go forth and proceed with his investigations. And in the same way as the information provided by the senses should again be brought to the judgement of reason, the experimenter should provide an account of his experiments to the counsel of the Society, allowing the latter to judge the information brought forth:

Those, to whom the conduct of the experiment is committed, being dismiss'd with these advantages, do (as it were) carry the eyes, and the imaginations of the whole company into the laboratory with them. And after they have perform'd the trial, they bring all the history of this process back again to the test. Then comes in the second great work of the assembly; which is to judg and to resolve upon the matter of fact. (Sprat 1667: 99)

In the 'continual passage' between the faculties of this socially extended 'union of eyes, and hands', writings play a crucial role. In the abstract of the Society's statutes, provided by Sprat, separate mention is made of '[t]he books that concern the affairs of the society', being 'the charter book, statute book, journal books, letter books, and register books, for the entring of philosophical observations, histories, discourses, experiments, inventions' (Sprat 1667: 148).

Later in the work, Sprat reports on the Society's 'repository and library'. Echoing Hooke's term for both the internal and external written memory, the 'repository' of the Society contained the material artefacts and instruments it had collected, considered 'a general collection of all the effects of arts, and the common, or monstrous works of nature' (Sprat 1667: 251).<sup>15</sup> The person mentioned as in charge of this repository is Robert Hooke. True to his word, Hooke 'has begun to reduce [this repository] under its several heads' (Sprat 1667: 251). This same synthesising activity was also taking place in the library of the Society:

[T]hey have also (amongst others) appointed a committee, whose chief employment shall be to read over whatever books have been written on such subjects. By this means they hope speedily to observe, and digest into manuscript volumes, all that has been hitherto try'd, or propounded in such studies. This is the only help that an experimenter can receive from books: which he may still use, as his guides, though not as his masters. (Sprat 1667: 252)

<sup>15</sup> For a discussion of the Royal Society's 'Repository', see Hunter 1989: 123–55.



The Society not only relied on information stored in its own archives, but had ‘begun to settle a correspondence through all contreys’ (Sprat 1667: 86). The correspondence of the Royal Society was in the hands of Henry Oldenburg, who even before the birth of the Society was the central node in a vast network of scholarly communication. From 1665 onwards, the observations sent to the Society were edited and printed in the *Philosophical Transactions*, the official journal of the Society.<sup>16</sup> Here also, writing enables a continuous flow of information. The eyes and hands spread across the world send their observations to Oldenburg, who then presents them to the Society to be judged by the assembly. After that they are put to print, stored as a collective memory, and sent back to the eyes and hands across the world.

In his book on early modern note keeping, Richard Yeo has shown how early modern endeavours of constructing a communal archive were indebted to the widespread practice of keeping commonplace books, notebooks and journals, and the related practice of sharing notes (Yeo 2014: 220–4). The fact, however, that different individuals had different ways of organising and using notes stood in the way of constructing ‘stable records of information that could be communicated, combined, and analyzed’ (Yeo 2014: 220). The Royal Society actively tried to address these challenges, and the publication and dissemination of its own collected and edited information played a crucial role therein. By disseminating printed versions of its condensations of information, the Society provided its observers with exemplars showing how to organise and communicate relevant information. This in turn facilitated the Society’s work of collecting and organising information coming from its sources.

In Sprat’s work we find a contribution written by Hooke, containing proposals ‘for the better making a history of the weather’ (Sprat 1667: 173). Hooke describes in detail the way weather observations should be written down in a table. He meticulously determines the sizes the columns should have and the units of measurement that should be used (Sprat 1667: 175–9). At the end of the text he gives an example of such a table, which bears the title ‘A Scheme At one View representing to the Eye the Observations of the Weather for a Month’. This title clearly echoes the already quoted passage in the preface of *Micrographia* in which Hooke talks about ‘such materials, and those so readily adapted, and rang’d for use, that in a moment, as ’twere, thousands of instances . . . may be represented even to the sight’ (Hooke 1665: preface, d1).

The table has two interrelated functions. On the one hand it makes possible the *condensation* of the information obtained from different observations into a form that makes it possible ‘[that] thousands of instances . . . may be represented even to the sight’.<sup>17</sup> Hooke was not the only one with such a view on the use of tables. Lorraine Daston (2015: 189) has shown how the ambition to synthesise informa-

<sup>16</sup> For a discussion of Oldenburg’s role, see Hunter 1981: 49–57.

<sup>17</sup> For a further discussion of the early modern use of tables (including Hooke’s) and the limited success of imposing shared conventions, see Daston 2015.

tion 'at one view' was a common theme in the early modern period. J. Andrew Mendelsohn (2011) has further shown how in the late eighteenth century tables were used to make 'general observations' (as opposed to 'particular' ones) possible. Further work needs to be done on the views of other Royal Society virtuosi on the cognitive role of tables, and their relation to the views of Francis Bacon. Referring to the contemporary theory of the 'extended mind', in the introduction to his work on early modern notebooks, Yeo (2014: 33–4) gives John Wilkins as an example of a member of the Royal Society who saw tables as a potential external memory which could aid in reasoning. In *The New Organon* Bacon ([1620] 2000: 109) calls for the making of tables 'in such a way and with such organisation that the mind may be able to act upon them'.

The second function of the table is that of *disciplining* potential observers: it tells them what to observe, how to observe it and how to communicate their observations.<sup>18</sup> The two functions are interrelated: it is only because the table *disciplines* the observer and provides a format in which he must imbed his observations that different observations made by several observers can be *condensed* in one table that can present a lot of information at once to the eye. Once this has been done, the table can function as an external memory which the rational faculty can use:

Now that these and some other, hereafter to be mentioned, may be registred so as to be most convenient for the making of comparisons, requisite for the raising axioms, whereby the cause or laws of weather may be found out; it will be desirable to order them so, that the scheme of a whole moneth, may at one view be presented to the eye. (Sprat 1667: 175)

The 'scheme' presented by Hooke provides an illustration of both extended individual ratiocination and the use of writing in a socially extended 'continual passage' between the different faculties. For the individual natural philosopher the 'scheme' works as an externalised memory, functioning in the exact way Hooke (1705: 34) described in his methodological works: '[the particular instances] are all presented at once to the view: their order, congruity, disagreement, similitude, &c. are all manifest to the eye'. No longer troubled to consult his internal memory, the natural philosopher can have 'all the intention of the mind bent wholly to its work, without being any other ways at the same time employed in the drudgery and slavery of the memory' (34). By allowing for the condensation of a multitude of observations in the same format, the table therefore not only contains his own memories, but allows the natural philosopher, to use Hooke's (1665: preface, d1) own words, to consult 'the experience of many hundreds of years, and many thousands of men'. Once he has 'raised axioms' from this material, they can be disseminated in print, allowing them to '[indure] the touch, and so many other

<sup>18</sup> In this way, their function can be compared to the function Daston and Gallison (2009) confer to scientific atlases.

tryals' (preface, d1) by the 'union of hands, and eyes' that is the Royal Society. This view on the use of tables resonates with the discussion of the cognitive advantages of tables and their use provided by Andrew Riggsby's chapter in volume 1 of this series (2018). In Riggsby's terms, Hooke's publication of an example of a table can be seen as an attempt to install a 'virtuous circle', where exposure to tables makes them more intelligible, which leads more individuals to use them, which in turn exposes more individuals to tables. Likewise, Hooke conceives of the use of tables as a positive feedback loop: tables discipline observers, who in turn are able to check the information contained in the table and contribute more material to it. Through this circulation philosophy 'is to be maintained in life and strength, as much as the body of man is by the circulation of the blood through the several parts of the body' (Hooke 1665: preface, b3).

## Conclusion

In this chapter I have given a reading of Hooke's methodological views through the lens of the theories of extended and distributed cognition. More specifically, I have focused on Hooke's call for the use of 'artificial organs', which could 'cure' the infirmities of our cognitive faculties. I have shown how in the case of memory, Hooke called for the use of writings as an external memory and the designing of this so-called 'repository' in such a way as to allow for it to be used for what Kirsh and Maglio would call 'epistemic actions'. Hooke described the use of these external materials in cognition analogously to the way the soul used internally stored memories: ideas are viewed, compared and synthesised into compounded ideas. The use of writing therefore allowed for an extended version of the 'continual passage' of information between the faculties envisioned by Hooke: things already stored can help in 'watching the irregularities of the senses'; new information provided by the senses can help to further organise and synthesise information already stored in the repository. In the second half of the chapter, I have shown how Sprat described the workings of the Royal Society as a socially extended version of this continual passage, wherein writings again played a crucial role. This socially extended continual passage provided further epistemic benefits. Whereas internal memory can only be organised and checked by the individual's soul, an externalised memory makes it possible for the content of the repository to be checked and organised by different people. In the last part of the chapter, I have discussed Hooke's proposals for the use of tables as a way to streamline this socially extended 'continual passage', allowing the Society to work together as a veritable 'union of hands, and eyes'.

Several authors have recently pointed at the potential fruitfulness of applying distributed cognition to science studies (M. J. Brown 2011; Giere and Moffatt 2003). A field of science studies putting this call into action and incorporating insights from distributed cognition is beginning to emerge (Nersessian 2008; Giere 2006). I hope to have shown in this chapter not only that it is possible to study scientific practices past and present from a distributed cognitive perspective, but

that – in the case of Hooke and the Royal Society at least – some scientific actors have tried to conceptualise the extended nature of scientific cognition in their own terms.<sup>19</sup>

<sup>19</sup> As one reviewer helpfully pointed out, given Hooke’s reflections on collective memory and the use of writing, links can be made to the literature on literacy, cultural memory and media. Especially relevant in this context, given Hooke’s own celebratory remarks on the possibilities offered by writing and printed media, are the works of Walter Ong (1958), Marshall McLuhan (1962) and Elizabeth Eisenstein (1979). Though pre-dating the emergence of the notion of distributed cognition, these works already point at the cognitive impact of the introduction of printed media. Due to the focus on the notion of distributed cognition, and space limits, I have not been able to engage with this literature in this chapter.

## Notes on Contributors

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