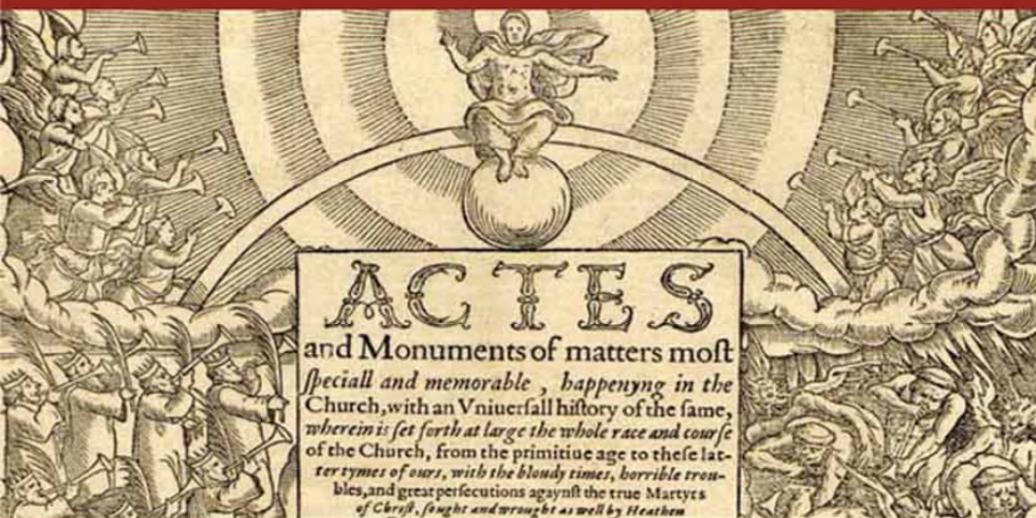


cognitive ecologies and the history of remembering

religion, education and memory
in early modern england



evelyn b. tribble and nicholas keene

palgrave macmillan memory studies



Cognitive Ecologies and the History of Remembering

Palgrave Macmillan Memory Studies

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COGNITIVE ECOLOGIES AND THE HISTORY OF REMEMBERING

Religion, Education and Memory in Early Modern England

Palgrave Macmillan Memory Studies

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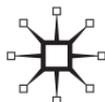
By

Evelyn B. Tribble

and

Nicholas Keene

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*In memory of my father,
James Emery Tribble, 1933–2008*
ET

To my wife Ellen Keene
NK

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Preface and Acknowledgements

This book emerges out of a Marsden-funded collaborative research project based at the University of Otago entitled *The Extended Mind in Early Modern England* that brought together a Shakespearian scholar, a cognitive philosopher, and an historian with shared interests in early modern European history. Whilst the book is the work of the literary scholar and the historian, the influence of the philosopher, Professor John Sutton at Macquarie, Sydney, is evident throughout, and we appreciate immensely the opportunity we have had to read John's work, discuss issues with him, and for his guidance in unravelling some of the knottier issues within cognitive science.

Much of the preliminary research for this book was conducted at the Institute for Advanced Studies in the Humanities (IASH) at the University of Edinburgh in 2007. An early draft of Chapter 2 was presented at the AHRC-sponsored conference on 'The Interactive Mind' in Edinburgh in 2006; thanks to Michael Wheeler for organising this event. Earlier versions of Chapter 5 were presented at the 2009 Australasian Society for Cognitive Science Conference, hosted at Macquarie by John Sutton; the Religious Studies Departmental Seminar at Victoria, University of Wellington, hosted by Joseph Bulbulia in December 2009; and *Towards a Unified Science of Religion*, a conference at the University of Otago in February 2010, hosted by James Maclaurin and Greg Dawes. The Department of English Staff Seminar members listened patiently to numerous versions of these chapters. We are grateful to scholars at all these forums for their input. Nicholas would also like to thank Michael Hunter and Moti Feingold for their continued support, and Evelyn is grateful to her husband, Tim Mixer and her daughter, Emelia Hillis Mixer, for their forbearance and patience through the process.

An earlier version of material that now appears in Chapters 2 and 3 appeared in the online journal *Scan* 2.2 (2005) under the title of 'The Chain of Memory: Distributed Cognition in Early Modern England.' An earlier version of Chapter 5 was published as 'Extending the Religious Mind: Early Quakerism and the Cognitive Science of Religion' in W. Christensen, E. Schier, and J. Sutton (eds.), *ASCS09: Proceedings of the 9th Conference of the Australasian Society for Cognitive Science*, 185–90, Sydney: Macquarie Centre for Cognitive Science.

This book complements but does not overlap with a related project: *Cognition in the Globe: Memory and Attention in Shakespeare's Theatre* (Tribble 2011). This project uses a Distributed Cognitive framework to ask how Shakespeare's actors coped with the enormous mnemonic and attentional demands of their profession.

We are very appreciative to the Marsden Trust for the opportunity they presented for us to work together. Interdisciplinary projects of this nature in the humanities remain relatively rare but we believe they can be incredibly fruitful and productive. We hope this book will appeal to a wide range of readers interested in memory studies, cultural history, cognition and philosophy of mind. We would like to thank Palgrave Macmillan for the opportunity to contribute to their new *Memory Studies* series, their editorial team for their advice, and their anonymous referee for their judicious suggestions and criticisms. We would also like to thank the wonderful general staff at the University of Otago English Department for all their help: Liz Lammers, Kylie Smail, Irene Sutton, and Kirstin Francis. We are also grateful for Dr Lisa Marr's indexing skills. We owe particular thanks to Sarah Entwistle and Karen McLean for their unflagging efforts in editing the final text. The four-way conversations, rapid-fire e-mails, scribbles on print-outs and mining of databases to produce the finished article have given us a finer appreciation of distributed cognition in action.

1

Introduction: Cognitive Ecologies, Distributed Cognition, Extended Mind and Memory Studies

The philosopher Andy Clark has explored the relationship between cognition and environment through an extended meditation upon the predicament of the mole cricket. These creatures attract their mates through song, but their minute size renders them incapable of producing sounds loud enough to travel. However, they solve this problem environmentally: by creating underground burrows that greatly amplify their songs, thus allowing them to be heard over long distances. For Clark, the mole cricket prompts consideration of where the organism ends and the environment begins; indeed, this distinction may be too starkly drawn, since the two elements can be seen to form a single acoustic system, an extended phenotype consisting of biological and environmental components.¹ Human beings, Clark argues, likewise create 'cognitive singing burrows' (2005: 236), environments and artifacts that extend our reach beyond the 'ancient fortress of skin and skull' (Clark 2003: 5). So accustomed are we to our environmental and artifactual surround, 'the ubiquitous presence' of cognitive artifacts such as 'pen, paper, models, words, numbers, blueprints, compasses' that we overlook 'the depth and importance of their role in distinctively human thought' (2005: 236). Moreover, our cognitive burrows do not remain static; instead, we refine them over time, teach others to use them, and 'we make the burrows themselves (books, oral traditions, software) do double duty as their own encodings for production by future generations' (2005: 241). In a process that has been called 'epistemic engineering' (Sterelny 2003: 157), humans extend thought into the world, altering their surroundings to construct 'problem-solving environments' (155) that compensate for such 'cognitive resource bottlenecks' (155) as our relatively limited capacity for working memory.² Such views emphasize 'cognitive extension'

as a ubiquitous human form of 'niche construction' (Wilson and Clark 2009: 56).³

We recognize that not many books about early modern religion begin by thinking about mole crickets. We start in this way in order to pose the question whether this general propensity to engineer our environments has any *historical* purchase. Clark writes compellingly of the 'extended cognitive physiologies achieved by progressively fitting an open-ended sequence of technologies to somewhat plastic human brains' (2005: 237). Can such models move us closer to what we might term a *cognitive cultural history* of early modern religion? This book examines the English Reformation as a test case to explore such questions. English Reformers show a canny sense of the importance of engineering the environment, building and re-building their cognitive burrows to establish new forms of memory and attention. Drawing upon recent work in philosophy known as Extended Mind theory, as well as research in the social sciences under the rubric of Distributed Cognition, this book uses Reforming practices as a test case for an ecological approach to the question of the relationships among memory, cognition, and culture.

We argue that models derived from Extended Mind and Distributed Cognition have the potential to open new windows on how people remembered. Both Extended Mind theory and Distributed Cognition posit that the mind is both embedded in and extended into its worlds. Rather than seeing 'cognition' as a set of interior trans-historical mental processes, extended and distributed models hold a hybrid and integrative view, in which the realm of the mental extends into physical and social systems.

Extended Mind theory arose from challenges to computational models of cognition that modeled thought as 'the rule-governed manipulation of internal symbolic representations' (Van Gelder 1995: 345). Instead, Van Gelder and others proposed a model of 'dynamical systems', a holistic approach that situates cognition within contextual and dynamic context. Philosophers such as Clark, John Sutton, Michael Wheeler, Susan Hurley, Richard Menary, and Rob Wilson have further challenged internalist models inherited from dualist frameworks of thought within the philosophy of mind. They critique individualistic conceptions of thought that erroneously posit that 'cognition takes place inside the head, wedged between perception (on the input side) and action (on the output side)' (Wilson and Clark: 2009: 56). In such internalist models, 'the mind is a kind of sandwich, and cognition is the filling' (Hurley 1998: 401; see Wilson and Clark 2009: 56). In challenging views such as these, Clark distinguishes between 'brainbound' models of mind in which thought

is 'essentially inner and ... neurally realized' (2008: xxvii) and so-called 'Extended' models, which he favors. These latter approaches posit that human thought includes 'inextricable tangles of feedback, feed-forward, and feed-around loops: loops that promiscuously criss-cross the boundaries of brain, body, and world' (2008: xxviii).

Cognitive states and processes can be distributed across non-biological as well as biological realms. The human brain might be insulated from external hazards by the cranium, but as Matthew Day has argued, 'there is no prima facie reason to suppose that all of the relevant computational machinery responsible for human thought is similarly shielded' (2004: 104–5). Uniquely incomplete biological machines, 'embodied human minds operate in and spread across a vast and uneven world of things – artifacts, technologies, and institutions which they have collectively constructed and maintained through cultural and individual histories' (Sutton 2007: 14).

The closely related field of Distributed Cognition has been described as 'the study of the variety and subtlety of coordination': this model asks how 'the elements and components in a distributed system – people, tools, forms, equipment, maps ... can be coordinated well enough to allow the system to accomplish its tasks' (Kirsh 2006: 258). This interdisciplinary area of inquiry arose from work in the sciences and social sciences, including systems theory (Von Bertalanffy 1969), workplace studies (Suchman 2007), anthropology (Hutchins 1995), educational theory (Lave 1988), and the cognitive sciences more widely (Kirsh 1995). Like Extended Mind theory, Distributed Cognition 'extends the reach of what is considered *cognitive* beyond the individual to encompass interactions between people and with resources and materials in the environment' (Hollan *et al.* 2000: 175). That is, whilst traditional models of cognition 'look for cognitive events in the manipulation of symbols inside individual actors, distributed cognition looks for a broader class of cognitive events and does not expect all such events to be encompassed by the skin or skull of an individual' (Hollan *et al.* 2000: 176).

A key example of such a project is Hutchins's *Cognition in the Wild* (1995), a cross-cultural ethnographic/anthropologic study of naval navigation that examines naturally situated cognition. In comparative studies of celestial navigation among Micronesian Islanders, early modern European navigators using tools such as the astrolabe, and modern crews on a US Navy frigate, Hutchins argues that the lines between 'inside' and 'outside' are frequently misdrawn or misidentified, 'creat[ing] the impression that individual minds operate in isolation and encourag[ing] us to mistake the properties of complex sociocultural

systems for the properties of individual minds' (1995: 355). Similarly, a study of cognitive processes in an airplane cockpit reveals that 'memory involves a rich interaction between internal processes, the manipulation of objects, and the traffic ... [a] complete theory of individual memory by itself is insufficient to understand how this memory system works' (Hollan *et al.* 2000: 176). These models, then, require that traditional boundaries among individual, object, environment, and the social world be redrawn.

Because they are tethered to culture, such models of cognition have historical purchase. To study cognition through a distributed/extended framework is not to commit ourselves to a brain-bound, ahistorical account of the human mind; we do not claim that attention to cognition must or should result in a universalizing theory that erases historical and cultural difference. If human thought is embedded and extended into the world, it is by definition historically situated.

Thus we propose what Sutton has termed a 'historical cognitive science' (1998: 10–12). The model we propose retains its historical purchase while at the same time offering a reading of early modern culture that takes account of the vital importance of attending to human cognitive mechanisms. In this account, cognition is distributed across a coordinated yet shifting and uneven triad of insides, objects, and people: internal neurobiological mechanisms that constrain and enable such processes as memory, perception, and attention; material tools ('cognitive artifacts') and environments; and social systems. These are mobile and permeable categories; boundaries between mind and world are not fixed but are in flux and subject to negotiation and change at particular historical periods. For example, changes in the nature of cognitive artifacts may directly alter available possibilities for feeling, thinking, and remembering.⁴ Shifting social systems may spread the cognitive burdens differently across brain, body, and world. Each of these elements must be seen as part of a dynamic and historically situated system.

Cultural history and cognitive history

This model also stands to contribute to the increasingly important, yet methodologically diverse, field of cultural history. Peter Burke has likened attempting to write cultural history to 'trying to catch a cloud in a butterfly net' (2004: 114). Cultural history has become a sprawling, amorphous field of heterogeneous inquiry with few agreed theoretical or methodological landmarks to guide historians. Whilst the 'cultural turn' has undoubtedly served to broaden and deepen interpretations of

history, historians are increasingly asking ‘where next?’ (Bonnell *et al.* 1999). In offering a model of cognitive cultural history, we hope not simply to add new categories to the field, but instead to provide a degree of theoretical and methodological precision to cultural historians and to open up new lines of historical enquiry. Cultural history has always been concerned with exploring the myriad ways in which human beings construct the world around them, seeking to peer through the evidential remains of symbolic systems, social, cultural and material practice to glimpse the underlying conceptual frameworks, beliefs and myths of the human mind. To this end, historians have adopted the Hegelian *Zeitgeist*, Emile Durkheim’s science of society, Freudian or post-Freudian psychoanalysis, cultural Marxism, and Saussurian semiotics amongst other perspectives (Green 2007).

The most ambitious, programmatic endeavour of cultural historians to explore human subjectivity was launched by the *Annalistes*. From Marc Bloch and Lucien Febvre through Fernand Braudel, Pierre Chaunu and Georges Duby to Emmanuel Le Roy Ladurie and Philippe Ariès, the *Annales* school looked to uncover the mental structures through which human perceptions were conveyed – rituals, customs, imagery and linguistic patterns – and embraced the approaches of cognate disciplines – anthropology, sociology, psychology, geography and linguistics – to this end (Clark 1999; Burguière 2009). The *Annalistes’* brand of cultural history, the history of *mentalités*, sought to identify subsumed mental thought patterns and underlying structures of belief, borrowing the terminology of ‘collective consciousness’ from Durkheim and the language of the subconscious from Freud (Megill 2004).

The *Annales* school came in for sustained criticism, mostly from Anglo-American quarters and much of it justified, for never fully formulating a theory of *mentalités* or explaining how social agents’ categories of thought became internalized, of a tendency towards reification and cultural stasis, over-emphasizing consensus and failing to account for dissent and change, and of neglecting the impact of social and economic factors on belief systems.⁵ The current generation of *Annales* historians, led by Roger Chartier, has largely abandoned the history of *mentalités*. Chartier concurred with critics that *mentalités* failed to account for the reasons or modalities for change from one system to another, renouncing the project of total history in order to avoid ‘deterministic reduction in grasping the relation between systems of belief, values and representations and social affiliations’ (Chartier 1988: 36). In perhaps the most trenchant critique of the history of *mentalités*, the classicist and ancient historian G. E. R. Lloyd challenged the legitimacy

of the notion of a collective mentality: 'Collectivities do not think, only individuals do' (1990: 5). Superficially straightforward as Lloyd's bald assertion is, it sidesteps the crucial question of precisely how these supposed boundaries are to be policed, as we shall show below.

The witchcraft historian Malcolm Gaskill has suggested that historians of *mentalités* should now 'be concerned with dynamic connections between perception, cognition, motivation and action: what people saw, thought, wanted and did' (2000: 8). Gaskill's use of models drawn from anthropology usefully emphasizes the interplay between cognition and culture, but methodological questions remain. Some historians, particularly those interested in the social politics of culture, have long been influenced by the work of the French sociologist Pierre Bourdieu (1984, 1977) and his interpretation of culture as improvised and adaptive practice rather than acquired rules and meanings. Bourdieu introduced the notion of the *habitus*, systems of dispositions deriving from collective socialization from childhood onwards resulting in an embodied sensibility. Yet whilst Bourdieu's *habitus* – unconscious knowledge widely shared and automatically learned – is a powerful model, like *mentalités*, it fails to account for both deliberate action and historical change. As Claudia Strauss and Naomi Quinn have suggested, Bourdieu's theory tends to posit a centripetal model that would emphasize stasis and continuity, but tends to neglect 'centrifugal effects such as change over time' (1997: 46). Moreover the model tends to treat agency as 'epiphenomenal,' neglecting 'the role of motivation and emotion as forces for either reproduction and uniformity or diversity and change, as well as the role of deliberate instruction' (1997: 47). Embodiment is a central aspect of the *habitus*, but its essence remains elusive. Indeed our historical test case – the English Reformation – can be seen in part as a deliberate set of experiments in epistemic engineering, and thus demands an account of human action that attends to the interplay of cognitive mechanisms, environment and space, and social systems. Such a perspective cannot be provided solely through an account of social construction.

Religious historians can, we believe, particularly benefit from engagement with scholars working in the field of the cognitive science of religion, many of whom are sympathetic to Extended Mind theory. This field has developed in the last two decades, drawing on cognitive science, anthropology, evolutionary biology, psychology, neuroscience, artificial intelligence and other disciplines to answer the question – 'Why is religion the way it is?' (Boyer 2001; Barrett 2004; Martin 2007). Their answer, broadly, is that humans have the religions they have

because they have the minds that they have. While some researchers in this field argue that there is an 'evolved adaptation' for religion *per se* (e.g. Bering 2006), others suggest that religious concepts and beliefs are by-products of ordinary cognitive processes (e.g. Boyer 1994, 2001; see also Pyysiäinen and Hauser 2009). Thus far anthropologists and theologians have shown more interest in this field than historians, although there are signs that this is beginning to change.⁶ Luther H. Martin has suggested that historians and cognitive scientists share a view of historical thinking as a natural form of human cognition; it is memories of things said and done that enable humans to have a history. The history of representations of supernatural agents, and those ideas and practices legitimated by claims to their authority, joins other material explanations for histories of religion including social, geopolitical or economic forces. Approaches based on cognitive theorizing can supplement current historical methods, in particular by providing insights into 'how and why some representations of historical occurrences emerged, were selected for, and remembered but not others that may have been culturally, historically, or cognitively possible' (Martin 2007: 52). We engage directly with this line of scholarship in Chapter 5.

Cognitive ecology, distributed cognition, and memory studies

As a key mechanism linking individuals, societies and material culture, memory offers a compelling framework through which to develop a cognitive history. We thus situate our research within a range of recent efforts to bridge disciplinary divides, variously construed as between the individual and the social/collective or between cognition/culture. Such binaries are in part the result of an internalist model of thought that depends upon rigid boundaries between inner and outer, positing, for example, culture or society as something 'out there,' firmly distinct from internal cognitive mechanisms. Yet such views are increasingly being challenged, both within and without the cognitive sciences, which is itself a loosely organized interdisciplinary area of inquiry that in some areas is increasingly oriented to the social and material. As Andrea Bender, Hutchins, and Douglas Medin argue, the cognitive sciences have too long treated culture as a kind of 'independent variable' that might be included in cognitive analysis when convenient; on the contrary, they claim, its integration is 'essential for the future health of the cognitive sciences' (Bender *et al.* 2010: 6). The cognitive sociologist Karen Cerulo has affirmed this necessity. She argues that

an information-processing model of cognition does not account for its ubiquitous shaping by culture:

cognitive scientists carefully analyze attention systems of the brain, exploring both the conscious and unconscious of the process. Researchers chart the specific areas of the brain involved in attention; they document the brain's ability to attend simultaneously to multiple stimuli, to shift attention, or habituate to stimuli. Such studies are undeniably important. Yet they tell us little about broader, socioculturally based patterns of attending.

(2002: 2)

Similarly a recent position paper by Joseph Henrich *et al.* has challenged cognitive psychologists to see the historically and culturally situated nature of some so-called cognitive universals (2010). As we will show, studying the epistemic engineering of the Reformers requires that we understand the complex cognitive mechanisms underpinning attention, perception, and memory as well as the historical and cultural shaping of attention and memory.

To do so we need a multi-disciplinary approach to memory. Jeffrey Olick has written that 'actual cross disciplinary research ... has been much rarer than affirmations about its necessity and desirability (2008: 27). Citing Olick's comment, Sutton *et. al.* suggest that 'memory researchers are unusually aware that uneasy faultlines and glaring gulfs lie in the uncertain zones between them' (2010: 209). A vast number of practices and concepts are often grouped together under the larger rubric of 'memory studies.' Whilst the multidisciplinary nature of the inquiry lends the field vibrancy, 'the bewildering diversity of uses of the term may lead to miscommunication and frustration' (Roediger and Wertsch 2008: 9). However far apart they are in many ways, cognitive psychologists studying the constraints and biases of memory and cultural historians exploring memory as an expression of the remembered past have a modicum of common ground. Both identify memory as central to conceptions of self and indispensable to identity, and recognize that remembering is not a passive, recording process but an active and selective one. The work of early pioneers of memory studies – Richard Semon (Semon 1921; see also Schacter 2001), who developed the idea of the 'engram'; psychologist Frederick Bartlett (1932), whose experiments led him to conclude that memory was an active and selective process based on cultural understanding; and the sociologist Maurice Halbwachs (1992) who argued for the social constitution of memory – are still proving influential, with a resurgence of interest in

particular in Halbwachs' work. Whilst skeptics continue to regard the field as inhospitable to the techniques and resources of historians, an increasing number of historians are establishing memory studies as another domain of socially constructed representations of the past. An appreciation of the operation of mnemonics within a material and social context is reaping especially fruitful rewards, whilst memory studies has also fed into debates about orality, literacy and print culture and the forms in which memory is historicized. A number of fundamental questions remain controversial, in particular the relationship between individual consciousness and social memory, the relationship between the dominant social memory and dissenting individual and group memories, and whether or not commemoration is distinct from memory.

This diversity is particularly apparent in the gulf between humanist understandings of memory and those of cognitive psychologists, so much so that we may ask whether 'memory studies' can offer any true conceptual precision. To a psychologist, memory may look like an internal or individual process; to a cultural historian, it may look like a purely social phenomenon. This gap is reflected in the scholarly literature, in which it is relatively rare for psychologists to allude to the vast array of work on cultural and social memory, and for humanists to take account of the enormous literature on cognitive psychology.

On the one hand, cognitive psychologists generally have tended to treat memory as something happening 'inside the head,' and attempted in their experimental designs to control for contaminating elements. This tendency towards 'methodological individualism' (Hirst and Manier 2008: 185) has limited attempts to address social or collective aspects of memory: 'For most psychologists, the social nature of collective memories and the critical role society plays in forming and maintaining them puts their study beyond the[ir] purview' (Coman *et al.* 2009: 126). David Middleton and Steven Brown (2005) have deplored 'the tendency [in cognitive psychology] to refer all processes involved in remembering back to the inner works of the individual, more or less rational, psychological subject' (5). Moreover, such studies are often conducted in artificial settings that deliberately strip the environment of the normal social and material cues that structure memory, thus isolating subjects 'from the everyday social ecology in which remembering occurs' (5).

Yet the psychological study of social remembering has gained considerable ground in the past decades. The work of Ulrich Neisser (1982, 1997) on memory in its 'natural setting' was a major step in expanding the ambit of memory studies within psychology. Harry Heft's work on ecological psychology posits that cognition is 'a process of discovering environmental structure rather than of imposing mental structure on

the everyday world' (2001: 332). Other studies include work on the role of conversation in social remembering (Hirst and Manier 2008), and the influence of maternal reminiscing styles upon the development of children's autobiographical memories (Reese 2002).

In addition, new research on transactive memory has suggested that memory may be distributed across smaller groups in which remembering takes place collaboratively (Barnier *et al.* 2008; Harris *et al.* 2008), with interaction among members of an established group facilitating recall and performance. Despite the dominance of the intra-cranial model of memory in cognitive psychology, then, newer work in this field has shown the fluidity of boundaries between mind and world.

William Hirst and David Manier suggest that a systems approach to collective memories can locate them 'in the interaction between what is out in the world and what is in the head' (189). Thus a study of these memories 'involves at least two components':

- (1) the exploration of the design of the mnemonic or social resources, practices, or tools – that is, what is in the world – and (2) the effectiveness of these instrumentalities, which would include biological constraints on mnemonic practices and resources. (189)

They argue that one aspect of such research – that undertaken primarily by historians and social scientists interested in memory studies – is the focus on the following "design processes" ... the means by which sites of memory, mnemonic tools, or mnemonic practices are constructed, appropriated or, more generally, come into being, and how they are subsequently used as means of shaping and reshaping memory' (189). Such research is widely undertaken under the aegis of memory studies, especially in the vast literature on commemorative practices. Yet Hirst and Manier object that these studies tend to place 'little emphasis ... on the person who is "consuming" a mnemonic resource or "performing" a memory practice' (191); likewise Aaron Beim suggests that 'collective memory analyses conflate the production of the object and its reception' (2007: 7). A study of the reception of such design processes involves investigating 'the transmission of a memory across a group, the *convergence* of the memories of this community on a single rendering, and the *stability* of this rendering for the community' (Hirst and Manier 2008: 192). Similarly, James Wertsch has suggested that 'a "distributed version" of collective memory' might avoid what he describes as 'questionable assumptions about the memory of the group ... From this perspective, memory is viewed as being distributed: (a) socially in small

group interaction, as well as (b) “instrumentally” in the sense that it involves both active agents and instruments that mediate remembering’ (Wertsch 2009: 119; see also Wertsch 2002).

As promising as these steps are, Middleton and Brown suggest that ‘simply turning towards the social – while a necessary first step – does not solve the problem’ (2005: 6). Affirming Maurice Bloch’s concern that most psychologists ‘fail to understand that culture and history are not just something created by people but that they are, to a certain extent, that which creates persons’ (1998: 69), Middleton and Brown argue that retaining an ‘overly firm distinction between the “inner world” of the cognitive system and the “outside world” reached via human perception’ results in something akin to Hurley’s ‘classical sandwich’ described earlier: an input-output model that focuses attention on ‘how the external world becomes represented and encoded in the cognitive system’ (2005: 24). Nevertheless this growing body of research is evidence that some branches of psychology are exploring cultural and historical aspects of memory in ways that may well intersect with the interest of humanists, and the groundwork has been laid for a genuinely interdisciplinary study of memory (Sutton 2004).

However, in the field of memory studies as it is often construed within the humanities, it is relatively rare for research in cognitive psychology to inform the ways that memory is defined and discussed. For example, Anne Whitehead’s recent *precis* of memory theories in the Routledge New Critical Idiom series (2009) neglects psychological research almost entirely, focusing instead upon the rich philosophical tradition of memory studies. Crucially, models of ‘social’ or ‘collective’ memory do not always concern themselves with the precise cognitive mechanisms that might link individual and social memory; as Hirst and Manier and Beim suggest, the gap between object and reception is often wide. Peter Burke’s famous statement about the distinction between history and memory attempts to bridge this divide: ‘Individuals remember, in the literal, physical sense. However it is social groups which determine what is “memorable” and also how it will be remembered’ (2004: 98). This is a powerful model that has led historians and others to a more fluid and particular view of the relationship between public/documentary history and the past as it is recalled and interpreted by particular social groups. But is this model sufficient, or does it simply involve a kind of truce, in which each discipline divides up the field of inquiry into individual and social realms?

The Extended Mind/Distributed Cognition model offers a way to bridge the gap between these apparently widely divergent ways of understanding memory. These theories allow us to see that the work

of memory cannot be located in individuals, objects, or social systems alone. Extended Mind theory offers the possibility of negotiating between individualistic and collectivist approaches; as Rob Wilson suggests, 'From individualistic approaches, [philosophers of the Extended Mind] accept that remembering is an activity that is done by individuals, and from collectivist approaches they take the idea that this activity is not bounded by what goes on in the head of the individual, and so encompasses commemorative objects and practices, mnemonic devices and strategies, external symbols and structures' (Wilson 2005: 231–2). As Wilson construes it, then, Extended Mind theory has the capacity to generate a 'more integrative treatment of memory ... that bypasses the choice between individualistic minds and social activities' (233). This conceptualization extends Peter Burke's original formulation by taking the *nexus* between the two elements as key. Such formulations have promise for investigating the unequal and shifting relationships among these elements, particularly as they might be manifested at different historical periods.

As a lens through which to view this operation of cognitive mechanisms, objects and social systems in past societies, we offer a model of *cognitive ecology*. A model of cognitive ecology posits that a complex human activity such as religion must be understood across the entire system. Hutchins describes cognitive ecology as 'the study of cognitive phenomena in context. In particular, it points to the web of mutual dependence among the elements of a cognitive ecosystem' (2010: 1). More provocatively, he claims that 'when we approach the question of the history of mind, the unit of analysis for mind must be the cultural/cognitive ecosystem' (3). Hutchins traces the concept of cognitive ecology through three threads of influence: Gregory Bateson's *Steps to an Ecology of Mind* (1972); J. J. Gibson's *The Ecological Approach to Visual Perception* (1979); and activity theory, primarily as developed by Lev Vygotsky (1978). All three of these models challenged conventional notions of cognitive boundaries and modeled the individual subject within a dynamic environment constituted by social, artifactual, and internal mechanisms. Cognitive ecologies are always dynamic – as one element changes, others may take up the slack, so to speak. A model of cognitive ecology would predict that some systems will place more or less weight on internal mechanisms, on central control, or on particular forms of cognitive artifacts and social systems. Studying such a complex phenomena as early modern memory demands that we attend to all elements of the cognitive ecology. These include internal constraints on memory, perception and attention, or the biological resources that

govern our encounters with the world; the means by which the material and social environment is rebuilt; and the mechanisms linking these complex acts of niche construction.

By choosing to focus upon an era in which (a) cognitive ecologies were undergoing rapid change, and (b) that change was characterized by vigorous debates about the proper articulation between internal resources and external supports, we test some of the premises of this theory. While historians and humanists are often eager to acknowledge the social shaping of historical action, they are less likely to see the need for an account of cognitive mechanisms. In contrast, our model demands an account of such mechanisms as they operate within a dynamic environment. As will be discussed in Chapter 3 on 'Sacred Space,' for example, performing the cognitively costly task of remembering a sermon demanded a new economy of attention involving changes in ecclesiastical architecture and furniture, newly enforced codes of civility in the church, the writing of sermons in memorable form, and social and familial rehearsal of the sermon after the service. Or consider what might seem to be a more straightforward example: the memorization of a passage of verse. Even in this case, the work of memory is distributed across the act of producing the text in memorable forms and the techniques devised for committing it to memory, which may include a variety of mnemotechnical strategies, including vocalization, mapping the material onto the hand (Sherman 2000), visualization, and writing. Moreover, such strategies are historically constrained, depending upon the nature of the dominant 'remembrance environment' (Zerubavel 1997), the value a particular culture or subculture places upon certain ways of remembering and the dominant strategies and technologies used to scaffold memory. An ecological approach such as this has the capacity to bridge the divide between individual, psychologically situated accounts of memory, which tend to view cultural and social elements as 'interference,' and culturally oriented accounts, which privilege the social but often have an attenuated account of the internal mechanisms underlying memory.

An ecologically-oriented model of memory studies can work across historic and contemporary issues. Moreover, it does not pre-determine the boundaries of cognition; we need not parcel out in advance thought into 'internal' or 'external,' 'cognitive' or 'cultural,' 'individual' or 'social.' Rather, we must be mindful that remembering involves the 'interaction and coordination of memory-related processes at many different levels and timescales: neural, cognitive, affective, bodily, social, material, and cultural' (Sutton *et al.* 2010: 210). We know, for instance,

that the social value placed on memory varies enormously across cultures, and that memory has co-evolved with artifacts, spaces, and technologies, and social systems. In the cognitive ecology of the pre-modern period, remembering is not viewed as a burden to be sloughed off whenever possible, but to be nurtured and disciplined through ‘culturally sculpted internal surrogates’ (Sutton 2010a: 213) such as the memory arts. In contrast, in contemporary society the super-abundance of cognitive tools and devices profoundly shapes our own ‘new memory ecology’ (Brown and Hoskins 2010: 94), resulting in a recursive cycle of the ‘mediatization of memory’ (95). Employing and modifying Bartlett’s schema theory (1932), Brown and Hoskins argue that the ubiquity of media ‘draws our attention to the mediation of memory through frameworks or forms that are at once individual and collective, personal and cultural, informal and formal’ (94). Similarly, José van Dijck attempts to ‘theorize the *mutual shaping* of memory and media’ (Van Dijck 2007: 2, emphasis original; see also Draaisma 2000). Changes in one element of the ecology – for example, changes in the nature of social space, or the ready availability of exographic resources – will always reshape the wider system.

The English Reformation: a test case for the model of cognitive ecology

The English Reformation is a particularly apt test case for such a model. The historiography of this period is a vigorous and contentious arena. From the mid-1980s, Jack Scarisbrick (1984), Christopher Haigh (1993) and Eamon Duffy (1992) amongst others mounted vigorous challenges to the rationalist model of the Reformation, as originally proffered by Arthur Dickens. Scarisbrick argued that the vast majority of English people were content with traditional Catholic religion on the eve of the Reformation. By demonstrating the vitality of late medieval piety, Duffy painted a picture of an active and vigorous Catholic church destroyed by a coterie of top-down, politically motivated Reformers whose mindset was not shared by the vast majority of the population. Haigh’s model of ‘English reformations’ posited that the Reformation did not truly take hold until a generation had passed and the new practices of the Reformers had become familiar, comfortable, and routine.⁷ Much of the revisionist position has been incorporated into recent work, which might be described as revisionism versus post-revisionism; in fact studies of particular regions have revealed that the two views may not be as incompatible as they seem, depending upon the exact locale

of investigation, since the take-up of Reformation ideas was profoundly influenced by local conditions.⁸

Historians' attention has moved on from arguments about the pace and degree of religious change, and, to some extent, away from minority or dissident groups and on to the 'ordinary worshiper.' Our study chimes with this current emphasis. The events of the Reformation in England are particularly well suited for the approach we are taking. Reformers actively worked to shape new cognitive ecologies. The impulse to redraw boundaries among internal cognitive capacities, external supports for worship, and modes of sociability was fundamental to Reforming practice and theory. The reform of external supports for worship – images and objects – is perhaps the best-known thread of this narrative. But as we shall show, reformers had designs on the internal capacities of the worshipers. The words of the famous theologian William Perkins perhaps encapsulate this programmatic aim most clearly: 'And that good obedience may be performed to euery commandement of God, faith works two things in vs, memorie [and] attention' (1607: 18). The twin capacities of memory and attention underpin most of the Reforming project and become the driving forces in the restructuring of the cognitive ecology of religion in the period. To reform these capacities was an act of 'environmental engineering,' which is always, as Clark (2008: xxviii) reminds us 'also self-engineering.'

One of the features making the English Reformation such a fruitful case study for this approach is the intense emphasis upon practices and apparatus that marks religious controversy in this period. Historians have often noted that religious controversy in the English church is rarely centered on doctrinal issues; instead the most heated debates are about vestments, rituals, gestures, the material apparatus of worship, and other so-called 'indifferent' factors or *adiaphora*. The Vestments Controversy, or Vestiarian Crisis, is the most well-known of these debates; sparked off by the Henrician exile John Hooper under Edward VI, the dispute extended into the Elizabethan period and came to encapsulate rival visions of English Protestant identity. In the seventeenth century, disputes over the positioning of the communion table and the correct posture in which to receive the Eucharist similarly prompted much contention and spilling of ink. Whilst there were undoubtedly theological differences underlying this dissension, those differences can only provide a partial explanation.

Extended Mind theory has the capacity to shed light on this seeming paradox because a distributed/extended approach would anticipate that the most emotive issues would be those that relate to ordinary

human interactions, gestures, objects, and social affiliation. The power of habit, or embodied memory, and the attention paid to all aspects of religious worship within the cognitive ecology constructed by those habits, would magnify the disruptive effect of any changes, however superficially minor. Day has argued that examining religious history through the lens of doctrine has blinded us to the more pressing question: 'Why do religions have the considerable material culture that they do?' Rejecting internalist accounts of the mind and embracing Hutchins's account of distributed cognition, Day argues that 'we can no longer afford to treat religion as an exclusively "interior" cognitive phenomenon' (Day 2004: 113). Day cites Stephen Mithen's book *The Prehistory of the Mind*, in which Mithen argues that religious material cultures 'serve to anchor the religious ideas – the conceptual spaces – into human minds. Without such anchors, the ideas would dissipate as they have no natural home within the mind.' Thus for Day the material elements of religion – construed broadly to include not just objects but rituals, music, and the material and social surround – should not be considered 'thin cultural "wrap arounds" that dress-up the real cognitive processes going on underneath'; instead 'they begin to look like central components of the relevant machinery of religious thought' (116). That is, material culture is intrinsic to and constitutive of religion, not merely adjunct to it. Late medieval Catholics *thought with* a different set of objects, artifacts, and social surrounds than Protestants did. Rather than imagining the two religions as possessing an essential internal doctrinal identity supported by various material props, we should instead imagine both as extended systems, distributed across the believer/practitioner and an array of material and social practices.

The long English Reformation represents one historical test case of the unevenly distributed triad of insides, objects, and people – in disrupting a medieval religious system in which objects and images played a central role, how is a new cognitive ecology suspicious of such artifacts to be formed and maintained? If certain objects and practices are to be construed as inimical to the proper development of attention and memory, what new distributed practices are to be put in their place? In posing the questions in this way, we are following the lead of, among others, William Dyrness, who argues that the shift from medieval devotional practices to those of the Reformation is not 'simply an inner appropriation of spiritual reality over against the external piety of the medieval period,' but instead shows the way that some Reformers sought to 'actively dismantle that world and to reconstruct it with different materials' (2004: 18).

Overview of chapters

We develop this argument over a series of four chapters, before taking up a different perspective in the conclusion. In Chapter 2, 'Attention, Coordination and Memory in Pious Practice: Prayer and Catechism,' we explore one of the key debates in the 'epistemic engineering' that constituted the Reformation in an English context: how to inculcate principles of the communal faith without undue reliance upon rote rehearsal. The key elements that we discuss include the controversy over set forms, prayers, and gestures in worship, and the strategies for transmitting doctrine through the catechism. In both cases tensions are evident between the desire to establish a baseline of religious knowledge and communal practice and the specter of falling into the purportedly Papist practice of mindless repetition. These debates lead to a testing of the nature of memory, identity, and external supports, as the boundaries between mind, body, and world are relentlessly questioned.

Chapter 3, 'Sacred Space: The Reconfiguring of Cognitive Ecologies in the Parish Church,' builds upon this foundation. One of the indispensable elements in any cognitive ecology is the spatial environment within which it operates. These environments help configure the form of religious worship, directing the attention of worshipers and providing physical shape to the construction and transmission of religious forms. In this chapter we examine the rituals, liturgy, architecture and material of early modern Protestantism, and more briefly Catholicism, in order to deepen our current understanding of how English people experienced worship in this period. Taking up the work of Clark, Day and others, we examine prescribed ritual practices, forms of behaviour and dress, interaction between priest and parishioner, and the construction and use of sacred space as external scaffolding to the cognitive experience, to explore ways in which worship was (partially) constructed and affected by the physical and material environment and how a distributed model of cognition can help illuminate these spiritual experiences and the role of memory within them.

In Chapter 4, 'Cognitive Ecologies and Group Identity: Print and Song,' we look explicitly at social memory in relatively small sub-groups, following methods recently developed in the psychological sciences for the study of collective remembering. We argue that distributed approaches to cognition offer a way of getting at the mechanisms that link individual minds to collective memory practices, a connection that is often unspecified or glossed over in discussions of social memory. This chapter begins with a critique of the most common set of arguments about the

relationship of cognition and the Protestant Reformation: those that privilege the role of print. By examining the way the Bible is construed and discussed in John Foxe's accounts of small communities of martyrs linked by shared interpretive practices and material artifacts, we show that print-centric views of the Reformation miss the crucial element of social distribution. We conclude this chapter with an examination of the intriguing history of psalm singing in the English Reformation, in which social, affective, and material bonds produced a form of singing quite at odds with elite top-down practices and virtually independent of print.

In Chapter 5, 'Models of Mind and Memory in the Cognition of Religion: A Case Study in Early Quakerism' we take a fresh look at the origins and early development of the most radical and successful religious sect to emerge during the British Civil Wars and survive the Restoration to grow into a global denomination – the Quakers or Religious Society of Friends. We do so by utilizing one of the most influential models within current cognitive science of religion, the 'modes of religiosity' thesis advanced by the anthropologist Harvey Whitehouse. Whitehouse set in motion a key set of debates about the role of memory in religion, constructing a testable theory of how religions are created, passed on, and changed, based upon a distinction between imagistic and doctrinal religious forms. Whitehouse's theory suggests religions tend to coalesce around one of these two poles depending primarily on the manner in which religious behavior is constituted and remembered. We will evaluate ritual practices and gesture in worship, religious experience as socially embedded, sacramental forms and anti-externalist thinking, group identity and regulation, and the codification, memorization and transmission of religious ideas, and suggest ways in which Whitehouse's model can be further refined to help historians.

In the conclusion, 'Education Systems and Mnemonic Priorities,' we expand the ambit of the study through a broad overview of memory in the early modern period, especially as it was played out in challenges to the linguistically-based humanist grammar school tradition. In a series of deliberate attempts at epistemic engineering, a range of writers around Samuel Hartlib began to reconceptualize the faculty of memory entirely. Inspired by Francis Bacon and Johann Comenius, their educational proposals required an increasingly elaborate array of external tools and artifacts. The endpoint of this history is John Locke's *Some Thoughts Concerning Education*, which repudiates linguistic models of memory almost entirely, questioning the humanist storehouse model of human cognition and memory and proposing in its stead a model based upon sensory perception. The book thus concludes by tracing an historical shift in cognitive practices, a re-alignment of the relationships among insides, objects, and people.

2

Attention, Coordination and Memory in Pious Practice: Prayer and Catechism

This chapter takes up a central issue for Reforming practice: how to align external public practices and institutions with the experiences of the individual believer. Taken to its extreme, Reforming practice sought to make religious experience as online as possible – ideally it was to be affective, here-and-now, and spontaneously experienced, rather than off-line, off-loaded onto the environment, or governed by mere habit or routine. As we shall see, Protestant rhetoric charged Catholic practice with a kind of mindlessness, substituting inert practices and external compliance for genuine spiritual engagement. Rote memorization and recitation, as well as mere imitation of set gestures and bodily movements were seen as inimical to true spiritual experience. Mere verbal memorization of devotional material was not sufficient for the lay believer, who was instead charged to engage with the ‘lively word’ of God, preached and written. English Protestant Reformers attempted to establish a new cognitive ecology based upon reordering of mnemonic and attentional priorities. This chapter traces this rebuilding project through an examination of the new divisions of the distribution of cognitive tasks among individual worshiper, priest, and the social and material surround. We take up the revisions to the Protestant Prayer Book, which were designed to combat this mindlessness of Catholic practice, but which were also themselves subject to vigorous critique in the controversies over ‘set forms’ of prayer. We conclude the chapter with an examination of the Protestant practice of catechizing, which begins as an attempt to inculcate basic knowledge of the faith, but also risks replicating some of the very habits of mindless repetition that were the original target of reform.

Medieval pious practice

While attempts to differentiate medieval from early modern modes of thought are notoriously fraught, we will begin this section with a brief sketch of the cognitive ecology of late medieval England, with particular emphasis upon the modes of attention, coordination, and memory demanded by pious practice. Although Reforming polemic about mindless Catholic repetition was just that, it is nevertheless clear that the nature of demands on memory and attention were differently construed. In late medieval piety, material was structured to make the most of the limitations and capabilities of human memory. That is, devotional material meant to be recalled from memory could be adapted to the needs of the remembering subject and shaped in such a way as to make the best use of the biological constraints of human memory. Memory is pattern-hungry and works best when the constraints upon the material to be kept in memory match up with the biological constraints of the brain.

The cognitive psychologist David Rubin has written at length about such constraints; in *Memory in Oral Traditions*, he documents the ways that these constraints facilitate recall. Among the features that facilitate recall are imagery – ‘one of our most powerful mnemonic aids’ (1995: 62) – and repetition of all sorts, including rhyme, alliteration and assonance. As Rubin writes, ‘the repetition of a sound is an aid to memory. When a sound repeats, the first occurrence of the sound limits the choices of a second occurrence and provides a strong cue for it’ (75). Rhyme in particular facilitates rapid recall, and aids organization. Rhythm similarly aids memory, by ‘cuing and limiting the choice of both words and larger units’ (85) and by facilitating social coordination of group action (86). Combining such constraints increases stability of recall; when placed together, ‘recall may involve much less of a thought process and much more of a pattern-recognition device’ (120). In strongly residual oral transmission, recall will be serial in nature, starting at the first word and proceeding from there. Thus in Rubin’s account, the ‘selective pressures’ on remembering tend to produce material that is ordered and balanced, that is rhythmic and rhymed, and that is ‘chunked’ into smaller parcels for easy recall.

Late medieval lay piety was organized to maximize the constraints and capacities of the human mind, particularly its eagerness to annex exterior forms and to create extended cognitive architectures. Many of the important devotional practices of the late medieval Catholic Church were designed according to these principles. For example, much

material to be kept in memory was ordered according to the principle that memory can easily handle objects in groups of about seven. Indeed, the Catholic Church had a whole array of what John Bossy (1988) and Margaret Aston (1984) term septenary classifications, including the Seven Deadly Sins, the Seven cardinal virtues, the seven sacraments, and so on. This organization of material is mnemonically adaptive, but for Protestants such systems prioritized human memory at the expense of fidelity to a text-based system of worship that might or might not come in mnemonically adaptive chunks. The Seven Deadly Sins are easy to remember since the number is manageable – the order can be arranged mnemonically, the Sins can be tied to striking visual imagery that is easily retained in memory – and the septenary structure is reinforced by the cognate mnemonic schemes, with the basic septenary structure underwriting a range of devotional materials. However, the Sins have the decided disadvantage (for Protestants) of being extra-scriptural. Bossy and Aston have described the gradual ascension of the Decalogue over the Seven Deadly Sins, with the Decalogue increasingly becoming the focus of Protestant didactic practice. The commandments are not nearly as mnemonically adaptive as the Seven Deadly Sins, especially if the long Second Commandment is to be recalled in its entirety. Keeping these commandments in memory required high levels of institutional scaffolding, from repetition in the service itself, the painting of the Decalogue on church walls, and, most importantly, the extended practice of catechizing, to be discussed below. In other words, a new array of mnemonic mechanisms needed to be put in place to ensure that the doctrine was kept in memory.

The late fifteenth century commonplace book of Robert Reynes, edited by Cameron Louis, provides some illuminating illustrations of the nature of septenary classifications, as well as the relative indifference to the exact textual fidelity. A category which Louis describes as ‘Religious Enumerations’ includes the following items, usually in both Latin and English: *Septem Mortalia Peccata*; *Septem Opera Misericordii*; *Septem Virtutes Principales*; *Septem Sacramental Ecclesiae*. These are generally fairly brief and easy-to-recite lists, each ‘packet’ of information reinforcing the other through the repetition of a shared septenary structure. But the Decalogue is somewhat different:

Dectem Precepta

The ffirst is: Wurchep God aboue all thyng.

The secunde is: Take not His name in idylnesse

The iii is Halwe truly thy holyday

The iiiite is: Wurchep pi ffader and moder bodely and gostly
 The vte is Sle no man with thy tounge
 The viite is: Do no lechery out of wedlock
 The viiite is: Stele nothyng.
 The ixte is: Bere no fals wytnesse
 The xte is: [th]y schal not covete [th]i neybouris hows,
 his wyff ner his seruant etc.

(Reynes *et al.* 1980: 62, f.35r)

Three things are noteworthy here. First, the vernacular translations of the commandments are brief and pithy and are constructed with surface features such as alliteration and internal rhyme to enhance memorability: ‘hallow truly thy holyday.’ There is a general indifference to scriptural fidelity: only nine Commandments appear, the prohibition against graven images is omitted (the Second Commandment), and the Fifth Commandment is rendered as ‘sle no man with thy tongue,’ rather than ‘non occidere’ or ‘do not kill.’ Although the omission of the second commandment is probably a result of eye-slip, the fact that it could be omitted may signal the relative lack of importance assigned to the prohibition of graven images, especially in contrast to the enormous increase of importance of this Commandment during the Reformation, as described by Aston. The longest and most complex Commandment is omitted, and those that remain are rendered in their simplest possible form, confirming Rubin’s argument about the tendency of quasi-orally transmitted material to shed complexity. That is, in the absence of a high premium placed upon near-verbatim recall and transmission, material will tend to ‘drift’ towards the most easily recalled form.

In contrast, Reformers placed a premium upon scriptural authority and designed their pedagogical and devotional materials around these principles. Thus the cognitive costs of Protestantism for the lay believer were relatively high, in that the learner is asked to conform to the requirements of the material, which for Protestants must be grounded in scriptural authority rather than the inventions of men. Whitehouse uses the term ‘cognitive cost’ to argue that ‘some forms of religious thinking are far from intuitive and may require a vast repertoire of pedagogic tools and mnemonic supports to be transmitted intact. To put it another way, some aspects of religion are cognitively costly’ (Whitehouse and Martin 2004: 223). This term itself is a revision of Pascal Boyer’s (1994, 2001) idea of the ‘cognitive optimum’ concept. While Boyer argues that religious cognition is natural in that it is simply a by-product of familiar tracks of thought, such as the human tendency

to ascribe agency very freely, Whitehouse argues instead that in fact many religious beliefs eschew the 'cognitive optimum,' which requires 'little special mnemonic support' (Whitehouse 2004: 45) and place high value on material that is relatively difficult to master and remember. In turn, we modify Whitehouse's argument, along the lines suggested by Day (2005), to emphasize that any material that needs to be kept in the head places huge demands on the human memory, especially insofar as the structure of the religion minimizes or attempts to restrict the ability to annex exterior forms.

Certainly the English Protestant Reformation, as a prime example of the 'doctrinal mode' of religiosity, demanded a wide range of costly cognitive practices: 'For such concepts to be produced and passed on, massive institutional support is required: pedagogical (e.g. theories and methods of instruction), infrastructural (e.g. classrooms, libraries, equipment), motivational (e.g. systems of sanctions and incentives)' (Whitehouse and Martin 2004: 224).¹ Both Catholicism and Protestantism required such a socially distributed system of memory, but because of the high priority placed upon scriptural authority and because of the concomitant importance of understanding rather than repetition, the level of cognitive scaffolding demanded by Protestantism was especially high. Thus the English Reformers re-built mnemonic scaffolds, privileging and prescribing new methods of remembering. If, as Clark argues, human brains are necessarily incomplete, thirsty for 'cheap, outsourced labor' (2008: 162), constantly seeking to extend their reach through external supports and technologies, then eschewing some ready-to-hand means of doing so strains our abilities. Reformers rejected some of the cheapest sources in favor of more costly practices. For example, the Catholic emphasis upon repetition, both in the liturgy and in the devotional and penitential prayers recommended to lay worshipers, is well suited to the constraints of biological memory, whereas, as we shall see, for the Reformers repetition symbolized above all inert and mindless practice.

Reformers held up an ideal of a believer with a true spiritual – online – engagement in worship. Attention and memory, correctly construed, lie at the heart of such engagement. Reformers painted a vivid picture of practices of worship that involved only a superficial engagement, generally characterized by mindless physical action: mumbling, kneeling, gazing, telling beads, rote memorization, repetition without understanding, and the like. As will be explored more fully in the following chapter, in this account, physical objects, ritual practices, and customary habits block true engagement and lead to an externalized, mindless practice that is at base material rather than spiritual.

For Reformers, the Mass represented all that was wrong with Catholic practice. Catholic worship during divine service was seen to disjoin priestly performance and lay worship: the service was in Latin, the Eucharist was an event, by and large, to be watched rather than taken, and the books of hours, or primers, that were increasingly carried to Mass through the fifteenth century were not translations of the service, but guides to pious contemplation to be consulted in parallel with it (Aston 1984: 122–5). Duffy (2006) and others have argued that the primers do not in fact represent an increase in ‘alienated individualists’ among those at public worship, but such was the Protestant perception of the service. Catholic worship was a complex, extended process in which lay devotion was tracked against priestly activity. Phases of the mass and gestures of the priest cued contemplation and memory at particular points during the service, aided by the book. The popularly disseminated *Lay Folks Masse Book*, for example, guided the worshiper through a set of devotional practices, such as repetition of the Pater Noster, which were to be conducted in parallel with the actions of the priest. A sample instruction was:

When the priest goes to his book
 His private prayer for to look
 Kneel thou down and say then this,
 That next in black written is:
 It will thy prayer much amend,
 If thou will hold up both thy hands,
 To God with good devotion,
 When thou say this orison,
God receive thy service.

(Simmons and Society 1879;
 see Targoff 2001: 22–3)

As these instructions indicate, the worshiper is to tie her gestures, actions, and words, to the action of the priest, which is closely observed. However, the worshiper knows nothing of the content of the priest’s ‘private prayer,’ written in the priest’s book, which of course would have been in Latin rather than the vernacular. The instructions also prescribe, or at least suggest, the physical postures of the reader, who is to kneel and lift her hands to heaven. The hope here is that the physical act of lifting hands is a substantive or efficacious act, rather than a merely accidental or expressive component of the prayer. This is a complex and highly distributed form of religious cognition, as the actions of

the priest are mapped onto the devotional treatise, which in turn is to be incorporated into the actions of the worshiper. The priest's gestures become a cue for contemplation and action, although these actions take place in a parallel rather than a synoptic framework. Dyrness suggests, *contra* Duffy, that '[e]ngrossed in the image, and the book, the worshiper could be cut off, even from the neighboring worshiper' (2004: 38). As Ramie Targoff (2001: 23) indicates and as is well documented by Duffy and Haigh, in the Catholic Mass the major moment of synoptic, shared attention was the elevation of the Host in the Mass, to which the congregation was alerted by the sacring bell. Protestant Reformers such as Thomas Cranmer contemptuously referred to the ensuing stampede to view as 'peeping, tooting and gazing at that thing the priest held up in his hands' (Cranmer *et al.* 1551/1844: 229). Despite Reforming hostility, such practices represented their own sophisticated forms of religious cognition, aided by sensory objects, the book, and the physical environment of the church – a cognitive ecology tied to an extended set of material and social practices.

However, Protestant Reformers viewed the parallel, dispersed nature of such practices as an abomination, and Cranmer's attack upon the papal Mass hinged on precisely such points. The critique consisted of two related arguments: the dispersed nature of the service led to a failure of concentration and attention, and so the Mass was more like playing than worship; and its use of Latin, of melismatic music, and of other 'curious' devices resulted in mere rote repetition rather than understanding. Following the first line of argument, in his answer to the *Fifteen Articles of the Rebels* (1549), Cranmer responded to the assertion of the leaders of the Prayer Book Rebellion that the new service is like a 'Christmas game' (Cranmer *et al.* 1549/1846: 180). In answer, Cranmer described the Mass as 'more like a game and a fond play to be laughed at of all men, to hear the priest speak aloud to all the people in Latin, and the people listen with their ears to hear, and some walking up and down in Church, some saying other prayers in Latin, and none understandeth other' (169). The failure of attention leads to a dispersed form of worship almost akin to the Tower of Babel, everyone literally speaking different languages. For Cranmer, the lay prayer described in the *Lay Folks Masse Booke* was not an act of pious devotion, but was instead symptomatic of a failure to truly align priest and congregation in the shared act of attention that alone constituted true worship. In the absence of true understanding, the lay worshiper falls back upon mere rote repetition, as figured by the image of the parrot or the (mag)pie. Cranmer demanded: 'Had you rather be like pies or parrots, that be taught to

speak, and yet understand not one word what they say, than be true Christian men, that pray unto God in heart and in faith?' (169).

The Prayer Book and its history: set forms

In writing the Prayer Book, Cranmer attempted to alter the cognitive ecology of worship, recruiting the faculties of attention and memory in new ways, and redistributing cognitive tasks across worshiper, cognitive artifacts and environments, and social systems. The Prayer Book, both in its inception as a reform of the Catholic Mass, and in the later attacks upon it by ardent Protestant Reformers, is a lightning rod for issues around attention and memory, particularly as they center on the question of the spiritual engagement of the worshiper. Cranmer's original intention was to animate the service, to draw worshipers into a shared set of practices that would promote true spiritual engagement. He wished to avoid the tendency of worshipers to substitute formalized, mechanized habitual modes for true engagement. In the preface to the Book of Common Prayer itself, Cranmer argued that 'this godly and decent order of the ancient fathers hath been so altered, broken, and neglected by planting in uncertain stories, legends, responses, verses, vain repetitions, commemorations, and synodals.' Most importantly, the use of Latin meant that the people 'understood not, so that they have heard with their ears only, and their hearts, spirits and mind have not been edified thereby' (1549/1846: 517). This attack employs the familiar strategy of contrasting a model of mere mechanical – often bodily – action with a form of worship that engages or penetrates the 'hearts, spirit, and mind.' The images of the parrot, magpie, or jay and the detached body part – the lip or the ear – are tropes that recur constantly in these debates. Used to attack rote repetition, such tropes are meant to convey that contrary to appearances, scaffolded actions such as reading a prayer, or repeating from memory set formulae and phrases, barely count as meaningful actions, and as thought not at all. Routine is equated with automaticity, entirely implicit and rigid, lacking in both spontaneity and interiority, failing to access the engaged heart.

The Book of Common Prayer was designed to create an order of public worship that would appeal to the twin (and sometimes conflicting) goals of creating a corporate body of worship and of ensuring understanding of and participation in the church service. The Book went through many different forms, from Cranmer's first Prayer Book of 1549, to its controversial revision in 1552, its adoption by Elizabeth's government under the Uniformity Act of 1559, and its short-lived

reworking as the *Directory for Public Worship* in 1645. The Prayer Book has been the subject of a great deal of historiographic debate. Duffy (1992) views it as a sad, attenuated shadow of the glories of the Catholic liturgy – although it was the most elaborate liturgy of any Protestant church in western Europe (MacCulloch 2007: 18, 7). Judith Maltby suggests that historians have ignored ‘evidence for positive attachment to the liturgy of the Church of England’ (Judith Maltby 1998: 13); ‘Familiarity’, she observes, ‘does not always breed contempt; it may nurture devotion’ (233). Targoff’s (2001) reading of the Prayer Book similarly argues for its potency as a means of shaping corporate identity.

The Prayer Book attempted to impose a new economy of attention on the worshiper, and made far-reaching changes in the nature of worship. To its later critics, however, the changes did not go nearly far enough in ensuring the proper articulation between exterior form and inward experience. Despite Cranmer’s declared intention to reduce repetition and rote formulae in the service, to its critics the scaffolds Cranmer provided in the Prayer Book were more like crutches, overly tied to the old order, replete with formalisms, repetitions, and ceremony, and not sufficiently grounded upon scriptural authority. The Prayer Book was the subject of repeated criticism throughout the Elizabethan and Stuart periods, culminating in the abolition of the book in favor of the *Directory for Public Worship* during Parliamentary rule; in turn, *The Directory* was attacked using the same rhetorical arsenal. Proponents of further ecclesiastical reform deployed many of the same arguments against Cranmer’s Prayer Book as he had used himself against the Catholic Mass, reiterating the points about mindless repetition, a lack of real understanding, and a reliance upon scripted, external set forms such as ‘stinted prayers’ and formulaic responses. For more ardent Reformers, especially those who had been in exile in Geneva and participated in Reformed services there, the Prayer Book was not a true innovation but was far too close to the old mass-book – ‘culled and picked out of that Popish dunghill, the abomination of the Masse Booke,’ as the *Admonition to the Parliament* written by John Field and Thomas Wilcox claimed (Frere and Douglas 1572/1907: 21).

Particularly at issue was the emphasis upon ‘reading’ aloud. ‘Reading’ encompassed the recitation of scripture at set moments in the liturgy; the reading of set prayers; and the reading of homilies – sermons centrally composed and designed to be read by ministers on the appropriate occasions – rather than preaching and spontaneous prayer. For these Reformers, preachers were worse than parrots or pies: they were as bad as players: ‘Reading is not feeding, but it as evill as playing upon a stage

and worse too. For players yet learne their partes wythout booke, and these, manye of them can scarcely reade within booke' (22). This notion of shallow encoding, or words remembered and repeated meaninglessly, is a staple of ardent Reforming rhetoric. Reading aloud from a book, or reciting a set prayer that has been conned by heart, is akin to papist 'mumbling,' the 'vain repetition' of words meant to have a charm-like effect, the result of custom or habit rather than conviction, similar to a schoolboy reading a lesson or a player conning a part.

This point is repeated in the anonymous sequel to Field and Wilcox, *The Second Admonition to the Parliament* (1572). The author vividly described the failure of shared attention that marked the reformed order of worship:

[B]esides I cannot accompt it praying, as they use it commonly, but only reading or saying of prayers, even as a childe that learneth to reade, if his lesson be a prayer, he readeth a prayer, he dothe not pray, even so is it commonly a saying, and reading prayers and not praying, the childe putteth of his cap as wel as the minister. For thoughte they have manye guises, nowe to knele, and nowe to stande, these be of course, and not of any pricke of conscience, or piercing of the heart most commonly. One he kneeleth on his knees, and this way he loketh, and that way he loketh, another he kneeleth him selfe a sleepe, another kneeleth with suche devotion, that he is so farre in talk, that he forgetteth to arise till his knee ake, or his talke endeth, or service is done. And why is all this? but that there is no suche praying as should touche the hearte. And therefore another hath so little feeling of the common prayer, that he bringeth a booke of his owne, and though he sitte when they sitte, stand when they stand, kneele when they kneele, he may pause sometime also, but moste of all he intendeth his owne booke, is this praying?

(Frere and Douglas 1572/1907: 115)

This portrayal is strikingly similar to Cranmer's own description of the diffused nature of Catholic worship discussed above. A purportedly public and communal form of worship is instead comprised of near-random movements and gestures. The *Second Admonition* describes a failure of the management of attention, and the individual members of the congregation remain just that, individuals, gazing about the church, kneeling, conversing, reading, rather than genuinely engaging in an act of 'common' prayer. Mere repetition, whether it be the verbal repetition demanded by set forms of prayer, or the physical

imitation of the rising and kneeling of the congregation, results in a purely external form of worship, a matter of random unengaged bodily movements. As Paul Connerton has shown, ritual is an especially effective mnemonic, sedimented as it is in the body: 'the limited resources of ritual posture, gesture, and movement strip communication clean of many hermeneutic puzzles. One kneels or one does not kneel, one executes the movement necessary to perform the Nazi salute or one does not . . . such performative doings are particularly effective' (1989: 59). Reformers recognized and feared the 'mnemonic power' (59) of habitual action precisely because it was so effective.

As so often in Reforming rhetoric, contrasts are drawn between 'mere' exterior action and an unengaged 'hearte,' using the images of piercing and pricking to figure the potential for articulation between external action and internal transformation. Actions or gestures themselves are not eschewed, but sharp distinction is made between formal movements, such as the boy doffing his hat, and those that result from a profound articulation between inner and outer resources. Indeed, words themselves could become idols, if they are repeated and used as charms or superstitiously. As the authors of *Second Admonition* demanded:

Whence learned they all those needeles repetitions? is it not the popishe Gloria patri? their Dominus vobiscum? their Oremus? Lorde have mercye upon us, Christe have mercy on us, is it not Kyrie eleeson, Christe elleson? Their many Pater nosters, why use they them? But as though they were at their beades.

(Frere and Douglas 1572/1907: 114)

The accusation of 'beades' is a telling one. For Reformers no one object stands for vain formalism more than the rosary beads. Stephen Bateman's *Christall Glasse of the Reformation* figures sloth as a Friar telling his beads: 'The fryers weede and beades signifieth hypocrise and lothsomeness of the truth' (Bateman 1569: G.2R; see Kearney 2002: 22). A typical prohibition was that 'no person or persons whatsoever shall wear beads, or pray, either in Latin or in English, upon beads or knots, or any other like superstitious thing; nor shal pray upon any popish Latin or English Primer, or other like book, ... nor shall worship any cross, nor give an reverence thereunto, nor superstitiously shall make upon themselves the sign of the cross' (Cressy and Ferrell 1996: 93).

In early modern England, one of the *loci classici* of this concept is I.iii of Edmund Spenser's *The Faerie Queen*. Abessa, blind, deaf, and dumb, flees in fear from Una until she reaches a dark cave where her mother

is bidding her beads in the sort of repetitive, mindless prayer that for Protestants epitomized the emptiness of Catholic practice:

She [Una] found them both [Abessa and Corcreca] in
 darkesome corner pent;
 Where that old woman day and night did pray
 Vpon her beades deuoutly penitent;
 Nine hundred Pater nosters euery day,
 And thrise nine hundred Aues she was wont to say.

And to augment her painefull pennance more,
 Thrise euery weeke in ashes she did sit,
 And next her wrinkled skin rough sackcloth wore,
 And thrise three times did fast from any bit:
 But now for feare her beads she did forget.

(Spenser 1599: I.iii)²

Spenser's representation emphasizes some of the major points of Protestant critique: an emphasis upon 'vain repetition' – hundreds of mumbled prayers – as well as reliance upon the material trappings of piety such as sackcloth and ashes and the rosary beads rather than upon the spiritual work of prayer. Such images undergird not only the original attempts to create a Reformed public order of worship in England, but they also provide a ready stock of attacks on that order as insufficiently 'spiritual,' that is, overly reliant upon the forms and inventions of men, as the common phrase went, rather than upon the word of God. For Protestant and Catholic alike beads were a powerful symbol – for Protestants of mindless or superstitious prayer, for Catholics of devotion. This was particularly the case for covert Catholics in the Elizabethan or Jacobean age, for whom beads were an effective means of lay devotion 'requiring no intermediary and no priest' (Winston-Allen 1997: 29).

For Reformers, reliance upon external helps – even such intimate 'helps' as words and gestures themselves – could represent a betrayal of the heart, which is alone meant to speak to God. Even so seemingly innocuous a practice as the repetition of the Lord's Prayer was controversial in this view, for how was repeating it to be differentiated from the 'nine hundred Pater nosters' mumbled by Cocreca? Such questions were at the heart of the so-called 'set form' debate. As Kenneth Stevenson has shown, the prominence of the Lord's Prayer in the Reformed Prayer Book was a sticking point for many anti-episcopates and Separatists.

When Jesus said, 'When you pray, pray like this,' did he mean 'pray this prayer' or did he mean, 'pray after this fashion'? The fear of being tied to words – even scripturally authorized words such as these – led separatists such as Henry Barrow and John Greenfield to reject the prayer; as John Smyth wrote in 1605, 'I had rather speak five words to God in prayer from understanding, faith, and feeling, than say the Lord's Prayer over a thousand times ignorantly, negligently, or superstitiously' (qtd. Stevenson 2004: 53). In contrast, as Stevenson argues, the great Elizabethan apologist Richard Hooker sought to find a means of defending the Prayer that did not depend simply on the notion of it as an external 'help,' since teaching aids were rarely accorded much respect, at least in the long run. It is for this same reason that Hooker rejected a purely didactic explanation of the sacraments, which he viewed as an attenuated account of their importance. For Hooker, the Lord's Prayer certainly could help the weaker sort, but it also worked as a fulcrum that bound priest and congregation in an expression of unity (Stevenson 2004: 51) that was not simply representational but effectual.

The debate over prayer ultimately revolves around the issue of external helps. A 'set form' of prayer read in a book or recited after a priest is an obvious example of an external resource that might be annexed into an extended system. But due to the peculiar nature of prayer, some at the radical end of the spectrum found *any* form of aid to be inauthentic, a betrayal of a relationship that is only genuine if it is entirely internalist. This argument is extended not just to set forms, but to forms of private prayer as well, particularly to the keenly discussed question of how and why to manage the body in both private and public prayer. Cynthia Garrett persuasively argues for an ambivalence at the heart of the discourse on prayer. She sees a tension between a belief that prayer is in essence a silent and motionless communion between God and the pray-er – God's ability to read the heart renders the need for voice and gesture redundant – and an acknowledgement of the socially embedded nature of the act and the need for a 'manifestation in word, gesture, or other sign' (Garrett 1993: 345). Even those who attempted to reduce prayer to 'insides' only were forced to acknowledge its social embeddedness, the difficulty of disentangling any human act from its affiliations with external supports – even those so close as the body itself – and social systems. The radical interpretation of the inimical relationship of 'spirit' and 'external worship' in this period led to an unprecedented probing of the nature of the relationship of the mind and its external supports (Durstun 2006). For the purposes of studies in the Extended Mind, these debates are noteworthy in demonstrating a continual

testing of the capacity of the mind to eschew external supports. What is striking, overall, is the near impossibility of doing so, a point ultimately acknowledged by both camps.

We can see this dynamic vividly in a debate between the moderate Puritan minister George Gifford and his considerably more radical opponent, the separatist John Greenwood, who along with his elder partner Henry Barrow, was executed in 1593. As Christopher Durston suggests, while Puritan divines such as Gifford and Perkins were opposed to the holdover of vain repetitions and other purportedly Papist remnants in the established Prayer Books, they did acknowledge the value of some set forms, which were necessitated by the 'imperfectness' of man, an acknowledgment of the necessity of external forms to complete or 'perfect the fallen man' (Durston 2006: 52). Gifford himself falls within this tradition; his debates with Greenwood and Barrow comprised a number of flurries between the antagonists, ending with Barrow's massive tract *A Plaine Refutation of Mister Giffardes Reproachful Booke* (Barrow and Greenwood 1591). The essence of the argument between Greenwood and Gifford concerns the use of so-called stinted liturgy in public worship. Greenwood argues that such acts are an impediment to the spirit:

The spirit onelie helpeth our infirmities and no other helpes are mentioned. But in the present action of prayer when the heart is talking with God, the eyes, handes, &c with attention lift up to heaven, al the poweres of our soules and bodies conversant with God, to take a booke and read cannot be called in this action but a confounding of the minde, of Gods ordinance.

(Greenwood 1590: D2r)

In this view, prayer involves the recruitment of the 'spirit' alone in an act of full attention and engagement with God. To read from a book at that moment disrupts the delicate equilibrium, 'confounding' the mind and resulting in the failure of the act. Like the distractions of public worship catalogued by Cranmer and the authors of the *Second Admonition*, the book becomes dead weight, an inert object that interferes with what should be an act of profound attention. This much is familiar. But for all this, there is an ambiguity at the heart of Greenwood's account of prayer: what, precisely, is the role of the gesture – of the hands and eyes lifted to God? Have not the actions of the body been recruited to manage attention? How are such acts to be read, and do they not point to the necessity of 'helpes'?³

This point is at the heart of Gifford's argument. Gifford conceded, as he must, Greenwood's point that bodily action *in and of itself* cannot count as prayer. To do otherwise would be tantamount to acknowledging that works alone can have a purchase upon God, a position that would be anathema to Gifford, as it would be to all Protestants. The simple physical act alone is mere 'lippe labour': 'I did and do co[n]fesse, yt this scripture [John 4:23–4 – God is a spirit and is to be worshipped in spirit] doth cut downe all carnall worship, as disagreeing from the nature of God: & therefore may most fitlie be alleaged against such as shall maintaine that the verie bodilie action in reading is worship of God' (Gifford 1590: K4v). So the simple 'bodilie' action of reading cannot count as prayer, because it does not involve any acts of *coordination* between the internal (or spiritual) and the external prop. However, it is easy for Gifford to imagine such coordination occurring:

seeing a man may upon a book pray reading or after a prescript forme with sighs and groanes which proceed of faith. Master Greenwood termeth this a bodilie distinction. Doubtless if it be a bodilie distinction to affirm that the verie bodilie action of reading a prayer is not the worship of God (which we maintaine against the Papists in their lippe labour) I know not what Master Greenwood will allowe be spirituall. What manner of spirit is his?

(Gifford 1590: K4r)

In this view, the uttering of 'sighs and groanes which proceed of faith' (but *not* merely sighing and groaning) can act as a guarantor that the outward and the inner have been articulated. It matters not whether the 'outer' is construed here as a material object being held and read, or as a 'culturally sculpted internal surrogate' (Sutton 2010a: 213) such as a 'prescript form' that has been remembered and recited (as for example, the Lord's Prayer). Moreover, Gifford spotted that Greenwood's representation of the use of the body in prayer – 'the eyes, hand &c with attention lifted up to heaven' – *itself* constituted a form of 'outward help.' The pray-er recruits the movements of the body as a way of coordinating the inner and outer, as a way of boot-strapping the prayer, as it were:

Does the voice of an other that prayeth, whether fasting, lifting up the eyes and hands (which he mentioneth), or whether prostrating the body & kneeling in prayer itself, or outward meanes to make the prayer more fervent? Euerie simple man will laugh at him, if he say they be prayer it selfe, whereupon hee must bee forced to confesse

they bee but outward helps and meanes not onely before prayer, but euen in the very actions of prayer, outward helps and meanes especially for the ignorant and dull are needful and good.'

(Gifford 1590: K2v)

Gifford went on to ask: 'Can they proue that a man cannot at the same instant both vtter it with his mouth in reading and pray it with his heart. M[r] G[reenwood] must denie this again. For alas what stuff is this? Or else how did they sing psalms to GOD and read them vpon the booke? How can a man heare and pray both at one instant?' (L2r). Gifford argued here for the necessary intertwining of internal and external resources, for the ultimate impossibility of a purely disincarnate mode of address to God. Thus the very act of recruiting somatic resources for maintaining attention and fervency itself constitutes a form of 'help.'

In *A Few Observations about Mr. Giffards Last Cavills*, 'annexed' to Barrow's *Plaine Refutation* (1591), Greenwood addressed Gifford's claims about the relationship of the mind and body in prayer:

Wil he call fasting, kneeling, etc., instructions of the minde what to pray? Then he must needs plead for his image and al poperye, if these bodily actions and gestures be instructed of the minde, which are but preparations to make the body serviceable and apt to in this dutie. Further, how learnedly he disputeth to make reading one of these bodily gestures or bodily actions only, let it be considered of. And as he confoundeth these bodily exercises and spirituall exercises, so he sheweth himself ignorant and unable to discerne spirituall gyftes and exercises one from an other. (li1R)

Greenwood argued that prayer *qua* prayer can only be spiritual – or to use modern terminology, 'mental,' intending to narrow the scope of the mental so much that no 'helps' whatsoever are allowed. Any recruiting of external resources, including 'bodily actions and gestures' are merely preparatory actions designed 'to make the body servicable,' and must be kept entirely distinct from the purely spiritual act of prayer itself. To believe otherwise is to 'pleade for his image and al poperye,' with no distinction mooted between the purely formal repetition parodied by Spenser and the articulation of external and internal resources such as the use of one's own body.

This aspect of the argument raises a larger question about the role of gesture in prayer and in worship generally. As Garrett shows, writers

from a wide range of positions, from Lancelot Andrewes to George Downname, were unwilling to forego the use of so-called 'external' actions. Downname's well-known *Godly and Learned Treatise* (1640) on prayer surveyed the available gestures one might use in prayer – from turning to kneeling to 'knocking' the breast. He offered the familiar argument that such actions can be seen as 'the signes of those graces which we contein in our souls' (117). The relegation of gestures to 'signs' neatly sidesteps the question of their efficacy, arguing simply that they 'express those inward graces' and may remind the worshiper of his duties: 'And therefore as we uncover our heads, so to lay aside all opinion and conceit of our own worthinesse, and with all reverence to set our selves in the presence of God, and as we kneel outwardly, so to bow the knees of our hearts and to humble our souls before the Lord' (118). In this view, gestures simply express or symbolize pre-existing states of mind and are therefore, strictly speaking, redundant.

Yet in the final instance the picture is not so clear-cut, and both gesture and voice become a crucial means of exciting 'fergency,' and managing attention: 'Moreover, as the gesture of the body[,] so much more the voyce of the tongue doth serve both to stirre up the affections of the heart and also to contein the cogitations from wandring about other matters' (118). In other words, *God* may not need to see gestures or hear words, but for an act to count as prayer the outward articulation of both body and voice provides a nearly indispensable means of managing the complex online demands of prayer.

John Bulwer, author of the well-known treatise *Chirologia* (1644), offered a view of gesture in prayer that acknowledged its efficacy much more fully. Bulwer was associated with a circle closely connected to Archbishop Laud and thus might be expected to take a much more sanguine view of the nature of so-called external worship. Indeed, his view of gesture was grounded in a humoral physiology that posited a direct, causal relationship between the internal mechanisms of the passions and the movements of the body, especially the hands. As Joseph Roach has explained, in Bulwer's view, to feel grief literally compresses the brain, mangle-like, expelling moisture from the eyes, and causing 'the hard wringing of the hands' (Roach 1993: 34). A similar etiology is provided of the act of raising the hands in prayer:

To Raise the hand conioyned or speard out towards heaven is the habit of devotion, and a naturall and universall forme of Prayer Hence 'tis the Scriptures doe most emphatically define prayer by this outward signe, not that this speaking habit of the Hand is all

or the most principall part of devotion, for Hyppocrites, as if fired with zeale, EXTEND THEIR ARMES AND HANDS, who yet but mock God by seeming to draw nigh unto Him, when their Hearts belie their Hands. But, this gesture is an outwarde helpe unto devotion, appointed by the ordinance of Nature of expresse the holy fervour of our affections. For since it is impossible by reason of our great infirmitie, we should with our soaring thoughts move beyond the centre of our bodies; we stand in need of some outward help to declare the ascension of our inwarde zeale, which we reveale by the EXTENSION OF OUR HANDS, which supplying the place of wings, helpe our hearts in their flight upward. For unlesse our hearts are polluted with the leaven of hypocrisie, they raise the heart to the throne of grace, before which we present our supplications. (Bulwer 1644: 14)

One detects here a certain unease, as represented by the caveat about hypocrites, who may feign the gesture, but cannot use it effectually because their hearts are not engaged. Bulwer expands on this point by arguing that ‘Idolaters and Hypocrites’ who attempt to feign such gestures:

are but Apes, who while they by outward Symbole professe to haue their Mindes erected upwards . . . entangled in vaine cares or wicked cogitations, lye groveling on the earth and by a contradiction in gesture, beare witness against themselves.

(Bulwer 1644: 21)

Nevertheless Bulwer was much more willing than Downame to grant more than a minimally expressive function for gesture, which can literally pull the body – and with it, the mind – upward. In this view, gesture cannot be dismissed as a formal add-on to an internal act, but is part of an extended, integrated, system of thought.

Bulwer’s argument chimed with broader Laudian attitudes towards appropriate gestures in religious worship. The gestures and postures required of parishioners reflected the new priorities, most obviously with bowing to the altar, heavily promoted in Laudian literature but not prescribed, and the requirement of communicants to receive kneeling at the rails. Laudians stressed that the gestures indicated adoration not towards the table but to God; opponents like William Prynne, Daniel Cawdrey and Henry Parker labeled the practices idolatrous (Fincham and Tyacke 2007: 150–66, 251–2). The Laudians reconnected the link

between outward gesture and inward piety that early reformers had sought to break, arguing that repetitive performance of external observances inculcated virtues in a correspondence between body and soul (Lake 1993: 165–6). That the power of these gestures was recognized by their opponents is evident from the speed in which measures were taken in the early 1640s to prohibit or discourage bowing at the altar and at the name of Jesus, signing with the cross, and kneeling to receive communion (Fincham and Tyacke 2007: 274–83).

Looking at gesture in this specific historical framework, in the context of a culture actively debating the relationship of the internal and the external, may be buttressed by an examination of contemporary linguistic and psychological research on gesture. Gesture has become an increasingly important area of research in cognitive linguistics, neuroscience, and embodied cognition. Long ignored as meaningless gesticulation, gesture is now widely seen to play an active causal role in thought and in language production. Linguists such as David McNeill, Adam Kendon and Susan Goldin-Meadow have compiled an impressive body of evidence on the ‘thought-language-hand link’ (McNeill 2005: 252). In her research, Goldin-Meadow presents considerable evidence that gesture ‘lightens the [speaker’s] cognitive load’ (150). Difficulties in producing or remembering speech tends to increase gesture and more complex cognitive tasks result in more gesture production (48). She argues that gesture ‘plays a causal role in thinking’ (149) and significantly aids memory. That is, our hands help us think. Gesture also helps us remember, and research has pointed to gesture’s beneficial effects on memory and the attention of the viewer/listener/audience member.

These new findings on gesture have been of great interest to researchers in Distributed Cognition/Extended Mind. In *Supersizing the Mind*, Clark explores the relevance of this work for theories of cognitive extension. He argues that gestures are an example of ‘extended cognizing in action’ (123). On the basis of the research we have just briefly described Clark suggests ‘the act of gesturing is part and parcel of a coupled neural-bodily unfolding that is itself usefully seen as an organismically extended process of thought,’ a ‘unified thought-language-hand system’ (126–7). It might be objected here that prayer is not ‘thought,’ although, as Clark acknowledges, the precise definition of ‘thought’ is not always clearly registered in the research on gesture itself. But what is valued in so-called ‘true’ prayer – or indeed any act that counts as worship – is a form of action that cannot be dismissed as routine, formal, or automatic. Even writers ideologically committed to

an internalist model, such as Downname and Greenwood, find it difficult to imagine a truly non-extended system.

It is important to note that Greenwood and others are not arguing that human beings do not find external helps attractive and desirable; to the contrary, it is *because* of their attractiveness that they must be rooted out. Both external forms and internal surrogates – that is, both read and memorized prayer – have, in these more extreme views, the potential to colonize the brain with dead weight that will become, instead of a bridge to understanding, a roadblock. This account is made explicit in John Milton's argument against episcopacy and set forms. In his *Apology to Smecytenus*, Milton argues that prescript forms are at best juvenile toys, similar to cribs such as interlineal translations; at worst, they cripple the believer: 'And so little does it appear our prayers are from the heart, that multitudes of us declare, they know not how to pray but by rote' (Milton 1953: 943). Milton rejects the common argument that frail men require outside support such as is given through forms, rituals, and prescribed bodily action. A crutch might seem at first blush to be a handy tool, but it will ultimately 'weaken the spiritual faculties':

For not only the body, & the mind, but also the improvement of Gods Spirit is quicken'd by using. Whereas they who will ever adhere to liturgy, bring themselves in the end to such a passe by overmuch leaning as to lose even the legs of their devotion. (937–38)

Milton recognizes and rejects the mind's attempts to annex non-natural 'stuff,' invoking the image of the body deformed by its reliance upon 'helps.' In this view, external surrogates, even those that have been internalized, do not complete an imperfect being, but instead create a dependency that leaves the subject forever maimed.

This point is put most strongly by Hezekiah Woodward in his *A Treatise of Prayer* (1656). Like Milton, Woodward combined an ardor for spiritual reformation with a zeal for educational reform; indeed, his educational works will be discussed briefly in the conclusion. A disciple of Bacon and Comenius, he sought to replace the educational system's reliance upon rote memorization, especially the deadly memorization of Lyly's grammar, with a system that reflected the child's developmental needs and his delight in learning about the world around him. These two goals coincided in his *Treatise of Prayer*. For Woodward, there was little to choose between the 'visible book,' the prop one holds in one's hand, and the 'invisible, his memory' (11). Woodward

argued: 'For though they might pray in prayer, wrought by the Spirit for that very thing; Yet being written before their eyes, and prayed by the booke visible or invisible, we meane the memory, there is no more spirit and life therein, than there is in a dead letter. Indeed we may call these prayers flesh, being written with inke which profiteth nothing' (3–4). Like Milton, Woodward claimed that those who become habituated to written prayers will never be able to shed them: 'Now for any one to habituate or accustome himselfe to formes of prayer, that is, to prayers made or written by another, and said by himselfe, shall find himselfe as unable, and as hard a matter to come off from them ... as it is with an Ethiopian to change his skin, or the Leopard his spots' (3). Whether an external book or an internal surrogate, 'formes' become a dangerously attractive mode of habit, that once sedimented into the mind and body, colonize it.

For Woodward, the real problem was that set forms are attractive, in the same way that the images are: 'Set formes of prayer are too pleasing and suitable to flesh and bloud, to be pleasing to God. That which hath in it any virtue to do the soul good must hurt the flesh, even to the point of torment But this prayer by a prayer-boke doth no more execution upon our lusts, than a potgun can against a heard of Harts, or a Gun charged with powder among armed men' (17). This extreme rejection of any external form or scaffolding led Woodward to argue that the Lord's Prayer should not be recited and that it should be seen only as a pattern by which to frame other prayers (Stevenson 2004: 46–6).

In answer to the argument that the prayer provided a help to the memory, Woodward assented, but viewed it *for that very reason* to be dangerous. Thus he granted that 'there is a sicknesse upon all the faculties of the soule,' indeed that 'this sicknesse is universally spread over all men' (Woodward 1656: 49). Yet the problem is not weakness *per se* but the memory's propensity to be 'tenaciously retentive of all that is evill' (50). For this reason, Woodward argued that children should not be taught the Lord's Prayer. It is not evil in itself, but if it is poorly understood and seen as a sort of talisman against evil, the effect is pernicious. Woodward acknowledged that such a stance was unpopular, to say the least. A minister who counseled his flock not to teach the Lord's prayer to their children risked alienating them entirely: 'for whereas ... they could have pulled out their eyes for their Minister, before he meddled with the Lord's Prayer, now they were enclined, at least, to pull out their Minister's eyes from him' (71).

Woodward's argument against the Lord's Prayer turned upon the familiar 'parrot' trope: 'You may teach your child to say it, so you may

your *Parrot* too; and teaching him altogether to say it, as you, in your pulpit, he will understand as much as the Parrot doth You may put this prayer, as to the words of it, into the mouth of your children, but he comprehends it no more than doth the darknesse the light.' Inculcating rote memory first was 'cleane cross to the right method of teaching ... for it is to teach your childe as you would teache your Parrot' (69). The 'right method' Woodward has in mind is his own, of course, fashioned explicitly against the near-ubiquitous practice of beginning instruction with 'exercise' of the memory, which was virtually universal in this period. Teaching parishioners to recite the prayer was ineffective and simply replicated the Catholic practice of rote repetition:

All the wicked persons in your Church, we are perswaded, not one excepted, no not the veriest varlet there, but they all teach it their children, they shall have it, *by tradition from their parents*. These were taught their *Pater noster* (they understand the Latine as well as the English, and the Greeke too) *their Creed*, and the *ten Commandements*; and so much they will teach their children, either by themselves or another and having learned enough for themselves and their children after them. (70)

In this account, memorization of verbal material simply does not furnish the mind with virtue any more than repeating *pater nosters* constitutes an effective form of repentance.

Catechism: memory and understanding

In raising this issue, Woodward hit at one of the cornerstones of Reforming practice: the catechism itself. He articulated a central concern for Reformers: how to inculcate a basic understanding of the principles of faith in the lay population without relying upon mere rote repetition of the sort caricatured by the papist mumbling upon her beads. Ian Green (1996) and Tessa Watt (1991) have discussed some of the strategies catechists and publishers of religious broadsides used to circumvent this danger. Green's magisterial survey of the English catechism is of particular relevance here. Catechizing became central to Protestant practice and a catechism was included in the Prayer Book under the 'Confirmation' section (Booty 1976: 282–7). As Green points out, it was expected that late medieval Catholics would be able to rehearse central elements of the faith, but the English church went much further in its attempt to inculcate the central tenets of Protestantism. The Reformers

were 'highly critical of what they saw as man-made fictions and senseless repetition which had passed for instruction in the Middle Ages' (97) and urged far-reaching catechizing as a means of ensuring that everyone had a foundation for understanding the central points of Protestant doctrine. In some ways, Green argues, it is not so much the content as the format of the Protestant catechism that is innovative. In particular, the Protestant use of the question/answer format, which Green traces to the reforming/humanist taste for the dialogue form, is of especial note (16). While it might seem a mere device, it was far-reaching in its implications. Put most simply, a question/answer format presumes a social relationship of an interlocutor and a respondent. While this may be self-evident, it has important implications for considering the mnemonic structures at work. For the format necessitates a socially and materially distributed system, consisting of, at the least, two people of unequal power relationships, a book, and script for oral delivery. Moreover, the book itself depends upon other books, particularly the Bible, since many catechisms employed a cross-reference system to anchor the answers in scriptural authority (see, for example, Bernard 1607).

As Green notes, the pedagogical basis of these practices was the belief that memorization would provide a foundation that could later be built upon to ensure understanding: the common belief that memory preceded judgement resulted in stressing 'the importance of feeding [pupils'] memories with information, so that later they would be able to understand its meaning and their consciences would be able to act accordingly' (237). This of course is precisely the position against which Woodward argued; if students are stuffed with mere words, they will never have an appetite for understanding. In his widely read *The Faithfull Shepherd*, Richard Bernard advised ministers to 'Let the people then learne the Catechisme word for word, and answer to euery question: Interrupt not beginners with interpretations, neither goe further with any than he can well say: after come to the meaning, and inquire an answer still of them, how they vnderstand this or that in one question, and so in an other; but goe not beyond their conceites' (C1r). However, this theory often foundered in practice, in the hard slog of actually attempting to teach people of widely ranging ability and experience. The chief point that comes out of Green's exhaustive survey is that catechizing is hard, both upon pupil and teacher. The goal might be described as intra-cranial – that is, that the catechized will have 'by heart' a set of basic principles that she or he can then deploy when hearing sermons, participating in worship, and going about daily life. But the sheer number of published handbooks, each claiming to make

the material simpler, plainer, and 'more easie' than the next, attests to the great difficulties encountered when one attempts to keep material in memory that is not designed to anchor there, that, in Mithen's phrase, has no home in the human mind. The amount of material and social scaffolding needed to accomplish the apparently simple goal of inculcating basic religious tenets is staggering, as attested by the vast number of editions of catechisms published in our period.

The result is a plethora of texts competing in the marketplace designed to supplement or replace the catechism in the Prayer Book. Some, aimed at the more advanced student, sought to present a fuller account of the principles of faith. Others attempted to boil down the responses into the simplest possible format, suitable for the 'meanest' or the 'simplest,' words which echo through the title pages of publications of this type. Although the official catechism is not especially long taken as a whole, some of the responses are quite long and involved. A number of writers, including Bernard, chose both paths at once, through a 'double catechism' that presented one version with very brief questions and answers for the 'weaker sort,' as well as 'one more large, following the order of the common authorised Catechisme, and an exposition thereof' (Bernard 1607: title page). As Green recounts, this use of an 'enfolded' (251) approach is one of a wide range of pedagogical strategies employed to make the catechism easier to remember and teach. Often these involved innovative uses of the printed page. At the simplest level, questions and answers were distinguished typographically, often with the more familiar black letter being used for the pupil's response. Other writers used the simplest possible approach, such as the anonymous author of *A Short Catechism for Little Children Learned By One At Three Yeares of Age*. This small treatise seems intended for domestic use, perhaps for the child to actually own, since it begins with the alphabet, and identifies the interlocutors as 'father' and 'child.' These questions are boiled down to their essential form: 'How many Gods bee there? – one'; 'How many persons be there? – Three' (Anon 1589: A3r).

As Watt has observed, broadside tables were often employed as ancillary means of keeping material for pious contemplation in memory. These 'godly tables' contained a range of material that would support and elaborate the basic tenets taught in the catechism. The Ten Commandments often featured, as in the copper engraving 'The Christians jewell fit to adorne the heart and decke the house of every Protestant' (1624) (reprinted Watt 1991: 246). Based upon a church painted screen, the engraving contains a vividly realized and sophisticated visual representation of the central tenets of Protestant faith, including the

Ten Commandments, the Lord's Prayer, and the Sacraments. In a less expensive and somewhat cruder vein, the broadside 'Some fyne gloves devised for new yers gyftes' uses the conceit of the glove to organize didactic information for children to help them 'knowe good from evyll' (plate 49, Watt 1991: 249). Watt astutely observes that 'one thing all of the godly tables have in common is their use of print for primarily mnemonic rather than narrative purposes: that is, they do not so much communicate new information to their readers, as remind them of information already known but repeatedly forgotten' (251).

Other authors used increasingly complex layouts and schemes to ensure that the simple answers formed a foundation for more nuanced understanding of the principles. One example is Herbert Palmer's *An Endeauour of Making the Principles of Christian Religion, Namely the Creed, the Ten Commandments, the Lords Prayer, and the Sacraments, Plain and Easie, Tending to the more speedy instruction of the meanest capacities, and weakest memories* (1640). Palmer uses 'a double sort of Answers and a double sort of questions' (A2r), a method in which the simplest possible answers ('yes' or 'no') are followed by more probing questions designed to elicit understanding of the concepts. Moreover, the answers 'are all framed into entire sentences of themselves, without depending for their sense upon the foregoing question' (A2r). As Green points out, such a strategy was designed to circumvent the common problem of pupils randomly answering the wrong question; such learners 'who when the sense is shared between the question and the Answer (as for brevities sake it is usuall) forgetting the question, oft give the Answer which they have learned by rote, to a wrong question' (A2v). Moreover, this technique provides a sort of free-standing 'stock of divine Wisdom' (A2r) available independently of the question and answer format. In addition, the repetition of phrases from question to answer will kick-start the process of remembering: 'he will soon get the answer, as having it altogether or in parcels, put into his mouth before in the questions' (A2v).

The layout of the page is in three columns, with questions on the left, a narrow middle column for 'yes' or 'no,' and answers, complete with scriptural citations on the right. The minister asks, '*What is a mans greatest business in this world? Is it to follow the world, and live as hee list? [no] Or, is it to glorifie God, and save him own soule. [Yes].*' The full answer, tied to the words of the question is: '*A. A mans greatest business in this life is to [a]glorifie God, & [b]save his own soule, a I. Cor. 6.20.*' This approach inscribes a system of probes designed to distinguish mere rote repetition and guesswork from actual understanding. In this Palmer departs from the usual format of 'memory first, understanding later' and

attempts to integrate the two processes. Yet the very complexity of the format adds another layer of difficulty in inculcating the principles.

Despite efforts such as these, concerns remained that the responses might be mere 'lip labour,' employing the mouth without engaging the understanding. Like Woodward, some catechists expressed concern that they were training parrots in rote repetition rather than instructing the godly. Increasing efforts to simplify the catechism risked replicating the hated 'vain repetition' of Catholic practice, in which a few lines of the Creed or the Lord's Prayer were seen as inoculating against damnation.

Perhaps foremost among these is William Perkins, who produced *The Foundation of Christian Religion, gathered into sixe principles* (1591), as a doctrinal supplement to the Prayer Book Catechism. With characteristic bluntness, Perkins prefaced *The Foundation* with an epistle to the reader directed 'to all Ignorant people that desire to be instructed.' These instructions consisted of a list of 'common opinions' that he wished to eradicate through an understanding of the fundamental principles underpinning the Protestant faith. Perkins began: 'Poor people, your manner is to sooth vp your selues, as though ye wer in a most happy state: but if the matter come to a iust trial, it will fall out farr otherwise. For yee lead your liues in great ignorance, as may appeare by these your common opinions which follow' (A2v). Perkins here confronted the risk that the 'ignorant' will view learning the basic catechistical material as fulfilling their side of the bargain with God. Among the beliefs he attacks were: 'That it was a good world when the old Religion was, because all things were cheap' or 'that faith is a mans good meaning & his good seruing of God (A2v).' The first of these reflected the sort of unthinking nostalgia for the old days that was the despair of Reformers (Whiting 1989), while the second exhibited the strongly residual 'bargaining' mentality in which the service relationships that governed everyday life were ascribed to the relationship between the human and the divine. This is the residual erroneous belief system Perkins confronted among men and women who believed that particular acts or verbal formulae relieved them of their obligations to God. Many of these revolved around the idea that mere repetition of forms and set phrases can avail:

That God is serued by the rehearsing of the ten
 commaundments, the Lords praier, and the Creede
 That however a man live, yet if hee call vpon God on
 his death bedde, and say *Lord haue mercy on me*, & so goe
 away like a Lambe, he is certainly saued

That if a man remember to say his praiers in the morning
(though he never vndersta[n[d them] he hath blessed
himself for all the day following.

That a man prayeth when he saith the ten
Commaundements.

That a man need not haue any knowledge of religio[n]
because he is not book learned. (A2r-v)

Each of these ‘ignorant opinions’ is based upon the idea that simple repetition of verbal formulae has some sort of purchase upon God; a cognitively optimum position that fulfilling the basic requirements placed upon the believer is enough to guarantee salvation. Eradicating such beliefs was central to controversies over public and private prayer and sermons. As we have seen, the concern over rote repetition and saying without understanding can be traced through a wide range of catechistical materials. Perkins’ tract was aimed at those who had mastered the Prayer Book catechism and could recite those Commandments, the articles of faith, and the Lord’s Prayer, as required by the Church of England for confirmation. But for a Puritan divine such as Perkins, such requirements were almost dangerous, since they could lead to the sort of complacency and ignorant confidence in salvation that he represented in his list of opinions. Perkins explained:

I answere again, that it is not sufficient to say all these without booke, vnlesse ye can understand the meaning of the words, and bee able to make a right vse of the Co[m]mandements, of the Creede, of the Lords prayer, by applying them inwardly to your hearts and consciences, and outwardly to your lives and conuersations. This is the point in which ye faile. (A3v)

To avoid the specter of ‘vain repetition’ Perkins provided an additional six principles designed to bring readers to ‘true knowledge, unfained faith, and sound repentance’ (A3v). These foundations reiterated fundamental Calvinist principles: the omnipotence of God, the corruption of man, salvation through Christ; justification by faith alone; the primacy of preaching for faith; and the damnation of the wicked at the Last Judgement. In keeping with the ‘enfolded’ approach favored by many writers of didactic material, the principles were first presented very simply, on three pages, and then unfolded or explained more largely, also in question/answer format. Perkins recommended that the six principles first be learned ‘without book, & the meaning of them

withal,' after which the advanced student could learn the remainder of the material: 'which being well conceived, & in some measure felt in the heart, ye shall be able to profit by Sermons, whereas now ye cannot' (A3v).

The efforts of Perkins and others seem to provide a confirmation of Whitehouse's argument that 'religious traditions [tend] to eschew certain cognitively optimal concepts and to peddle more complex bodies of knowledge in their stead' (2004: 45). We see Perkins here battling a drift to the 'cognitively optimal position,' in which relationships with God mirror the networks of obligation and fulfillment characteristic of earthly relationships. If piety is defined as being able to repeat a set of texts such as the Decalogue and the Lord's Prayer, then fulfilling that duty should mean that 'God is served.' But Perkins's intervention is meant to correct such drift. As Matthew Day points out, moving away from such 'modal attractor positions' (Whitehouse 2004: 76) requires an additional level of social, material, and cognitive scaffolding that is placed as an overlay upon the first set. That is, the six principles, which must be first learned 'without book' and then rehearsed more fully, must be added to the first level of requirements of a simple knowledge of the principles of faith. As Day suggests, 'high frequency repetition, administrative supervision, and bureaucratic structures associated with the doctrinal mode hang together in such a way to produce a transmissive strategy that can reliably pass on a stable body of cognitively demanding religious doctrine' (Day 2005: 97). In this, Day argues, we observe the 'ratcheting effect' that Michael Tomassello has argued is characteristic of cognitive evolution: 'Ratchets can slip and 'the gravitational tug of the COP [cognitively optimal position] can easily overwhelm the mode dynamics as soon as any element of the sociocultural scaffolding begins to give way' (Day 2005: 98). To keep something 'in the head' involves recruiting a massive level of social, institutional, and material scaffolding, particularly when the targeted material is not designed with the constraints and fallibility of the human memory system in mind. Aspects of the construction and reconfiguration of some of this scaffolding are explored in the next chapter, in the context of sacred space.

3

Sacred Space: The Reconfiguring of Cognitive Ecologies in the Parish Church

Spatial environments

Spatial environments constitute a key component of our cognitive ecologies, helping to configure the form of religious worship, directing the attention of worshipers and providing physical shape to the construction and transmission of religious forms. This chapter applies Extended Mind theory to aspects of early modern English religion within the context of the parish church in order to deepen our current understanding of how people experienced worship in this period. The parish church was the heart of established religion in England, regulating the rhythm of worship. Psychologically as well as physically close to the center of their parishes, churches were focal points of communal activity which extended far beyond worship (Marsh 1998; French *et al.* 1997). It was within the spatial confines of the local parish church that religious change enacted at a national level was most acutely felt. Exploring the configuration, decoration, and forms of human interaction within these churches, in particular the construction and use of sacred space as external scaffolding to the cognitive experience, highlights ways in which worship was partially shaped and affected by the physical and material environment in which it was conducted. We focus especially on the sermon, arguably the most significant transformed element of worship in the newly configured Protestant ecology, around which debates about memory and attention were center-stage and the boundaries between cognition, social systems and material culture contentiously redrawn.

Sacred space

Historians have been slow to take an interest in sacred space. The concept of sacred space has been foundational to sociological distinctions

between the sacred and the profane at least since Mircea Eliade (Eliade 1961; Hamilton and Spicer 2005: 2). Historians are belatedly exploring the form and function of sacred spaces, the degree to which they are innate or constructed, fixed or movable, defined by space, time and practice, and what these spaces can reveal about religious experience, notions of holiness and people's relationship with the divine.¹ The Reformation and Counter-Reformation are increasingly seen as equally 'creative and adaptive forces' reconstituting, reforming and refocusing sacred spaces in rapidly changing political, social and cultural environments. The Reformation era witnessed a highly charged inter- and intra-confessional contestation over the definition and delineation of sacred space, holy objects and material culture in worship, ritual and gesture, and the role and reliability of the senses in worship. The creation of the new Protestant singing burrows was controversial, contested and protracted for well over a century (Coster and Spicer 2005: 4; Flather 2007: 135).

Late medieval Catholicism incorporated a complex conception of sacred space. There were many loci of sacred space, of which local churches were only one, many avenues by which lay folk could approach the holy, and different zones of holiness and boundaries across some of which only the clergy could step (Coster and Spicer 2005: 9). Within the church could be found the fullest repertoire of ritual, symbols and practices designed to bridge the gulf between literate and illiterate and bind together the entire community in communal practice. Church teachings were not just spoken and performed, but also 'carved and painted on the walls, screens, bench-ends, and windows of the parish churches' (Duffy 1992: 3). As a 'mysterious succession of spaces' (Scarlsbrick 1984: 164), Catholic churches were visually stunning – bright, lavish and gilded (Todd 2002: 316). The bells that called the faithful to prayer and marked out the most sacred moments in the service, the ubiquitous flicker of candle lights on the altar and around the church and the smell of incense, signifying the effect of grace but popularly believed to drive away evil spirits, were all constituent elements in the Catholic sensorium, cueing worshipers into a sophisticated extended system of religious cognition (Hamilton and Spicer 2005: 7–8).²

The Mass itself, as we saw in the previous chapter, was a piece of carefully choreographed high drama, preceded by a procession up to the altar during which holy water was sprinkled on the clergy (Marsh 1998: 32). The clergy at the altar in the east end of the chancel were physically and symbolically separated from the laity in the nave by the rood screen – the stone or wooden partition between chancel and nave upon which was mounted a great crucifix flanked by statues of Mary

and John and smaller images of the saints (Duffy 1997: 133). The spectacle of the Mass was designed both to be seen – and to see it was to be blessed – and to be difficult to see. Christopher Brooke has described the ‘perverse ingenuity’ that provided every conceivable obstacle to the human gaze in the form of elaborate carved woodwork with squint holes in screens that grew ever higher and more opaque (1971: 165–6). Where post-Reformation chancel screens were employed, such panel apertures invariably disappeared (Whiting 2010: 9). In larger churches, medieval worshipers could visually partake of successive masses by following the sacring bells. In a foretaste of later Reformers’ complaints, the Lollard William Thorpe described his distress in St Chad’s Church in Shrewsbury in April 1407 when the sacring bell rang whilst he was preaching and people noisily headed off to a different part of the church to try and catch a glimpse of another elevation of the host (Hudson 1988: 150).

European Protestantism adopted a simplified concept of sacred space, rejecting up to a point the sensory and material elaborations of the sacred identified with Catholicism, and the role of intermediaries in approaching the holy (Hamilton and Spicer 2005: 8). The Reformation in England, for all its confusions, anomalies and compromises, did ultimately change the symbolic world in which people lived, and alterations in spiritual practices demanded profound changes in the material as well as social surround of worshipers (McDermott and Hauser 2007: 5). Such changes ranged from the obvious and destructive – no one can tour the parish churches and cathedrals of England without becoming aware of Reforming attempts to transform the very fabric of the church in the quest to root out forbidden images – to subtler and less obvious reconfigurations of, for instance, the relationship between song and worship, or new modes of attention demanded by new religious priorities. How did Protestants learn to sing in Catholic burrows? Or, more precisely, how did they rebuild the burrows so that their songs could be heard?

Parish worship

After the violent upheavals of the Edwardian years, and the partial turning back of the clock under Mary, it was the Elizabethan religious settlement that ensured that worshipers in their local parish experienced both dramatic changes and subtle continuities in the substance and style of their church services and the decoration and material decor of their churches (Fincham and Tyacke 2007: 31–5; MacCulloch 2007: 14).

An ongoing battle of wills between a Reformist queen with humanist principles probably more inclined to Lutheranism and returning exiles impassioned by ongoing Reformations at Geneva and Strasbourg, the durability and inflexibility of the Settlement surprised many. Whilst the 1563 Thirty-nine Articles and Archbishop Parker's Advertisements of 1566 both represented clear statements of Reformation theology that aligned the English Church with Reformed Churches on the Continent, elements of the Elizabethan Prayer Book – the retention of the priest's surplice, the blending of the words of communion to allow continued belief in a real presence and permitted kneeling during moments of the service – ensured that there were familiar sights, sounds and gestures to accompany the novel doctrine.

The most striking element of continuity between later Protestant and earlier Catholic worship, though, lay in the buildings themselves. In England, as on the Continent, Protestant Reformers inherited the physical spaces of worship used by their Catholic predecessors. People continued to be baptized and married in the same churches, and buried in the same graveyards, as their ancestors had been (Marsh 1998: 29). George Yule has noted that more churches were built during James I's reign than is usually appreciated, but for the most part Reformers remodeled the internal visual, aural and olfactory configurations of existing buildings according to the nature of their theologies and liturgical preferences, writing over but not eradicating the memory of previous configurations of sacred space (1994: 189).

Within this familiar space, the scale of change was unmistakable. Christopher Marsh has described the transformation between the early and late sixteenth century in terms of the pathway to heaven being redrawn. Where once the path lay in communal participation in the seven sacraments, performance of good works and faith in Christ, with intercessory help from the saints, the Virgin Mary and the priesthood, now the sacramental life was heavily circumscribed, good works served only an indicative not instrumental purpose, and guidance came only from Christ in the form of Scripture. The priest became the minister, and of the clerical garb only the surplice remained. A service once conducted almost entirely in a foreign language was now in the vernacular; the English Bible, Prayer Book and Psalter replaced the array of mass books, portises, ordinals, martyrologies, processions, manuals, antiphoners and graduals (Whiting 2010: 85–98). The Lord's Prayer and Creed remained central, but there was no procession, sprinkling of holy water or passing out of the paxbread. Mass was now communion, and in most churches the stone altar was replaced by the wooden

communion table. Wafers were still used in a communion service that was less frequent but in which the laity participated to a greater extent (Marsh 1998: 32–6). Church plate, including chalices and candlesticks, paxes, patens and chrismatories, had been systematically confiscated, spasmodically sold and occasionally stolen (Whiting 2010: 53–70). The local chantry priests had gone, as had the polyphonic choir singing, and after the 1560s organ playing was rarely heard in parish churches although it was not entirely silenced (Fincham and Tyacke 2007: 64–6); music more commonly now took the form of unaccompanied metrical psalms, the significance of which is explored in Chapter 4.

The sensory signals of the sacred – lights, bells and smells – were heavily curtailed. The balance between artificial and natural light was already shifting during the Henrician reforms; in 1536 three lights were still allowed on the altar, sepulchre and in front of the rood but by 1541 only a solitary altar light was permitted (Platt 1981: 149; Hamilton and Spicer 2005: 8). Instead of flickering candles and the illumination of stained-glass windows, reformers preferred to create natural light through clear-glass windows reflecting off whitewashed walls (Hamilton and Spicer 2005: 9); ideology was tempered by prudence though, with it seems a tacit understanding in many places to allow the stained-glass windows to decay naturally rather than be destroyed on account of the high replacement costs (Marsh 1998: 62). The Elizabethan parish church also smelled differently, at least during divine service. The burning incense was gone, no longer a signal to parishioners that they were in sacred space. A bell might still be rung, but now it was prior to the sermon rather than the elevation of the host – a clever redirection of familiar cues to signify a reorientation of the sacred and to highlight where the worshiper's attention was most required within the service (Hamilton and Spicer 2005: 8; Coster and Spicer 2005: 14).

Worship was now conducted in surroundings less visually impressive from a traditional perspective, less distracting from a reforming one. As the balance tilted from image to text and from ceremonial gesture to personal reflection, the material culture of parish worship was transformed to reflect the new priorities in the cognitive burrows (Marsh 1998: 23–4, 55). The stripping away of much of the clerical garb and material paraphernalia of worship, the removal of most images and statues leaving empty niches and pedestals, the dismantling of the rood-loft displays, the whitewashing of walls and painting of scriptural texts, the removal of minor altars from the nave, transepts and aisles, the demolition of shrines and the removal of reliquaries, all contributed to the transformation of Scarisbrick's mysterious succession of spaces into

something more akin to 'a single, open auditorium' (Scarbrick 1984: 164; Marsh 1998: 58; Whiting 2010: xiii–xx, 48–51, 149–66). The agitation in the 1640s noted by John Morrill regarding the survival of popish elements in parish churches including candles, crosses and images connected with the Virgin Mary and the saints indicates a degree of lax enforcement that must, as Marsh suggests, have eased the transition to Protestantism in many local contexts but this does not detract from the scale of the change imposed (Morrill 1982: 94).

Revisionist historians have lamented the process that brought about this transformation, the successive waves of iconoclasm that wreaked irreparable damage and destruction to the fabric of traditional religion across the country. Duffy has described iconoclasm as 'the central sacrament of the [Edwardine] reform,' one not of remembrance but of obliteration (1992: 480). C. John Somerville has spoken of how a combination of legislation, extortion and crowbars 'transformed sacred space into a wasteland' (1992: 32). Unlike in many continental territories, iconoclasm in England, at least before the Civil War, was predominantly an activity carried out by lawfully constituted authorities.³ However, local initiatives at the parish level have been identified, for instance the unofficial destruction of altars from late 1548 in London and at least eleven other counties ahead of a national policy to replace them with wooden tables in 1550 (Fincham and Tyacke 2007: 13–17). Marsh has aptly described the impact of the restoration of Catholicism under Mary and the reversal of the Marian programme under Elizabeth as 'the most turbulent and bewildering that English parishes have ever endured' (1998: 58). Elizabeth retained a fondness for church ornament, music and monuments, and had to be dissuaded from restoring rood images to churches in 1560 (Fincham and Tyacke 37–8), but royal commissions of her senior Protestant clergy unleashed what has been called 'a ruthless campaign of systematic vandalism in church furnishings' (MacCulloch 2007: 9).

Iconoclasm, though, should not be viewed as an entirely destructive activity; it was intended as a cleansing of the temple designed to reequip English churches for the new reformed worship of the word rather than the image (MacCulloch 2007: 12, 13). The process of fashioning the new cognitive burrows was complex, but it certainly had its constructive elements. As part of the reformers' reconfiguration of the spatial environment for worship, removing extraneous elements and reprioritizing those that remained, it was neither a process of desacralization nor secularization. Concepts of the sacred continued to define individual and corporate identity, and a divine cosmology continued to determine people's perceptions of their place in the world (Sommerville

1992: 18–32). Imagination played a role alongside the sledgehammer: redundant chasubles were turned into carpets for the new communion tables, and apparently doubled as hearse cloths, whilst albs were converted into surplices or used as linen cloth to cover the bread and wine during communion services (Fincham and Tyacke 2007: 63; Yates 2008: 22; Whiting 2010: 81).

Driving the iconoclasm was an obsession with the issue of imagery and idolatry, and the extent to which the former could serve a constructive pedagogical purpose as text for the illiterate – scaffolding for the weaker mind – without being perverted into the latter. Martin Luther's greater faith in the cognitive value of imagery in educating and inculcating faith and morality in pious Christians resulted in churches markedly closer in interior decor to their Catholic predecessors than those of his more iconophobic Zwinglian and Calvinist counterparts (Scribner and Roper 2001: 97). The English Church, reflecting the predilections of its bishops more closely than its Supreme Governor, adopted a broadly hostile Calvinist perspective on imagery – as the reformer Hugh Latimer asserted, dead images could remind people of things absent but they were not to be worshiped (Duffy 1992: 390). The result was a dramatically simplified church interior, somewhere between Lutheran and Reformed, less stripped than churches north of the border but the brightly gilded icons and furnishings were a thing of the past (Watt 1991: 136, 138; Spraggon 2003: xiii).

Marsh has proffered the empirically unverifiable but nevertheless intriguing suggestion that our sixteenth-century ancestors must have possessed more active and extensively used imaginations than us and that this mitigated the apparent harshness of a religion of words imposed upon a people accustomed to a religion of image and ritual. Mental imagery, Marsh suggests, substituted for the pictures that once adorned now whitewashed walls (1998: 12). The late medieval liturgy had contained a tradition, emphasized in ceremonies like Candlemas, which stressed, as Duffy observed, the 'spiritual value of vivid mental imagining of the events of the life of Christ, especially his Passion' (1992: 19). The Protestant concern with imagery extended to what Aston has termed 'idols of the mind' (1988: 464–5). Malcolm Smuts has suggested that Puritans tried to avoid using mental imagery in their religious mediations, distrusting visual imagination as a pietistic tool (1987: 229). Arnold Hunt, though, has countered Aston and Smuts by noting that in certain contexts, for instance communion, Protestant writers could exhort supplicants to imagine and reflect upon the Passion in strikingly emotional terms not dissimilar from their Catholic counterparts

(1998: 58–60). As the bread was broken and the wine poured, ‘this should stir thee up to bee in the same estate,’ wrote the Puritan preacher Richard Sibbes, ‘as if thou wert upon Golgotha, at the place whereupon he was crucified, crying with a loud voice, My God, my God, why hast thou forsaken me?’ (Sibbes 1629: Aa6v). Meditate on Christ crucified advocated George Webbe, preacher and later bishop of Limerick, ‘as if with thine owne eyes thou diddest then behold his body nayled to the Crosse’ (Rogers *et al.* 1625: G7v.; Hunt 1998: 58–60). Susan Hardman Moore has also argued that Protestant reform did not sever the imaginative link between the worshiper and the object of their worship and that visual elements and verbal imaging continued to play an important role, not least in the surroundings of the parish church and the sermons to which parishioners gave their attention (2006: 281–96).

Sermons

Sermons, often lengthy ones, were now the focal point of the church service. For Protestant reformers, hearing the word preached in the form of the sermon was one of the most important of all ‘online’ activities. While Protestantism is often thought of as a religion of the book – with its rallying cry of *sola scriptura* – the English church of the late sixteenth and early seventeenth century put an equal (or even greater) emphasis upon *hearing* the word preached, since ‘the liuely voice of the teacher, is more effectual and piercing than bookes, which are but as dumbe schoolemasters or teachers’ (Zepper 1599: C1r). This argument, which is virtually omnipresent in the literature on sermons, suggests that the key to balancing insides, objects, and people is to place emphasis upon the sense of hearing, for it is this sense that has the ability to penetrate, that animates the subject. ‘Hearing’ in this ecology means not simply listening, but *attending*, listening actively and retaining what is said. As Gina Bloom suggests, following the work of Bruce Smith and Wes Folkerth, ‘sound – verbal and nonverbal – shaped in fundamental ways the processes of subject formation in early modern England’ (2007: 114), and this work took on particular force in the case of the exercise of hearing.

To create conditions for attending – not simply attendance – an entire cognitive system was necessary, in which the rich sensory modalities of Catholic worship were replaced by practices designed to support attention to and later recall of the word preached. It would be a mistake to think of this change as a shift merely in individual cognitive practices; instead, an entire system was put into place. In the new cognitive

ecology, the work of memory was *distributed* across the preacher, the parishioner, the book, (sometimes) writing, and the physical environment of the church, since the activity of all these agents and structures was needed to support the costs of remembering. One instance of a shift in cognitive strategies associated with the changing remembrance environment involved the new requirements on the faithful in Protestant England to recall sermons after having heard them once. As we shall see, this was a particularly demanding requirement that required a high level of cognitive scaffolding, since the act of recall could not depend upon simple repetition born of long habit, but instead required online processing of novel information.

As we have seen in the previous chapter, worship in Protestant England demanded a new economy of attention centered upon learning and remembering one's spiritual duties, especially as laid out in scripture. Protestant polemic contrasted habitual mindless action, associated with the Catholic Mass, to an ideal of shared attention, exemplified most starkly by the Protestant sermon. Indeed the title page of John Foxe's *Actes and Monuments* is organized around precisely this trope of contrast. In Illustrations 3.1 and 3.2, the left and right bottom cartouches of the title page contrast the two forms of worship. On the left (Illustration 3.1), Catholic worshippers attend a sermon, but crucially they do not attend *to* it. Rather, they sleep, count their beads, or gaze



Illustration 3.1 'False Faith' (Foxe 1583)



Illustration 3.2 'True Faith' (Foxe 1583)

into space. On the right of the cartouche, the Corpus Christi procession offers a further diversion from the word preached, and far more worshippers follow behind the host than are seated at the sermon. Distraction, boredom, and inattention characterize Catholic worship in this representation. In contrast, the Protestant worshipers (Illustration 3.2) are attentive, upright, and consult lap books rather than count rosaries (Aston 1984: 185–6). This woodcut provides a visual analogue to the verbal polemic about the dispersed nature of Catholic worship. Similarly, in the woodcut 'Ship of the Roman Church' Foxe represents the 'Papists' loading their 'trinkets' on a boat (Illustration 3.3). In Illustration 3.4, a detail from the woodcut represents the cleansed temple under Edward VI, once the 'papists' have moved out. In this detail, hearing of the word is visually fore-grounded, with the rows of attentive listeners looking up at the sober preacher, representing the 'lively word': the word preached, ideally composed for the occasion by an educated minister, heard, apprehended, and remembered by an attentive congregation. Indeed, in this period we see a 'fundamental change in the image of the minister's duties' (Carlson 2001: 255) to emphasize preaching above all other ministerial duties, including administration of the sacraments.⁴

As can be seen in these illustrations, new demands for a particular kind of attention are met by changes in the physical environment of the church – a new cognitive singing burrow, if you will. To attend and to



Illustration 3.3 'The Ship of the Roman Church' (Foxe 1583)

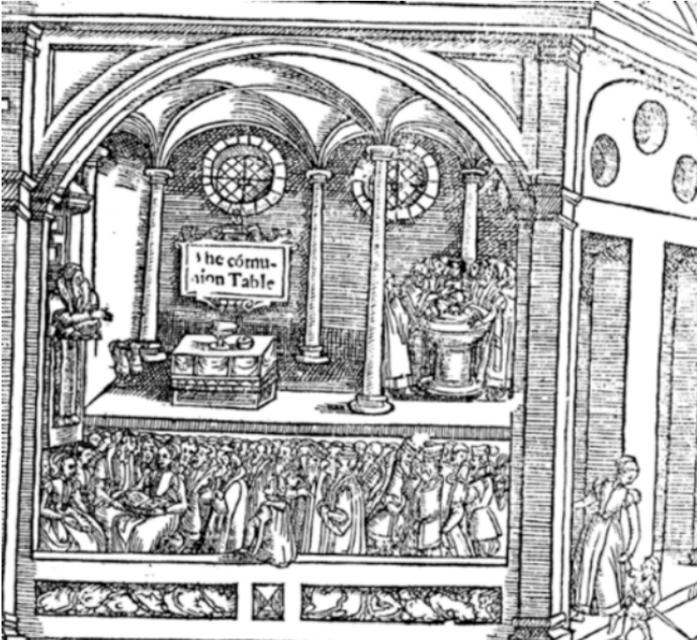


Illustration 3.4 'The Temple Well Purged' (Foxe 1583)

remember, one needed first to hear, and medieval church architecture was ill-adapted to the spoken word (indeed, most sermons were delivered in the church-yard outside). Julia Merritt has shown that medieval churches, in which the high altar was the most prominent interior feature and pulpits were only gradually being installed in the century before the Reformation, 'were not especially well suited to the needs of parishioners attempting to hear a minister preaching a lengthy sermon,' and a reorientation of space was necessary to support demands for a new form of attention (Merritt 1998: 946). The pulpit and the lectern gained increasing importance as the Reformation went on. In England, effectively the church was divided into two liturgical spaces: for the daily service and preaching, and for the sacraments.⁵ As naves became preaching spaces, and the pulpit intruded further into the body of the church, preaching took precedence over communion and 'the most eye-stopping feature of church furniture became the pulpit' (Wabuda 2004: 150–1). Ministers and church wardens experimented with the positioning of the pulpit to try and maximize the audibility of the preacher and negate the acoustic difficulties of operating within medieval churches designed with different priorities (Merritt 1998: 946). The prioritizing of the sermon also prompted the development of the Church of England's only notable contribution to the material furnishing of Reformed worship – the three-decker pulpit. With a reading desk and parish clerk's desk below the pulpit, equipped with large folio prayer books and rich hangings to match the altar carpet, three-decker pulpits presented a powerful visible identification of the intimate relationship between prayer and preaching (Yates 2000: 33; Yule 1994: 190; Yates 2008: 73).

The centrality of the sermon to Protestant worship prompted further reconfigurations, including the introduction of forms of seating for parishioners. Medieval worshippers were accustomed to a somewhat peripatetic experience in church, standing, kneeling and sitting on stone benches for fairly lengthy periods but also moving around freely (Aston 1990: 250–1, 256). In the early seventeenth century, open benches remained the most popular form of communal seating, but by the end of the century most churches had adopted the box pew, which offered greater comfort for the long sermons as well as more privacy, but physically separated its occupants from their fellow parishioners (Yates 2000: 36). For the gentry, the pews became increasingly ornate and prominently positioned, often between the pulpit and the chancel (Yule 1994: 191). Parishioners might take their own seating with them in the form of folding stools; Jenny Geddes notoriously launched hers at the local Bishop in St Giles's, Edinburgh, in 1637,

initiating the riots against the imposition of the English Prayer Book (Aston 1990: 252).

As Margo Todd observed, Protestants replaced Catholic icons with their own – the Bible (2002: 328–31). Scriptural texts, especially the Lord's Prayer and Ten Commandments, were painted on the church walls or displayed on boards, often on and above the pulpit to emphasize the importance of preaching, as at Yaxley in Suffolk where the words 'Necessity is laid upon me, ye woe is me if I preach not the Gospel' (1 Cor. 9:16) were inscribed (Yule 1994: 189). This display of scripture, alongside the prioritization of the sermon, thus ensured that the primary visual and aural feature of the church became the Word, written or preached.

Remembering long chunks of text heard aurally is one of the more difficult cognitive tasks it is possible to set, especially if the text is composed for occasion rather than familiar from repetition. It is of course virtually impossible to attain verbatim memory in such circumstances, nor would such an outcome have been desired, given the fear that sermon manual writers often evince of being 'tied to the letter,' or the precise words of the sermon. However, close recall of the major points of the sermon was exhorted as part of one's spiritual duty in innumerable tracts, with titles such as *The Boring of the Eare, Hearing and Doing, The Jewell of the Eare* and *The Art or Skill of Hearing* (Egerton 1623; Mason 1656; Wilkinson 1602; Zepper 1599). Performing this spiritual duty – demonstrating the memory and attention that Perkins described as essential to faith – required somatic discipline, an ordering of the body to sustain attention. As Elnathan Parr wrote: 'In hearing, three things are requisite: first, Attention; second, Intention; third, Retention. The first ordereth the body, the second the vnderstanding, the third the Memory. Attention is when the whole body, but especially the eare, and the eie are reurently composed to heare the word' (1615: c3r–3v).

Henry Mason prescribed that attention will be aided 'if we use such posture of the body, as may be apt to keep our senses waking, and to drive away heaviness & sleep' (D1r). Congregants were to position themselves so that 'the eyes and eares of euery one must be attent to the mouth of the minister ... and all things there must be receiued with hungrie appetites, and as it were greedy minds' (Zepper 1599: 65). The author of *Jewell for the Eare* tells us:

Our attention hath fiue great enemies, the first is a straying thought, when all the powers of our soule should wait upon the voyce of the Preacher, then our minds [are] in our Coffers, or our Pastures, or else

where they should not be ... the second is a wandering eye, gazing after every picture, vpon every moath or flie, and rowling vp and down in euery corner. The third is a needeless shifting and stirring of the body, a fumbling with hands, and a shuffling with the feet, a rising and remouing from place to place, when there is no cause to prouoke us. ... The fourth is an vnreuerent talking, and unciuill laughing in the Church. ... The fift is a secure and senceless sleeping.

(Wilkins 1602: B5v–6r)

These injunctions advocate a bodily disposition for the receptivity to the Word preached. The believer is to be positioned within an architectural infrastructure conducive to hearing, and within that framework to discipline the senses so that hearing predominates over other sensory modalities. Behind these injunctions is a vision of the dispersed and inattentive nature of the Catholic service. While the environment can be restructured, the believer must be integrated within it, regulating his bodily movements to bring about the shared moment of attention that is to be the highlight of the service.

Perhaps the most important means of scaffolding memory was the tight relationship between the production and reception of the sermon. If sermons are to be remembered, the preacher must make them memorable, and mnemonic work is therefore distributed across producer and recipient. For many preachers, memorability meant method: dividing one's sermon into heads and subheadings, along the lines advocated by Peter Ramus in his *Logic*.⁶ Although division itself is an ancient technique far pre-dating our period, the popularity of methods based on Ramist and quasi-Ramist techniques points to a new concern for a kind of reciprocal mnemonic practice (Carruthers 1990: 104–6). John Wilkins defined method as 'an art of contriving our discourses in such a regular frame wherein every part may have its due place and dependence: which will be a great advantage both to (1) our selves; (2) our hearers' (1646: A4v). He described method as 'a chain in which if a man should let slip any one part, he may easily recover it again, by that relation and dependence which it hath with the whole' and argued that 'hearers are equally benefited who may understand and retain a Sermon with greater ease and profit, when they are before-hand acquainted with the generall heads of matter that are discoursed of' (A4v). Similarly, John Willis in his *Mnemonica* used the memory-as-chain trope, a metaphor designed to call attention to the links between speaker and hearer:

Four things must be observed, that speeches contrived by ourselves may be deeply fastened in memory: Method, Writing,

Marginal Notation, and Meditation; the Method ought to be so disposed, that every part of an entire Speech, and every sentence of those parts, precede according to their dignity in nature; that is, that every thing be so placed, that it may give light to understand what followeth; Such a method is very effectual to ease the memory of both Speaker and Hearer; for in a speech methodically digested, each sentence attracted the next, like as one linke draweth another in a Golden Chain; therefore Method is called the Chain of Memory; For this cause let every former sentence so depend upon the latter, that is may seem necessarily related thereunto. (1661: B7v–B8r)

As Zepper (1599) commented in a marginal note: ‘Mens memories many times hurt by the want of method in the preachers’ (G4r). The high cognitive costs of close recall are met by creating a variety of constraints upon production and reception of oral material and require a shared skeletal structure that can be produced by the speaker and reproduced by the listener.

Perkins gave somewhat short shrift to memory as a separate topic in the *Arte of Prophecyng* (1607), his highly influential preaching manual. Little specific attention to memory was needed in part because observing method was said to ‘naturally’ produce memorability, without the need for so-called ‘artificial’ systems. Perkins regarded imagistically-based artificial memory systems such as those described by Frances Yates (1966) as ‘impious’ because the ‘animation of the image’ upon which it depends ‘requireth absurd, insolent, and prodigious cogitations, and those especially which set an edge upon and kindle the most corrupt affections of the flesh’ (1607: I6v). Perkins advocated instead an internalization of the external structures of method made available by new printing technologies, especially the use of sophisticated charts and tables. As Lori Ferrell has pointed out, Calvinists such as Perkins exploited new cognitive technologies, employing the technical resources of printing, which were deployed to create elaborate and tactically inviting tables and figures that ‘embodied a fundamental pedagogical message: *you can grasp the truth of this idea as readily as you do this book, as skillfully as you do this page*’ (2002: 137). Perkins wrote:

It is not therefore an vnprofitable aduise, if he that is to preach doe diligentlie imprint in his mind by the helpe of disposition either axiomaticall, or syllogisticall, or methodicall the seuerall doctrines of the place he meanes to handle, the seuerall proofes and applications

of the doctrines, the illustrations of the applications, and the order of them all. (I7r)

This mental imprinting of structures that are represented externally on the printed page nicely demonstrates the importance of the ‘culturally sculpted internal surrogates’ Sutton discusses (2010a: 214). Determining whether such tables are internal or external cognitive artifacts is impossible; what this example shows is precisely the permeability of such boundaries within a distributed model of cognition. For the permeability does not simply exist between internal and external cognitive structures of an individual agent; rather, speaker and hearers work within a distributed structure mediated by a range of cognitive technologies. The nature of this reciprocity between speaker and hearer is made apparent in recommendations for the ‘after-thought’ or rumination upon the sermon, an activity often likened to a cow chewing cud. Afterthought involved rehearsing and impressing into memory the key points of the sermon – a mental compression of the key points.

The memory is hereby helped also, because in the first hearing the material points, were clothed & covered (as wee may say) with many words of amplification and enlargement: which though they had their use for moving of affections, yet are some hinderance to the memorie, which is lesse able to treasure up necessary points, when they are cumbred with so many circumstances. But in our after-thoughts, when wee consider again, what wee have heard, wee may single out the bare matter from the Rhetorick and lay the necessary points by themselves alone: and then they will not onely be contracted into a narrower roome, more easie for the memorie, but besides, each thing will appeare in its due order and place, which will help the memory to remember that, which otherwise it would have forgotten. (Mason 1635: H11r)

Preachers seeking to create memorable – or perhaps memorizable – sermons used a method based upon the ubiquitous typographical tables in dominant handbooks. The method, not the words themselves, constituted the structure, for preachers were repeatedly warned not to be tied to particular words, but to memorize the method and to reproduce it, with necessary amplifications, for the listeners. In their turn, in ‘after-thought,’ listeners stripped the sermon of such amplification, contracting the sermon ‘into a narrower roome’ conducive to memory.

Just as PowerPoint, our contemporary hegemonic cognitive technology, shapes both production and consumption of presentations, the ubiquity of cognitive technologies based upon the resources of the page shaped the forms of memory in the early modern period.

Attention and memory are also aided by cognitive artifacts, prostheses such as books and writing. A key artifact to aid memory was the Bible, and it was recommended that the Bible be taken to holy service 'to prove by the Scriptures that which is taught' and to reinforce the memory of the scripture cited during the service (Whittingham 1560: *2r). Zepper directed that all those who enter the church, especially 'Citizens and townsmen,' should:

haue alwaies in a readiness the holie Bible, that so they may ... the better turne ouer and harke[n] unto that chapter or those chapters of the Bible, which vpon the Lords daies especially in the ordinary reading of the Bible are wont & ought to be read, as those textes likewise, which are expounded in the Sermons. Furthermore, they must at the least note with some marke, such testimonies & texts of Scriptures also, as in the Sermone time are alleged and were either not known before, or not understood, as they should haue been; or else in which they marked some speciall point, that so they may more diligently meditate vpon them at home & cause them to become more familiar to them. ... And this custome of bringing their holy Bibles with them, will manifest in them no meane or common argument, both of excellent zeale towards the word of God, and also of a mind, that is very desirous to profit in that truth of God, which bringeth saluation. Neither can it but cause that to take deepe roote in them, which by one and the selfe same labour of two of our most notable senses that is by the helpe of hearing and seeing, is conueyed to the mind. (1599: E6r–E7v)

The book here extends the cognitive reach of the worshiper, but only if correctly employed. Integrated into the online experience of attending to the sermon, the Bible can allow memory to fish with two hooks rather than one, reinforcing the visual and the aural. However, the book reinforced memory only if used synoptically with the preacher; that is, only if used to find the precise verses cited in the sermon and hence reinforce memory of the 'text,' the verse or verses which the sermon treats. If used otherwise, the book was also in danger of becoming another agent of dispersed attention, such as the Book of Hours; it can

become one of the very distractions enveighed against, since reading 'is not to giue attendance to the things that are spoken.'

And it is one thing, according to the present occasion, and as it were by the way, to seeke out and to marke, by turning the holy Bible onely some one testimonie or other, which was alledged in the Sermon, that we may the more diligently mediate of it at home (of which also we haue spoken heretofore) and another thing for a man wholly to giue himself, and that of set purpose, in publike space to his own priuate reading. (Zepper 1599: F4v)

While reading the Bible could support memory and attention, it could equally lead to the same dispersed and parallel practice associated with the prayer books of old.

Finding verses cited in the Bible is itself a fairly complex cognitive skill, requiring knowledge of the order of the books of the Bible, as well as a haptic ability to find one's way through it:

That thou mayst with greater facility turne unto any *Chapter* or *Verse* here quoted. My advice is, that thou committ to *Memory* the names of the Bookes of the *Old* and *New Testament*, as they are orderly, and ordinarily set down in the leafe that immediately precedes the first Chapter of *Genesis* (in all Bibles) which will not onely much further thee in the speedy finding out of any Verse here set downe: But also inable thee with farre greater *celeritie* to turne unto any place which the *Preacher* shall in his *Sermon* cite, for the proouing of any *Doctrine* or *Vse* whatsoever. The want of which (as I have often obserued) hath caused many (in *Church*) to tesse the leaues of their Bibles to and fro (to seeke the place hee nominates) and oftentimes to close the *Booke* without finding of the same.

(Warre 1630: G7r–8v)

Such 'tossing' of the leaves of the Bible could itself be a distracting form of display, as Thomas Heywood's (1636) satirical portrait of a 'Hypocrit' makes clear:

His seat in the Church is, when he may be the most seene: in the time of the Sermon he drawes out his tables to take the Notes, but still noting who observes him to take them. At every place of the Scripture cited, he turnes over the leaves of his Booke, more pleased with the motion of the leaves, than the matter of the Text: for hee

folds downe the leaves, though he finds not the place, his eye being still fixt on his paper, or on the Pulpit. (B2r)

Heywood here mocks the performative note-taking and verse-foraging that marks the hypocrite, whose 'body is in Gods church, when his mind is in the divels Chappell.'

Singing the same tune

However diligently Reformers refashioned their cognitive burrows, the production of harmonious song depended on the collective commitment of the singers within. It is unsurprising then that Reformers concerned themselves not just with the hypocrites, but also that category of person historians, following Alexandra Walsham (1993: 1–21), commonly call church papists. English Catholics, facing the appropriation of their public sacred spaces by Protestants and the loss of their communal locales and ritual structures, had to completely restructure their own ecology of worship (McClain 2002: 381–2). Martyrdom, rebellion, exile, recusancy, and occasional conformity were all unpleasant options physically, spiritually, psychologically or materially (Walsham 2006: 160–227; McCoog 2005).

Whatever else was prescribed or proscribed in terms of religious behavior, attendance at Sunday service in the local parish church was the fundamental basis for statutory conformity.⁷ For many, occasional conformity was a tolerable price to pay to avoid stiff legal sanctions, especially if they behaved in such a manner as to indicate their contempt for the service and its minister and to disrupt the worship of others; this took the form of walking up and down the aisles or reading devotional books aloud, or overtly or covertly continuing to use proscribed gestures like signing with the cross and objects like rosary beads (Questier 1996: 100; Walsham 2006: 191). The rosary played a particularly important role in Catholic devotion in Elizabethan and Jacobean England. English Catholics traded in a wide array of sacramental items including crosses, crucifixes, *agni dei*, images, and holy water, but none were more significant than the rosary. Small, portable and easily concealed, they provided, as discussed earlier, an essential devotional tool for English Catholics to worship at home, silently in public or in their parish church (Dillon 2003; McClain 2003).

For others, attending church services and thus being seen to validate the religious changes by sharing and worshipping within Protestant sacred spaces was unacceptable. At the Winchester Assizes in 1591,

Ralph Milner declined the offer of freedom to return to his family in return for attending Protestant services, declaring the loss of his soul too high a price, and joined the ranks of the martyrs (Walsham 2000: 211). Recusancy offered the possibility of recreating that sacred space necessary for the practice of prohibited religious beliefs within the household, as for instance the Yorkshire butcher's wife Margaret Clitherow attempted for many years whilst living with her conforming husband. Margaret engaged daily in hours of private prayer and meditation and took Mass twice weekly. She frequently accommodated priests in her house and acquired all the material paraphernalia, including vestments, chalices and images, for Catholic worship. She turned her home into 'a priest's house, a Mass center and a Catholic school' (Lake and Questier 2004: 72). Such a choice could come at a heavy price; Margaret was crushed alive in March 1586 for failing to plead to an indictment under the 1585 statute making harboring a priest a felony offence (50). The price of faith did not fall equally on all members of English society. Following the death of the first Viscount Montague, an occasionally conforming Catholic, in 1592 his wife Lady Magdalen took over his role as protector of Sussex Catholics and maintained a household at Battle of some eighty persons, many if not most of whom were Catholic. Her biographer records that she built a chapel there with a beautiful stone altar, a pulpit and choir; congregations of over a hundred would regularly gather (Southern 1954: 43; Questier 2006: 207–32).

Catholic apologists provided guidance and strategies to help the faithful cope with the forced restructuring of their religious environment. In *A new manual of Old Christian Catholick Meditations 7 praier* (1617), the missionary priest Richard Broughton advocated adopting various degrees of physical and mental detachment from non-believers, using their bodies to maintain separation when in unavoidably close proximity through gesture or words, reciting Latin prayers, surreptitiously using tactile mnemonics like the rosary, or imaginatively transporting themselves to a separate place (McClain 2002: 383–4). The Jesuit Henry Garnet (1593) stretched the practicalities of dissimulation to the limit by suggesting that the faithful send a proxy into their enclosed pew to fool the vicar.⁸ The Jesuit Robert Southwell constructed in *A Short Rule of good lyfe*, published posthumously in 1598, perhaps the most elaborate re-conceptualization of space for English Catholics, instructing them how to transform rooms in their houses into imaginary chapels or shrines, replete with the material paraphernalia of traditional worship – a mental escape from the physical reality of life in Protestant England.

The bodies of believers became, as Lisa McClain puts it, physical spaces or canvases 'which could be manipulated and reinterpreted' (2002: 399).

If the intrusion of papists posed one threat to the Protestant religious ecology, then, in the eyes of many, popish innovation from co-religionists presented another and perhaps greater one. During the later 1620s and 1630s, a number of changes were introduced to the form of religious worship in parish churches, enthusiastically championed by some but bitterly denounced by others. The changes, involving elaborate refurbishment and greater ritualism, constituted the greatest transformation of parish worship since the 1560s and represented a partial reversal of the shift from image to word driven by the sixteenth-century Reformers (Fincham and Tyacke 2007: 227). Building upon calls from the turn of the century towards re-edification from a small group of avant-garde conformists, the process was driven by Archbishops William Laud and Richard Neile with the backing of Charles I with the design of making churches 'glow with the beauty of holiness' (Lake 1993: 165).⁹ There was a renewed emphasis upon the numinous and an elevated regard for sacred places and objects. The spatial dimensions and material culture of worship were reconfigured by proponents of the Laudian program who seized the opportunity for 'extravagant experimentation in furnishings, imagery, and ritualism' (Fincham and Tyacke 2007: 227). By 1637 the Laudian polemicist Peter Heylyn could speak approvingly of how churches were 'more beautified and adorned than ever since the Reformation' as images, or idols in the eyes of puritans, previously confined to royal chapels or cathedrals, returned more prominently to parish churches (Heylyn 1637: 86; qtd Fincham and Tyacke 2007: 227).

The localization of the sacred promoted by the Laudians was anathema to many Calvinists, who hurled accusations of superstition and idolatry at their counterparts. No change aroused greater opposition than the permanent positioning of the communion table, or altar as many Laudians preferred, at the top of the chancel, altarwise and railed in, an arrangement seen in most parish churches by 1640. During the Jacobean era, the vast majority of communion tables had been placed table-wise, with their long sides facing the north and south walls, in the center of the chancel, and sometimes moved into the nave during celebration of communion (Yates 2000: 31). Moving them, railing them in, and removing any seating from behind or near them, created a sanctuary into which the laity could not enter, emphasizing the holiness of the sacrament and reintroducing segregated sacred space. The creation, or re-creation, of sacred spaces into which only the clergy could step

altered the interaction between worshiper and minister, tilting the religious ecology and suggesting an imbalanced or dependent relationship that was deemed by many inimical to mainstream Calvinist theology (Yule 1994: 195).

In many jurisdictions, reception of communion kneeling at the rails was enforced or encouraged as greater reverence towards the altar, the 'greatest place of God's residence upon earth' in the opinion of Archbishop Laud, was enjoined. At the altar 'God is there specially to be worshipped, where he is most praesentiall,' wrote Jeremy Taylor (1990: 222). Gestures including bowing, or 'cringing' as opponents charged, towards the altar became increasingly common (Fincham 1993; Tyacke 1993; Fincham and Tyacke 2007: 148, 176–227, 251–3). The cathedrals, the Laudian mother-churches, served as models of ideal practice. The altar at Westminster Cathedral was adorned with a purple velvet carpet edged with gold lace, silver candlesticks and a silver bowl. In parish churches, Fincham and Tyacke have demonstrated the extent to which enthusiastic patrons, clergy, churchwardens and parishioners acquired altar cloth and plate, installed wainscot and stained glass and adorned the chancel walls with pictures (253–65). Laudian bishops used their diocesan visitations to enforce covering and railing in the altar, and to encourage the installation of prominent paintings or panels inscribed with the Ten Commandments, Creed or Lord's Prayer behind the altar and the placing of candlesticks on the altar. Churchwardens were instructed to replace defective chalices, repair cracked or broken fonts, and to purchase altar cloths, silver patens and cloths for the holy bread. Illustrated Bibles appeared in a few English parish churches. Many Protestants, and not just Puritans, associated Bibles with pictures with popery – there were none in the Authorized Version – and an illustrated Bible printed in Edinburgh to mark Charles I's visit in 1633 provoked a furore (Fincham 2001; Moore 2006; Fincham and Tyacke 2007; Yates 2008). The organ music that had largely died out in Elizabethan times, particularly in the south and east of the country, was encouraged again (Fincham and Tyacke 2007: 246).

Julie Spraggon suggests that the institutional emphasis on ceremony and the beauty of holiness in the 1630s provoked an iconoclasm different in nature from the previous century 'in that its targets were within the Protestant church, a church which was already supposed to have been reformed of such things' (2003: 30). Adiaphora were proving to be far from matters indifferent. As David Cressy has observed, they had come 'to encode alternative visions of community, worship, and godly devotion' (2000: 186). Unsurprisingly, few complaints about Laudian

ceremonialism could match John Milton's for vitriolic eloquence. Milton complained of a 'new-vomited Paganisme of sensual Idolatry' and accused bishops of having overlaid 'the plaine and homespun verity of *Christ's* Gospell ... with wanton *tresses*, and ... all the gaudy allurements of a whore' (Spraggon 2003: 178).

Cathedrals bore the brunt of iconoclastic sentiment; some radicals, including the Quakers, wanted all cathedrals demolished. On 28 December 1641 there was an attack on the altar and organ of Westminster Abbey (Spraggon 2003: 54–7, 69, 177). Canterbury Cathedral suffered a similar invasion the following year, with the altar overturned and the rails smashed by parliamentary soldiers (Collinson 2001: 195). The House of Commons had set the tone in November 1640, only holding communion at St Margaret Westminster after the communion table had been moved into the center of the chancel and the rails demolished (Fincham and Tyacke 2007: 275). Local initiatives followed swiftly. In March 1641, a group entered the church of St Peter Wolverhampton at night, removed the altar rails and moved the communion table (275). Also not tarrying for legislation, on 11 June 1641 parishioners at the London church of St Thomas the Apostle tore down and burned the communion rails, likening them to Dagon, idol-god of the Philistines (Cressy 2000: 186–8). A Commons' Order for the Suppression of Innovations in September 1641 effectively reversed the Laudian program, removing communion tables from the east end and dismantling the rails, banning offensive gestures like bowing at the name of Jesus, removing offensive images of the Virgin Mary and crucifixes, and stripping away furnishings including candlesticks and basins. Further ordinances in 1643 and 1644 ordered the destruction of monuments of superstition and idolatry. By the late 1640s, the Laudian reformation had been reversed in most parishes (Fincham and Tyacke 2007: 276, 284; Spraggon 2003: 54–80).

The Restoration religious settlement was not a straightforward victory for former Laudians, as Robert Bosher claimed, but neither was Laudianism a 'spent force' in 1660 as Green has suggested.¹⁰ Laudian ideals exerted a considerable influence over a significant element of the new ecclesiastical leadership as the components in the ecology of worship were once again reconfigured. The concept of sacred space evident in the 'beauty of holiness' program reasserted itself. The cathedrals led the way again though the most elaborate ritualism was contained within the chapel royal (Fincham and Tyacke 2007: 305, 355). Music from the pre-Civil War era was reintroduced, though outside the north and west most parishes did not re-acquire organs. Gestures that had previously stoked controversy – bowing to the altar and making the sign of the

cross – were reintroduced but failed to arouse the animosity of earlier times (Gregory 1995; Fincham and Tyacke 2007: 335–6, 349; Yates 2008: 76–8; 1991: 41–2, 63). The use of incense returned, although this seems to have died out after the early eighteenth century (Yates 2008: 92).

Incrementally, after some years of diversity, most parish churches were restored to something closely resembling their pre-Civil War appearance, with the process accelerating during the Tory reaction of the 1680s. The Laudian preference for the pulpit and reading desk placed together in one of the eastern nave angles leaving the altar, fixed and immovable and railed in on a raised dais, to stand alone in the chancel was the most common arrangement in Anglican parish churches well before the close of the seventeenth century (Yates 2000: 32; Fincham and Tyacke 2007: 317–35). East end altars became a standard element in the over fifty London churches rebuilt by Christopher Wren and his disciples in the 1670s and 1680s, with ecclesiastical authorities taking the opportunity to insist that they were railed in, and they included chequered paving and an ascent of steps (2007: 305, 325). Altars in most parish churches around the country were less lavish, more commonly made of wood than stone, and ornaments including candlesticks on the altar were rare, but altarpieces behind the altar often included images of Moses and Aaron as well as the Ten Commandments, Lord's Prayer and Creed (2007: 325). Wren's London churches included richly carved pews, elaborate paneling on the pulpit, patterned plasterwork and marble fonts (2007: 347). Even chancel screens, which Wren disliked, made a limited return. Upon being presented to the living of St Peter's Cornhill, London, William Beveridge, later bishop of St Asaph's and a pivotal figure in the founding of the Society for the Promotion of Christian Knowledge, insisted on installing a screen to enclose the chancel for communion.¹¹ Wren's designs show how Protestants, no longer obliged to work within the confines of the complex spatial configurations of Catholic worship with its boundaries separating priest and worshiper and multiple foci of worshipful attention, reconfigured sacred space according to different priorities of visibility and audibility (Sommerville 1992: 32; Fincham and Tyacke 2007: 327). It was a configuration that would remain dominant until the influence of the Gothic Revival and Tractarian theology in the early nineteenth century prompted another turn towards greater ritualism and another shift in the ecology of worship in English parish churches (Yates 2008: 113–23; Yates 1999).

4

Cognitive Ecologies and Group Identity: Print and Song

In accounts of memory and cognition in the English reformation, the effect of print, particularly of the Bible, in shaping religious identity is often given pride of place. John Foxe's famous praise of printing in his *Actes and Monuments* credited the art of printing with overthrowing Papal power: through the power of the press, 'tongues are knowne, knowledge groweth, iudgemēt increaseth, books are dispersed, the Scripture is seene, the Doctours be read, stories be opened, times compared, truth decerned, falshod detected, and with finger poynted, and all (as I sayd) thorough the benefite of printing' (Foxe 1583: 707). Following this lead, A. G. Dickens argued that Protestantism was 'from the first the child of the printed book' (1966: 51). Such claims have been challenged by, among others, the research of Robert Scribner (1994), Patrick Collinson (1988), Andrew Pettegree (2005), and Tessa Watt (1991) into the variety of media used by Protestant Reformers; as Walsham has pointed out, 'at least initially, Protestantism and print formed a somewhat uneasy coalition' (2000: 77).

The relationship between print and English Protestantism can be further scrutinized in light of the triad of insides, objects, and people governing our investigation of the cognitive ecology of the English Reformation. In particular, Elizabeth Eisenstein's (1979) influential argument for the cognitive effects of print in the early modern period can be effectively revisited through the lens of Distributed Cognition/Extended Mind. Eisenstein's argument is in turn predicated upon a far wider set of debates in anthropology, rhetoric, and linguistics, about the so-called cognitive effects of literacy. The best-known articulation of this claim is perhaps Walter Ong's dictum that 'writing restructures consciousness' (1982: 78). Ong's work is in turn based upon that of Eric Havelock (1982) and, especially, Jack Goody, whose literacy thesis

has been vigorously debated since its first articulation in a germinal article co-authored with I. P. Watt in 1963. Goody and Watt contrasted the life-world of pre-literate peoples, who transmit their heritage through 'a long chain of interlocking conversations between members of the group' (306) with the widespread use of alphabetic literacy in Athenian Greece. Although they acknowledge the importance of social and political factors, they make a claim for the independent effect of alphabetic literacy, particularly in developing something that looks like a modern view of history. In this view, literacy affords abstraction, rational thought techniques such as the syllogism, and a depersonalization of the past. In contrast, oral cultures are relatively homeostatic and homogenous (51). In this view 'writing allowed a quantum jump in human consciousness, in cognitive awareness' (Goody 1998: 1), although such changes were built upon 'the embryonic achievements of oral cultures' (2).

As Michael Cole and Jennifer Cole write in 'Rethinking The Goody Myth' (2006), such formulations generated enormous debate, sparking new research both by Goody himself and by those seeking to test his claims.¹ Without exhaustively surveying such responses, suffice it to say that key issues were the implicit devaluation of one pole of the assumed dichotomy between writing and orality (Halverson 1992); the failure to account for confounding factors such as schooling (Scribner and Cole 1981); the specter of technological determinism; and the implicit Eurocentric teleology by which alphabetic writing represented the pinnacle of human achievement. As we shall see, the notion of the divide itself has been exploded in recent years; in the early modern period scholars such as Keith Thomas (1976), Andy Wood (1999) and Adam Fox (2000) have shown that the supposed divide is in fact a permeable and shifting boundary.

The wider literacy thesis has been recapitulated in the related field of print culture, particularly through a series of debates between Eisenstein and Adrian Johns. In her 1979 book Eisenstein argued that printing was 'an unacknowledged revolution' (3), a technological advance often mentioned in passing but seldom accorded its full due in such realms as religious controversy and the burgeoning of modern science. In these areas, such properties of print as standardization, fixity, and organizational techniques 'helped to reorder the thought of *all* readers' (105). In *The Nature of the Book* (1998), Johns vigorously attacked this thesis, arguing that the apparent fixity and standardization of print was a myth and that Eisenstein's concept of 'print culture' is 'oddly disconnected ... in her work printing itself stands outside history ... placeless and timeless' (1998: 18–19). For Johns, Eisenstein ascribes agency

and effects to a technological *process/product*, not to the labors of the individual agents: 'Readers consequently suffer the fate of obliteration: their intelligence and skill is reattributed to the printed page' (19).

This argument was reprised in a testy exchange in the pages of the *American Historical Review* (2002), in which Eisenstein compared Johns' thesis to the American National Rifle Association canard, 'Guns don't shoot, people do' (Eisenstein 2002: 89). In reply to Johns' criticism that she emphasizes 'impersonal processes' (Johns 2002: 116) and endows the press with 'intrinsic virtues,' (124) Eisenstein argues that 'any complete account of "print and knowledge in the making" ... must make room for changes in communications technology as well as for personal agency' (Eisenstein 2002: 90). In his reply, Johns argues that Eisenstein is positing her own version of the Great Divide, this one between script and print rather than orality and literacy. Eisenstein argues, says Johns, that 'the press created a fundamental division in human history' (Johns 2002: 107). Johns is particularly critical of Eisenstein's argument for the power of print itself, asking 'whether (and to what extent) readers are truly autonomous or are constrained by the texts before them' (110). Arguing instead that scholars should focus 'on the complex social process by which books came to be made and used [and that] ... the development of print should not be ascribed primarily to individual actions but to collective practices,' Johns concludes that 'an apt slogan for the approach might be something like "guns don't kill people, society kills people"' (116).

We will return to this rather unilluminating impasse in a moment, noting here only the persistent binary logic that underpins it. It is necessary first to disentangle the various threads that contribute to this dispute and to see to what extent the concept of Distributed Cognition/Extended Mind can move us past it. These issues have been revisited by Richard Menary, who attempts to marry linguistic integrationism with Extended Mind theory in a paper entitled 'Writing as Thinking' (Menary 2007b). As Menary acknowledges, the impetus for his paper was a short piece by the linguist Roy Harris on 'How Does Writing Restructure Thought?' (1998). In this paper, Harris systematically dismantles some of the assumptions behind arguments that literacy transforms consciousness/cognition. The first of these is the 'romantic' view (100) of writing that underpins much of the discourse on literacy. In particular, he targets the claim that the alphabet is the pinnacle of human achievement. Writers such as Havelock (1982) have made extravagant claims for the alphabet on the basis of its supposed superiority to other inscription systems. The basis for this claim is that

the western alphabet allows writing most closely to represent speech and thus to facilitate the release of 'psychic energy' (Havelock 1982: 87) – the relief of the immense mnemonic burden of storage. Harris points out that the Greeks were unaware of the so-called phonemic principle that would underpin a genuinely phonetic writing system, and that the apparent truism that the alphabet represents speech is a mere back formation – a product of the way that writing makes us conceptualize language. David Olson puts it like this: 'writing systems create the categories in terms of which we become conscious of speech' (1996: 100). Harris has further attacked the notions that writing provides liberation from the burdens of remembering and that writing merely provides a means to store knowledge (2001).

Moreover, much of the discourse about literacy exemplifies the strong 'written language bias' (Linell 2005) that Harris argues undergirds much of the discipline of linguistics. The implicit equation of language with written language often results in its reification, the sense of language as a 'thing' rather than an active, dynamic, distributed process. Ruth Finnegan (2002) has surveyed models of communication that reinforce this reification including the 'message-transmission' model (14), the semiotic-code model (18), and the 'mental representation' model (21). What these hold in common 'is the idea of communication as a matter of the intellect' (12). In a later essay, Finnegan advocates attention to the entire range of human communication:

the spotlight is thus turned on people's actions, rather than on self-standing systems of signs, and on people's active deployment of a wealth of varied resources. Verbal language in the narrow sense is indeed one of these, and an important one – but only one ... humans also regularly exploit such diverse tools as facial expression, gesture, bodily orientation, spatial indications, movement, touch, images, and a variegated range of material objects, from scepters, flags, or guns to meaningful apparel, stethoscopes, and pulpits. (2006: 279)

In this spirited critique, Finnegan uses 'cognitive' or 'cognitivist' as a term of opprobrium, equating 'cognitive' approaches to literacy with internalist models of mental representation – the message frame that dominates communication theory. As we have argued, however, distributed models reject such internalist presuppositions and thus offer a much more fluid and flexible way of understanding these phenomena.

If with these points in mind we now revisit the question of whether literacy restructures consciousness, the answer is obvious – of course it does. The Distributed Cognition/Extended Mind approach holds

that 'the realm of the mental can spread across the physical, social, and cultural environments as well as bodies and brains' (Sutton 2010a: 209), entangled in the 'feedback, feed-forward, and feed-around loops' described by Clark (2008: xxviii). The paraphernalia of inscription systems – a term that deliberately encompasses far more than alphabetic writing – are among the most obvious and far-reaching of the tools through which humans create extended cognitive systems. It is no accident that the founding thought experiment of Extended Mind theory was consulting a notebook.² As Wilson and Clark argue, writing systems are 'perhaps the most striking examples of sociocultural cognitive resource ... a relatively durable public cognitive resource crucial to education, training, regimentation, commerce and military conquest in the Western world for millennia' (2009: 63). However, the particular case of literacy needs to be seen as *one* of the myriad forms of cognitive extension. It has been privileged far above other modes of communication that do not typically leave traces, including dance, song, and gesture. Thus we should not allow our own strongly chirographic biases to convince us that writing – especially alphabetic writing – has some unique or special power to transform thought. Instead, it needs to be seen within the larger framework of the whole array of extended cognitive systems, including, crucially, social systems.

But are we not thereby back into the Eisenstein-Johns impasse, debating whether guns, societies, or printing presses kill people? We are not – precisely because Extended Mind theory does not view exterior objects and tools as either inert or as cognitive in themselves. Recent revisions and clarifications of Extended Mind theory – among them Clark's discussions in *Supersizing the Mind* (2008), Rob Wilson (2004), Michael Wheeler (2005) and Richard Menary (2007a) emphasize that it is crucial that 'the relevant external features are *active*' (Clark 2008: 222). Only then can the object or a practice be considered part of an extended system; it is not itself 'cognitive,' although its availability potentially alters the cognitive ecology. For this reason, the question – does literacy restructure consciousness – is put in a misleading way, since it assumes a pre-existing brainbound system that operates in isolation until literacy gets hold of it – 'the myth of the isolated mind,' as Merlin Donald (2001: 16) calls it.

For these reasons our accounts of remembering in the early modern period are dynamic and ecological, not focusing on one set of artifacts or practices at the expense of others. The narrow view that equates 'cognition' with abstract modes of literate thought is not sufficient to engage the full repertoire of habits and practices that constituted acts of memory and attention in the Reformed church. A model of

cognitive ecology rejects the binaries that would locate agency *either* within individual subjects *or* within technological-cognitive artifacts. Rather, the availability and proliferation of printed materials undoubtedly re-shapes the cognitive ecology, but only insofar as these new objects alter available possibilities for remembering and experiencing, and in turn shape the social field.

In the remainder of this chapter, we examine two sets of contrasting case studies of the effects of print and writing on memory and identity: the Bible, including its reception and representation in John Foxe's *Actes and Monuments*; and the history of metrical psalm singing. Taken together, these examples point to the crucial importance of an ecological approach in addressing the effects of technologies such as print within a distributed cognitive framework.

Reading the Bible

Green's *Print and Protestantism in Early Modern England* (2000) surveys the vast array of printed material produced for Protestant consumption during the long Reformation. He uses a 'wide-angle lens' (vii), emphasizing the devotional books that sold well over a long period of time rather than the controversialist literature: 'in terms of sheer numbers these didactic, edifying and devotional works may have constituted much the most striking use of the printing press in early modern England' (vii). A full survey of this sort is well beyond the scope of this book, though it is important to emphasize that Green's account of the landscape of print in our period helps us gain a better picture of the role of the book in a reformed cognitive ecology.

As we might predict from their pre-occupation with set forms, Reformers were anxious that Bible reading not become a mere formal device or another means of distraction, as we saw in the previous chapter. The Elizabethan homily 'A Fruitful Exhortation to the Godly Reading of the Scripture' constructed an ideal Bible reader, repeatedly using the common trope of 'imprinting' to stress the importance not of mere repetition, but of the active and heartfelt understanding and amendment of life that comes from proper reading:

This word whosoever is diligent to read, and in his heart to print that he readeth, the great affection to the transitory things of this world shall be minished in him, and the great desire of heavenly things, that be therein promised of God, shall increase in him For that thing, which by continual reading of Holy Scripture, and diligent

searching of the same, is deeply printed and graven in the heart, at length turneth almost into nature. (1623/1997: 85–8)

Mere mechanical or verbal facility is not enough, for ‘in reading of God’s word, he not always most profiteth, that is most ready in turning of the book, or in saying of it without the book; but he that is most turned into it’ (104–6). We saw in the previous chapter that the Bible could indeed be a distraction if it were used mechanically or ostentatiously during sermon time; as so often in Reforming discourse, value is placed upon an active, online integrative model of reading.

An example of a technical innovation that meshed with internal mechanism, objects, and social systems was the rapid spread of verse division, an increasingly sophisticated use of typographic layout and other aids in the vernacular Bible to support and guide the reading process. The term ‘chapter and verse’ is so common that we may forget how relatively recent an invention consistent verse divisions were. In his fine essay on ‘Navigating the Bible,’ Peter Stallybrass reminds us that the first printer to use verse divisions was Henri Estienne in 1551. The first complete English Bible employing them was the Geneva Bible of 1560, following an English New Testament with verse divisions published three years earlier in Geneva (Stallybrass 2002: 72–3). The innovation of verse division was a result of technical advances in printing and was quickly adopted in all Bibles, including the Catholic Rheims-Douay translation that was commissioned in order to combat Protestant facility with the text of the Bible. Prior to this innovation, each page was divided into lettered sections, so that one might cite, for example, the third chapter of Genesis, section A. This reference identified the general area and was useful for looking up references in one’s own Bible, but it did not provide an instant ‘code’ for invoking a particular passage in the way that verse divisions did. As will be seen in the section on Foxe, expert readers of the Bible had always had a good recall of the particular chapter and ‘sentence’ alleged in the Bible; indeed, a sense of the Bible as comprised of ‘sentences,’ or worthy and memorable sayings, was part of the general tendency in the period to ‘chunk’ precepts into commonplaces as a means of organizing complex material into smaller units to facilitate memory (Carlson 1997: 60).

Verse division, which gave the Bible an aphoristic effect, had far-reaching consequences for the cognitive work of remembering, but it also changed the perception of what the Bible was. In his New Testament, William Whittingham called attention to his innovation in ‘deuid[ing] the text into verses and section[s] according to the best

editions in other languages' (Whittingham *et al.* 1560: **iv). The editors of the Geneva Bible claimed to have followed the 'hebrew example,' 'which thing as it is most profitable for the memorie, so doth it agree with the best translations' (Whittingham *et al.* 1560: iiiii). At the same time, this approach tended to work against what John Locke called the 'strength and coherence' of the work. Locke complained about dividing Paul's epistles into chapter and verse, 'whereby they are so chopp'd and minc'd, as they are now printed, stand so broken and divided, that not only Common People usually take the verses for distinct Aphorisms, but even Men of more advanced Knowledge, in reading them, lose very much of the Strength and Force of the Coherence' (Locke 1705/1987: 105).

Verse divisions, however, were too great an aid to a newly culturally valued goal of verbatim memory of the vernacular Bible to be discarded. 'Breaking and dividing' the text into short verses indeed privileges memorability over coherence. The desire for coherence is a readerly demand, while the goal of memorability reflects the hybridity of oral and written forms of expression in this period. Moreover, the use of a common and simple citation format created a shared scriptural vocabulary and frame of reference that was quickly adopted by writers of devotional and scholarly material. Thus the explanatory mechanism for the rapid uptake of the verse division must be seen across a range of factors, including its compatibility with internal mechanisms of memory due to the mnemonic affordance of chunking; the technological improvements in *mis-en-page* on the part of printers; and the forging and reinforcement of social bonds facilitated by a shared system of reference.

The system of verse division, then, was a crucial means of facilitating the cognitive integration of reader with text. The work of integration, often figured as a 'pricking' or 'piercing,' guaranteed that the word of God would not be inert knowledge but could instead be performance transformative work. One of many examples of such a use of print can be found in Nicholas Byfield's *Directions for Priuate Reading of the Scriptures, wherein beside the number of chapters assigned to euey day, the order and draft of the whole SCRIPTURES is methodically set downe* (1618), which Green describes as 'the most practical and comprehensive, and the most "godly", work yet published' (2000: 147). The 'private reading' that Byfield prescribed – as opposed to the public reading of the scriptures that would be carried out in church – involved complex physical and social negotiations among reader, bible, book, pen, paper, calendar, and self that in some ways prefigured the practice of spiritual autobiography. In the dedication to Sir Horace Vere and Lady Mary Vere,

Byfield wrote that 'I haue long obserued that in the most places the godly that are vnlearned, are at a great want of a setled course' in the reading of the Bible (A3v). This Byfield attempts to supply through a variety of means: 'analytically tables,' which amount to brief summaries of the contents of each book 'that the Reader might before hee reads, marke the drifte of each book and Chapter, and when hee hath read, might with singular ease and delight remember, what hee hath read' (A5r–A5v); a calendar directing 'what number of chapters are to be reade euery day' (A5v); and 'the Rules for obseruation of profitable things in reading' (A5v). The analytical tables were simply brief summaries of the contents, with little attempt, apart from their brevity, to make them memorable in themselves. For Byfield, the most important element of his system was following the 'rules' for profitable learning. The reader must note two things: 'the most needfull places to enlarge his own knowledge' and 'such places, as might warrant his practice in the things, the world usually cavils at and reproaches.' Byfield's reader was to become a writer, a 'gatherer' of those passages in the scripture that provided 'sensible comfort and raushing of heart' (A7r); those that 'sensibly smite ... and reprove some fault' (A7v); and, finally, 'certaine rules and counsells, which one sensibly is affected withall, and hath an inward desire, oh that I could be remember this counsell of the holy Ghost' (A8r).

Each of these categories has in common the word 'sensibly,' meaning in this period 'of feeling: Acutely, intensely' (*OED*) and often in the early modern period associated with 'godly' inclinations, marked by a desire to ensure an affective relationship between the believer and his tools. This was a thread, as we have seen, in godly denunciations of merely formal or rote models of memory; that is, the 'sensible' model is persistently opposed to the 'rote' or the external in this trope.

Byfield had specific instructions for generating and maintaining a 'sensible' model of reading:

Now for the maner of using these rules, I thinke, thou maist profitably follow these directions. First make thee a little paper booke of a sheete or two of paper, as may be most portable: then write upon the toppe of euery leafe the title for that thou wouldest obserue in reading. Chuse out only six or eight titles out of the whole number of such as for present thou hast most need to obserue, or onely so many as thou art sure thy memory will esily cary to thy reading, whether more or fewer. In reading obserue only such places as stare thee in the face, that are so evident, thy heart cannot [but] looke of them. (A10r–v)

The hybridity of memory – as it is distributed among Byfield’s book, the ‘sensible’ categories sparked by the reading of the Bible and carried in working memory until they could be transferred to the paper book, and the Bible itself – is invoked vividly in a treatise that presented a subject shuttling among books, reading, writing, and self-examination. We can perhaps see here in nascent form the model of spiritual autobiography that was to become dominant in non-conformist circles in the late seventeenth century (see Hindmarsh 2005). Remembering the Word in this context was no rote recitation, but a profoundly affective yet materially distributed practice.

Foxe and the active reader

One of our best sources for a model of an active, engaged and socially distributed mode of reading is John Foxe’s *Actes and Monuments*. What is most striking in Foxe is the emphasis upon an active and engaged form of memory within the pages themselves. The martyrs Foxe records have indeed been ‘turned into’ Scriptures, as the Elizabethan Homily exhorted. But such a process is by no means a simple transaction between silent reader and text, but is instead inextricably engaged in extended networks of sociability which challenge simple intracranial models of memory.

Foxe’s *Actes and Monuments* is an iconic text for the English Reformation. This project in many ways exemplifies attempts to create new cognitive singing burrows for early modern England, replacing the objects of late medieval piety with a Reformed ‘remembrance environment’ (Zerubavel 1997: 81). As has been argued throughout this book, the Reformation is about *remembering*, or more particularly about the relationship between objects in the world and their cognitive, affective, and spiritual purchase on the individual. Foxe’s volume had an avowedly commemorative function: to chronicle the ‘actes and monuments’ of the Marian martyrs, and to place these ‘actes’ within a particular redaction of Christian history. First published in 1559 in Latin, its first English edition appeared in 1563, and it was reprinted three more times in Foxe’s lifetime: 1570, 1576, and 1583. Each new edition involved not only massive additions to the chronicles, as new sources came to light and as Foxe extended the historical sweep of the book, but also new rhetorical framing, polemic, retractions, and addition and deletion of paratextual material such as prefaces and dedicatory letters. It also had a long after-life and was published in the nineteenth and twentieth centuries in updated forms that included material on missionaries and the like.³

After many years of neglect, there is now a robust industry of publication on Foxe, thanks in large part to the online edition edited by David Loades. Of particular recent interest has been the wealth of information about reading practices and literacies in the book.⁴ One particularly striking example of the social and cognitive distribution of reading is Foxe's account of the circulation of a small group of religious books and manuscripts in 1521 Lincolnshire. The acts of reading are chronicled in an intricately designed typographical table, itself evidence of the ability of printing to construct and organize knowledge. These records reveal the ways that written materials served to link and constitute underground religious communities in pre-Reformation England. Initial information about the presence of banned books and manuscripts apparently began a cascade of accusations and counter-accusations that gives us a glimpse into the myriad uses of writing in this period:

Thomas Rowland accused John Scriuener the elder 'for carrying aboute Bookes from one to another.' (823)

Thomas Holms detected the wife and daughter of Benet Ward 'for saying that Thomas Pope was the deuotest manne that euer came in their house, for he woulde sitte readyng in his booke to midnight many times.' (824)

Holms also said that John Butler, Richard Butler, and W. King 'sate vp all the night in the house of Durdant of Iuencourte by Stanes, readinge all the nighte of a Booke of Scripture.' (826)

John Norman accused John Barret 'because he was heard in his own house before his wife and mayd there present, to recite the Epistle of S. James: which epistle with many other things, hee had perfectly without book.' (826)

John Grosar confessed that he receaued [a book of the Gospels in English] of Thomas Tykill Masse Prieste in Milkestreete and afterward lente the same booke to Thomas Spenser, which Thomas Spenser with hys wife vsed to read vppon the same. After that it was lent to Job Knight who at length deliuered the boke to the Vicare of Kikemansworth.' (829)

A group of thirteen men and women were 'reading together in the booke of the exposition of the Apocalyps, and communed concerning the matter of opening the booke with seauen claspses.' (832)

Alice Colins 'was a famous woman among them, and had a good memory, and could recite much of ye scriptures and other good bookes; And therefore when an conuenticle of these men did meete at Burford commonly she was sent for, to recite vnto them the

declaration of the x commandements, & the Epistles of Peter, and James.' (834) (1583)

A wide range of interactions with a small number of texts is described here, from the mesmerized midnight readers to the accomplished reciters to the 'communers' on the meaning of symbols in Revelation (the 'Apocalypse'). This community can only be made visible through its dissolution, and the cycle of accusation ultimately destroyed the circle of readers. One member burned his books, saying that 'he had rather burne his bokes than that his boks should burne him' (833). Those condemned were forced to carry a 'fagot of wood' on their shoulders as penance and to carry a piece of wood to a heretic's fire; four relapsed and were themselves burned, including John Scriener, whose children were required to bear wood to his execution. Throughout this long tale, Foxe ensured that his own readers saw the significance of the persecution – his marginal notes continually repeated 'for reading the Scriptures in English.'

These books and manuscripts were not simply read; they were pored over, memorized, recited, expounded, and explained, in a network that fluidly combined printed books, manuscripts, memorized texts, and argumentation all within a context of complex patterns of affiliation and sociability. Demonstrating the blurring of the lines between oral and literate 'reading,' these accounts bear out Thomas' (1986) argument that we must think of 'literatecies' rather than a monolithic and static literacy in this period. Indeed, as discussed above, what emerges in its stead are local and particular accounts of the fluid, shifting, and permeable circulation of oral and literate material across class and social divides.

But this is not to say that print and writing had no effect; indeed, that effect was profound. Extended Mind/Distributed Cognition would indeed predict such a result, as human beings, as they have always done, appropriate new tools and develop new 'coupled systems' as a result of the availability of new technologies. Yet the mere existence of a technology or a set of cognitive artifacts does not guarantee a new cognitive ecology, and thus neither side of the binary argued by Eisenstein and Johns necessarily holds. Foxe provides a model of memory for reformers; this is not rote repetition, but active, engaged memory of the Bible that can be deployed in 'real time.'

In such a system, the scraps of texts circulated both physically and socially indeed seem to work as 'internalized cognitive artifacts,' in Sutton's terminology. Sutton suggests that 'We use a wide range of

stratagems to bootstrap, manage, transform, and discipline our minds, and these techniques can co-opt internal surrogates as worldly exograms' (2006: 240). One example of such a stratagem is the Renaissance art of memory, 'through which monks and scholars learned rhetoric and meditation and trained their wandering minds in the craft of thought' (240). In a related essay, Sutton claims that such technologies 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. The cognitive skills which individuals roam round with, more or less successfully, have histories which are just as much cultural and developmental as biological' (Sutton 2010a: 209). The men and women about whom Foxe wrote were no medieval monks, of course; nor on the whole did they have training in the artificial memory arts. Protestant Bibles eschewed decorative motifs and replaced them with typographic reading aids. But the form of the book provided a scaffolding for active, dynamic and assured acts of memory that were profoundly sculpted by their experiences with written records, whether or not they were actually able to read them.

In the extended section on the Marian martyrs, the narratives Foxe recounted demonstrate a striking variety of forms of access to scripture. As with the Lincolnshire martyrs under Henry VIII, knowledge of the Bible is not dependent on possessing 'literacy' in the way it is ordinarily understood. A number of the martyrs were nearly illiterate by any measure, yet they have 'heard' and remembered books through more educated relatives, friends, or neighbors, in a network of social and kin relationships intimately traced by Foxe. Nor was it necessary to physically possess a book. John Barret recited all of James, and Alice Colins is singled out as a particularly valuable member of the Lincolnshire community because of her extraordinary mnemonic powers, making her a walking reference book for the faithful.

The long accounts in *Actes and Monuments* of the martyrs under Queen Mary provide the most compelling evidence of the operations of memory and literacy in Foxe. These men and women were profoundly shaped by Reforming practices under Edward VI, and Foxe's representation of their interrogations reinforces and extends the models seen in the Lincolnshire group. In a number of cases, unlearned men and women sought the aid of literate friends, and ultimately internalized literate practices in extended, though not external, practices. We are told of John Maundrell that he

became a diligent hearer and a feruent embracer of Gods true Religion, so that he delighted in nothing so much, as to heare and speak of Gods

word, neuer being without the new Testamēt about him, although he could not read himselfe. But when he came into any cōpany that could read, his book was alwaies ready, hauing a very good memory: so that he could recite by hart most places of the new testamēt. (1894)

The book took on almost a talismanic quality here (we must always keep in mind the extraordinary power that the newly available Bible in English must have had for those accustomed to only hearing Latin services). It was portable, concealable, and could be carried ‘about’ one. Yet Maundrell’s case also shows the fluidity of orality/literacy in this period, for he did not simply carry it about as one would a saint’s image; rather, he sought out opportunities to have it read aloud whenever he came within the ‘ambit’ of the written word.⁵

Foxe’s narrative of the life of the fisherman Rawlins White provides another instance of the capacity of the ‘unlearned’ to hear and internalize scriptural places. Under Edward VI, White sought to commit the Bible to memory:

But because the good man was altogether vnlearned, and withall very simple, he knew no ready way how hee might satisfie his great desire: At length it came in hys mynde to take a speciall remedy to supply hys necessite, which was this: He had a little boy which was his own sonne, which childe he set to schoole to learne to read English. Now after the little boy could read indifferently wel, his father euery night after supper, sommer and winter, would haue the boy to read a piece of the holy scripture, & now and then of some other good booke. And to this his great industry and indeuor in holy scripture, God did also adde in him a singular gyft of memory, so that by the benefite therof he would & could do that in vouching and rehersing of the text, which men of riper and more profound knowlege, by their notes and other helpes of memory, could very hardly accomplish. In so much that he vpon the alledging of scripture, very often would cite the booke, the leafe, yea and the very sentence: such was the wonderfull working of God in this simple and vnlearn father. (1557)

The ‘singular gift of memory’ Foxe admired is not rote learning, but a dynamic relationship with the text. Once impressed into the self, the internal knowledge of the book provided an access to its contents far superior to that gained by scholars using external devices such as ‘notes and other helps of memory.’ Although White had excellent verbatim recall, the page constitutes the scaffold or structure within which that memory is stored and retrieved, allowing White to negotiate the terrain

of the book expertly. Without being able to decipher in the way we ordinarily understand the textual marks on the page, he nevertheless is presented as having a firm spatial grasp on the Bible, a knowledge of the 'leaf, yea and the very sentence.'

In one striking case, such textual facility is gained despite an inability to see at all. Foxe presents the narrative of Joan Waste, who was blind from birth. As a girl, she learned to knit and to turn ropes despite her blindness and also 'became marvelously well affected to the religion then taught.' Foxe continues:

So at length hauing by her labour gotten and saved so much money as would by her a new testame[n]t, she caused one to be prouided for her. And though she was of herselfe unlearned and by reason of her blindness vnable to read, yet for the great desire she hadde to vnderstande and haue printed in her memory the sayings of holy scriptures contened in the new Testament shee acquainted her self chiefly with one John Hurt, then prisoner in the common Jail of Darby, for debtes. The Same John Hurt ... by her earnest entreatie ... did for his exercise dayly read vnto her some one chapter of the New testament. ... Some-times she would geue a penny or two (as shee might spare) to such persons as would not freely read vnto her, appoyntyng vnto them aforehand how many Chapters of the newe Testament they should read, or how often they should read, or how often they should repeate one Chapter vpon a price. (1951-2)

Waste owned the New Testament, purchased at great sacrifice; presumably it had a tactile if not visual reality for her. Sheer repetition ultimately resulted in its internalization; the book, then, is printed in memory, though it still remains a book, organized by chapters and understood, not simply recited. The book and the self are imprinted analogously, as the printed book, mediated through the sighted reader, impresses itself in the memory of the blind unlearned woman.

Indeed, Foxe viewed the appropriation of these extended resources as producing a model of memory and disputation far superior to that available to the 'adversaries,' or the Catholic Bishops, who interrogate the martyrs. One final example shows the superiority of this dynamic mode of memory, especially as contrasted with the static and repetitive beliefs held by the Catholic interrogators: the examination of Alice Driver. In her confrontation with the bishops, she quoted Scripture with precision to defend her argument, and the highlight of her interrogation came when her examiner failed to match her abilities to remember

the Word. She asked the priest Gascoigne to tell her 'I pray you where find you this word [Church] written in the scripture?' He replied, 'I cannot tell the place, but there it is. With that she desired him to looke in his Testament. Then he fumbled & sought about him for one: but at that tyme he had none & that he knew well enough, though he seemed to search for it' (2049).

Foxe's margin reminds us of her victory: 'The papists put to silence by a simple woman,' but Driver also made the point herself:

Haue you no more to say? God be honoured. You bee not able to resist the spirit of God in me a poore woman, I was an honest poore mans daughter, neuer brought vp in the vniuersitie as you haue bene, but I haue driuen the plough before my father may a tyme (I thanke God:) yet notwithstanding in the defence of Gods truth, and in the cause of my maister Christ, by his grace I will set my foote against the foote of any of you all, in the maintenance and defence of the same, and if I had a thousand lyues, it should go for payment thereof. (2049)

It is indicative of the extraordinary power of the book that the spiritual high point for Foxe occurred when a priest was unable to find his Bible. The examples from Foxe reveal the profound alterations to the cognitive ecology of Protestants made possible by the availability of the Bible in the vernacular, whether gained through physical possession of the book or through the extended sociable underground networks of dissenters.

The book as cognitive artifact

Beyond the feats of memory chronicled in the pages of *Actes and Monuments*, can the book itself claim status as an act of collective memory? Such claims are often made with little regard to the processes of transmission that might make a particular set of narratives available to a mnemonic community (Beim 2007; Hirst and Manier 2008). However, in the case of Foxe a great deal of information is available about its circulation and reception. Central to Foxe's project is a notion of memory and commemoration based on 'lively testimony' that is inherent in the trope of the 'actes and monument.' A good deal of the prefatory matter is designed to answer the question: how is remembering a martyr different from remembering the 'false' saints of the lying Golden Legend, the wildly popular account of saints' lives that circulated in medieval

England? As John King has pointed out, Foxe used monuments in the different sense of 'sepulchre, written document, and funerary monument,' arguing that Foxe's textual use of the word 'supplants emphasis upon relics and miracles in medieval legends of the saints' (2001: 64).

Foxe's text had an avowedly public and communal orientation. The book was purchased by corporate institutions – as Thomas Freeman has written, it was placed in the hall of the Orphan's court, was ordered by the Lord Mayor to be placed in the halls of every city company 'for euerye man to see and reade' and was to be placed in 'the hall or great chamber' of all senior clergy connected to the cathedrals in England (2004: 1297). In 1571, the Convocation at St. Paul's ordered that copies be made available in cathedrals and great halls and chambers, thus making it, like the Bible, one of the great public books of the Reformation. Freeman finds no evidence that the companies obeyed the unfunded mandate and speculates that the printer John Day failed to press the matter because the clergy stepped up (1301). Archbishop Grindal forced a man as a penance for possessing 'certain superstitious monuments and images' to pay for a copy of Foxe's work, to be set up in the man's parish church (1301). Reports that it was available in all parish churches no doubt exaggerate the scope of its circulation in the sixteenth and early seventeenth centuries (see Oliver 1943), yet its special status was recognized early on, and its influence on later heterodox communities was profound. Freeman suggests that the Privy Council deemed that John Day's expenses should be defrayed in order to support 'a book which indede is very mete to be commonly knowen and well kepte in memorye' (1292). Freeman notes that the 'privy councillors succeeded beyond their expectations and contributed to the special authority and reverence in which Foxe's work was held. ... The authorities were ensuring that Foxe's book would be treated like the Bible and, in fact, that it would often be displayed along with it. This contributed greatly to the remarkable association of the Acts and Monuments with the Bible' (1302). Unlike the other books commanded to be placed in churches – Erasmus's paraphrase and the Homilies – which were either scriptural or liturgical, 'this work was being disseminated purely for its propaganda value' (1303).

Foxe himself was explicit about the mnemonic designs of his book, stated in the very title: 'actes' and 'monuments.' The first motivation for the book was to avoid oblivion, the constant threat of forgetting the experiences of the Marian martyrs:

when I wayed with my selfe so great an history of so famous doinges, as this our age dayly hath ministred vnto vs, by the patient

sufferinges of the worthy martyrs: I thought it not to be neglected, that the precious monumentes of so manye matters, and men moste meete to be recorded and registred in bookes, should lye buried by my fault in the pit of obliuion . . . let vs not faile then in publishing and setting fourth their doinges, least in that point we seme more vnkinde to them, then the writers of the primatiue church were vnto theirs. And though we repute not their ashes, chaines, and swerdes in the stede of reliques: yet let vs yelde thus muche vnto their commemoration, to glorifie the Lord in his Saintes, and imitate their death (as muche as we maye) with like constancy, or their liues at the least with like innocencye. (Foxe 1563: 16)

Foxe thus differentiated his method of commemoration from that of the ancient churches, acknowledging the danger of attaching meaning to corporeal elements such as relics, chains and swords. Foxe needed on the one hand to avoid superstition and the tendency of the works of martyrs to be forgotten or wrested over time, but on the other preserve the crucial affective, emotive power that contemplation of their stories would evoke. In a move that we have seen before, Foxe attempted to avoid the tendency of devotion to 'freeze' at the outward visible level rather than affect transformation from within. Ashes, chains, and swords – the visible, or more specifically the corporeal remains of the martyrs – were not to be 'reputed,' for that way lies idolatry; Foxe instead described his work as 'commemoration,' or an act of observance. The work of the printed book, then, was to create a transformative remembrance environment that would displace not only the 'fained fables, lying miracles, false visions, miserable errors contained in their missals, and Portuses, Breviars, and Summaries and almost no true tale in all their Saintes lyves and Festivals' (4), but also the heroic secular tales of classical heroism. 'I haue good cause to wish, that like as other subiectes: euen so also Kinges and princes, which commonly delite in heroical stories, woulde diligently peruse such monuments of Martyrs, and lay them always in sight, not onely to read, but to follow, and would paint them vpon their walles, cuppes, ringes, and gates. For doubtless such as these, are more worthy of honour then an hundreth Alexanders, Hectors, Scipiones, and warre-like Iulies' (15).

But the form of Foxe's book gives ample evidence of the 'emergence of a community bound by common experience and a collective sense of preserving the heritage of the primitive church' (Knott 1993: 84). Following the model of the Pauline epistles, the vast number of letters printed in the *Actes and Monuments* 'reveal a resilient holy community, its sense of identity sharpened by the fact of shared suffering'

(84–5). Moreover, as Knott amply documents, these letters in turn became the model for later heterodox and dissenting communities, including the Separatists and the Quakers. Here we might identify the parameters of a model of collective memory within a smaller sub-group, along the lines mooted by Hirst and Manier as discussed in the introduction. The long influence of Foxe on later sub-groups with a shared sense of their relationship to God on the one hand and a persecuting authority on the other allows us to investigate ‘the transmission of memory across a network of community members and social resources, and the subsequent convergence of this network onto a shared and stable representation of the past’ (Hirst and Manier 2008: 194).

Remembering psalms

In the end, however, the most successful distributed, extended process of the English Reformation relied only minimally upon print. Duffy’s eloquent and elegiac rendering of traditional religion has captivated the imagination of many literary critics of the early modern period, resulting in an explicit or implicit understanding of Reformed tradition as essentially comprising loss. The work of Ellen Spolsky, author of a series of innovative books on cognitive approaches to Renaissance culture, is a case in point. Her most recent work – *Word vs. Image: Cognitive Hunger in Renaissance England* (2007) – attempts to examine the implications of Clark’s argument that human beings are ‘representationally hungry’ (Spolsky 2007: 64; Clark 2008: 147). In her view, the anti-imagistic strain in the English Reformation resulted in the deliberate stunting of its ability to appeal to the majority of the populace. Since visual images are processed quite differently than written materials, the emphasis upon the written Word, she argues, effectively excluded a great many people from full participation in religious practices, because worshipers were deprived of material to ‘think with.’ Without images, congregations went hungry. Similarly, for Duffy, the Reformers’ conceptual world is one in which ‘text was everything, sign nothing’ and the sacramental universe was rejected as full of ‘dumb objects and vapid gestures, hindering communication’ (1992: 522).

But this is surely a narrow view of the range and reach of those practices and of the Reforming agenda. Moreover, it assumes that to be of use, cognitive artifacts must be visible and/or sensible. The image of the ‘natural-born cyborg’ (Clark 2003: 3) perhaps suggests primarily tool-use or other kinds of appropriation of the physical world. But the argument that ‘it is our basic *human* nature to annex, exploit and

incorporate nonbiological stuff deep into our mental profiles' (198) can equally be a way of thinking about extended social systems, as well as the ability to use the environment, including our bodies, to create forms of 'surrogate situatedness.' In particular, the use of a *techne* such as vocal music, which is literally intangible, yet nevertheless extended, in-the-world, is not fully accounted for in a view of 'stuff' that implicitly assumes that the 'stuff' that counts must be able to be seen or touched. Indeed, musical performance depends upon a range of social systems and technologies, just as sermons do. Yet somehow music is not seen to provide the same level of 'sustenance' as an object or an image.

The example of music thus challenges a simplistic 'out with the image, in with the Bible' model of Reform. An increasing number of historians and critics have moved beyond the icono-centric debate to examine the importance of other sensory modes of worship, especially the vital role of the ear, which for many Reformers was the crucial avenue to the affective experience of religion. The profoundly aural nature of the Protestant Reformation should not be underestimated, and although Reformers strongly advocated the reading of the Bible, this was only one of a range of godly activities. William Graham has called attention to the importance of conceiving of scripture not simply as a silent, detached document, but as *living* word: 'Too often lost to us is the central place of the scriptural word recited, read aloud, chanted, sung, quoted in debate, memorized in childhood, meditated upon in murmur and full voice, or consciously and unconsciously used as the major building block of public and private discourse' (1987: ix). As Walsham suggests, many historians have begun to question the truism that 'Protestantism and print should be seen as inseparable twins. There is growing recognition that, in the guise of preaching, catechizing, psalm singing, and godly discussions of sermons and Scripture, the Reformation actually catalysed orality' (2002: 180). Thus if we imagine the Reformation as establishing a new cognitive ecology, it is vital that the entire range of cognitive tools and practices be considered.

Diarmaid MacCulloch has described psalm singing as 'the secret weapon of the Reformation' (2004: 138). From the perspective of Distributed Cognition/Extended Mind, the history of the Psalms in Reformed worship is especially revealing, offering significant differences from other distributed practices such as the memorization of sermons, the Bible, and of catechisms. In the first place, it is arguable that unison congregational singing was the least top-down of all reforms; had the longest history, even in the face of profound dislike by many of the elite; and was probably one of the most successful modes of achieving a familiar and widely disseminated attachment to

Protestantism. Yet in England (unlike in Germany), much of this success cannot be attributed to the direct action of Church leaders. To be sure, psalm singing was supported by the production of a very large number of editions of the Psalms, just as Bible-reading and catechisms were supported by those books and treatises. However, the enthusiasm of congregations for uniform singing resulted in the evolution of a practice that developed its own set of conventions, significantly drifted from the printed books designed to support it, and completely ignored attempts to inculcate basic music literacy (i.e. music notation). As one of the leading historians of church music argues: 'Of all the factors in worship that are subject to any kind of control, music is the one that has had the greatest freedom and scope in the Church of England ... a characteristic style of singing developed entirely spontaneously by oral transmission from generation to generation, without effective interference by church authorities or professional musicians' (Temperley 1979: 3–4). We will argue that the ability to annex familiar tunes, the simplicity of the words, and the easy mapping of one on to the other, may show that music is the most successful 'extended' system of the Protestant Reformation.

The role of song in the Reformed service was as contested as many other aspects of public worship. At the center of the debate was a question about the nature of music itself, a debate which goes back to Plato and which reached Reformers through the writings of St. Augustine. Augustine's suspicion of music, or the awareness of the double hold it had on the human body and imagination, haunted Reformers:

I am inclined – though I pronounce no irrevocable opinion on the subject – to approve of the use of singing in the church, so that by the delights of the ear the weaker minds may be stimulated to a devotional mood. Yet when it happens that I am more moved by the singing than by what is sung, I confess myself to have sinned wickedly, and then I would rather not have heard the singing.

(Confessions Book X: 33:50)

The tension between the declarative meaning of the words and the potentially seductive nature of the melody and setting led Reformers to take a wide range of positions on music, as they had over imagery. The Swiss Reformer Zwingli banned it altogether (Temperley 1979: 20), while Luther eagerly sought to appropriate its persuasive power for his own cause (Pettegree 2005: 44). English Reformers inherited the ambivalence of Calvin, whose preface to the Psalter explored the issue at some length. Song was a powerful weapon, to be sure, and as such to

be treated cautiously, but by the same token it could provide a powerful means of colonizing the body and mind. In the revised preface to his Psalter of 1543, Calvin argued for a 'moderate' use of music, 'to make it serve all honest things; and that it should not give occasion for our giving free rein to dissoluteness' (qtd. Garside 1951: 571–2). Calvin divided music into two parts: 'Namely the letter, or subject and matter; secondly the song, or the melody.' 'Bad' words are bad enough, 'but when the melody is with it, it pierces the heart much more strongly, and enters into it, as through a funnel, the wine is poured into the vessel' (qtd. Garside 1951: 572). Yet these same properties can be used to ensure that 'honest' and 'holy' songs instead inhabit the subject. But for Calvin and other Reformers, it was not enough that such music be present, but that it also be understood. To make this point, he used the familiar trope of the parrot:

But the heart requires the intelligence. And in that (says St. Augustine) lies the difference between the singing of men and that of the birds. For a linnet, a nightingale, a parrot may sing well: but it will be without understanding. But the most unique gift of man is to sing knowing that which he sings. After the intelligence must follow the heart and the affection, a thing which is unable to be except if we have the hymn imprinted on our memory, in order never to cease from singing. (qtd Garside 1951: 571)

The priority is given to 'understanding' and 'intelligence,' which in typical Reformation fashion is foregrounded. Once that is obtained, however, such is the power of music that it can easily gain hold of the 'heart and the affection,' which are engaged only when the song is 'imprinted on our memory.' The crucial step of 'understanding' is essential *before* the act of memory, for only this distinguishes singing conceived of as an intellectual act, from chanting, conceived of only as repetition and sensuous pleasure.

Thus the rich musical tradition of the late medieval Catholic Church was repudiated. Polyphonic singing and chanting by trained choirs had been a keystone of late medieval worship in well-funded urban churches, cathedrals, and noble and royal chapels, and plainsong chant was used in parish churches (Temperley 1979: 7). Well-funded chantries for the singing of Mass for the souls of the departed further fostered expert musical practice in this period, which was supported by a complex industry for producing the large manuscript books that were necessary for the proper performance of these difficult settings, as well as the

need to hire trained musicians as parish clerks. The elaborate musical settings and the need for sophisticated expert performers antagonized many Reformers, who listed such singing and chant as chief among the many abuses of the papal Mass. In 1516, Erasmus complained that 'Modern church music is so constructed that the congregation cannot hear one distinct word. The choristers themselves do not understand what they are singing, yet according to priests and monks it constitutes the whole of religion' (qtd Temperley 10). As Temperley writes, the combination of the Latin language, the complex and difficult musical settings, and the inability of the congregation to participate (10) meant that music, like images in the church, was regarded as a distraction that hindered apprehension and understanding of the Word. For Reformers, such 'curious' ornate and professional choirs masked the true meaning of the words sung almost as much as the Latin language itself did.

When writing the Reformed liturgy, Cranmer was particularly concerned to avoid masking the declarative meaning of the words by melismatic elaborations of the note. In explaining the reasons for these choices to Henry VIII in his well-known letter of 1544, Cranmer wrote: 'in mine opinion, the song that shall be made thereunto would not be full of notes, but as near as may be, for every syllable a note, so that it may be sung distinctly and devoutly' (Brightman 1921; Temperley 1979: 12). Cranmer's attempt at a compromise between the old Mass and the new litany increased the comprehensibility of the rite both by using English instead of Latin (e.g. 'Lord, have mercy on us' rather than 'kyrie elieson') and by adopting a syllabic style of notation that aligned rhythm and meaning: 'for every syllable a note.' Cranmer did not have in mind unison congregation singing at all; instead, he forged a new mode of public prayer and chant that emphasized audibility, understanding, and clear method. The priest was to speak 'with an audible voice, that is to saye, so loude and so plainly that it maye wel be vnderstood the herers,' while the 'queyer' [choir] was to respond with 'that whyche is in the redde [ink], soberlye and deuoutlye' (Booty 1976: 251). As Temperley writes, here we see Cranmer 'trimming the more florid forms of polyphony, and bringing in a simpler musical style that allowed the text to be clearly heard' (13).

This goal of understanding is essentially receptive rather than productive, as there was no expectation upon Cranmer's part that the congregation would itself sing. Congregational singing was never integrated into the official Church of England common prayer service. In contrast, Reformers abroad, particularly Luther, more eagerly embraced song as a potent force to win enthusiasm to the cause (Pettegree

2005: 43–54). Recognising the pastoral and evangelic potential of song, Luther sought to build upon a vibrant tradition of secular song and thus to ‘wean the youth away from their carnal and lascivious songs’ (qtd Temperley 10) and to beguile them into singing godly songs. It was hoped that ‘the people would be attracted to a grasp of the truth more easily through familiar sounds’ (Pettegree 2005: 52). In England, the introduction of psalm singing was less direct and top-down, yet it nevertheless had a notably successful effect in building enthusiasm for the new order.

The English metrical psalms as used in the Church of England date to the era of Edward VI and to the work of Thomas Sternhold, who translated a selection of psalms for presentation to the king. Most of the rest of this discussion looks at the evolving fortunes of this set of psalms. Many histories of the metrical psalms (e.g. such as that of Peter Le Huray [1978]) take a teleological view, tracing the trajectory whereby the crude settings and language are gradually replaced by more sophisticated vocabulary and musical settings. Others, like those of Rivkah Zim (1987) and Hannibal Hamlin (2004), look primarily at the intricate poetic versions of the psalms produced by English poets, including Wyatt, Surrey, and Sidney. While these studies are very valuable, they necessarily focus on the increased use of musical expertise and scaffolding, as unison unaccompanied singing is eventually replaced in England by choirs and/or led by organs. In contrast, Green (2000: 503–52) and Beth Quitslund’s *Reformation in Rhyme* (2008) trace the reception history of the original Sternhold-Hopkins psalms and their long hold on reforming practice. However, we are primarily interested in the Psalms as a distributed mode of memory, especially as they reveal tensions and uneven developments between oral and literate supports and transmission.

Sternhold, a courtier under the young king Edward VI, dedicated his translation of nineteen Psalms to him, ‘seeing ... that your tender and godly zeal doth more delyghte in the holye songes of veritie than in anye fayned rimes of vanitie’ (Hopkins and Sternhold 1562: A3r). Sternhold also makes reference to singing the Psalms to the King, apparently to ballad tunes (Leaver 1991: 118). With additional psalms translated by Hopkins, these simple translations became the basis for a tradition of singing that lasted well over two hundred years, despite vociferously expressed distaste for the crudeness of the mostly monosyllabic language and, especially, for the sound of uniform unaccompanied congregational singing. During the Marian exile, psalm singing was incorporated into the order of worship at Geneva, a model the exiles hoped (in vain) would be adopted under the Elizabethan settlement. When the Genevan model

was published, Whittingham felt the need to defend the place of song and music in Reformed practice, given its dubious papist roots:

It is called by many in dout, whether it [singing] may be vsed in a reformed church: it is expedient, that we note briefly a few things perteyni[n]g thereunto As if the holy ghoste wolde say, that the songe did inflame the heart to call vpon god, and praise him with a more feruent and lyuely zeale. and as musike or singing is naturall vnto vs, and therefore every man deliteth therein: so our mercifull god setteth before our eyes, how we may reioyce and singe to the glore of his name, recreation of our spirites, and profit of our selues. But as ther is no gift of god so precious or excellent, that Satan hath not after a sort drawn to him selfe and corrupt, so hath he most impudentlye abused this notable gifte of singinge, cheifely by the papistes his ministers in disfiguring it, partly by strange language, that can not edifie, and partly by a curious wanton sort, hyringe men to tickle the eares, and flatter the phantasies, not esteeming it as a gift approued by the worde of god, profitable for the church, and confirmed by all antiquitie. (Whittingham and Calvin 1556: 17–18)

Following Calvin, this statement established the parameters of the fit use of song: song is praised insofar as it ‘inflame[s] the heart’ and inculcates ‘zeale,’ showing the Reformers’ recognition of the usefulness of the affective powers of music. For these very reasons, however, the practice can be open to abuse, which is here defined as excessive pleasure in the sound of the music and is presented, with typical Reforming rhetoric, as a predilection towards the sensuous, ‘wanton’ act of tickling the ears and flattering the ‘phantasies.’

For Reformers, such risks were worth taking, because the Psalms were seen to have a unique spiritual purchase on the worshiper. It was a commonplace that the Psalms constituted an ‘abstract’ of the entire Bible, a brief compendium as it were of all essential doctrine that modeled a range of attitudes towards God. They were seen as a model of prayer and supplication; Anthony Gilby wrote that the Psalms ‘tell us not what God says to us, but what we should say to God’ (Gilby *et al.* 1557: A2v). As Whittingham put it, the Psalms could be viewed ‘as conteininge the effect of the whole scriptures, that hereby our heartes might be more lyeuillie touched’ (Whittingham and Calvin 1556: A3v). Significantly, psalms were especially amenable to memory, owing to their metrical origins (as was thought) and to their quasi-alphabetical arrangement: ‘the holy ghoste by all means soght to helpe our memories, when he

facioned many psalms accordi[n]ge to the letters of the Alphabet: so that euery verse begin[ne]th with the letres thereof in order' (Whittingham and Calvin 1556: 275). Most importantly, songs had extraordinary staying power and were easily sung and remembered: as John Case wrote in *The Praise of Music*, 'men doe more willingly heare & more firmly carry away with them, those things which they heare song that that which they hear barely spoken and pronounced' (1586: 118).

Although the Elizabethan church did not formally integrate the singing of the metrical psalms into the service, the practice was nevertheless sanctioned in the 1559 Injunctions following the Act of Uniformity.

And that there be a modest distinct song, so used in all parts of the common prayers in the church, that the same may be as plainly understood, as if it were read without singing, and yet nevertheless, for the comforting of such that delight in music, it may be permitted that in the beginning, or in the end of common prayers, either at morning or evening, there may be sung an hymn, or such like song, to the praise of Almighty God, in the best sort of melody and music that may be conveniently devised, having respect that the sentence of the hymn may be understood and perceived. (qtd Temperley 1979: 39)

We see here the tension between exploiting the alluring nature of music – appealing to 'such that delight in music' – and ensuring that sensory pleasure does not overwhelm the declarative understanding of the word that the church *service* is expected to inculcate. With meter tied to the word – one syllable per note – memorability and repeatability is maximized, with the meter, note, and word each acting as a constraint for the other elements, so that the 'sentence' effectively becomes primary. In practice, as Temperley points out, English church music developed along parallel tracks, with larger churches and cathedrals adopting sophisticated choral music, and smaller congregations free to sing metrical psalms (1979: 40).

Arguably, psalm singing was the first truly popular aspect of the Reformed tradition and as such may have had a profound effect on the gradual acceptance of the Elizabethan church. A letter from Bishop John Jewel to Peter Martyr, expressed his satisfaction at a sort of 'viral' spread of psalm singing in London:

Religion is somewhat more established now than it was. The people are everywhere exceedingly inclined to the better part. Church

music for the people [*ecclesiastica et popularis musica*] has very much conduced to this. For as soon as they had once commenced singing publicly in only one little church in London, immediately not only the churches in the neighbourhood, but even distant towns, began to vie with one another in the same practice. You may now sometimes see at St. Paul's Cross, after the service, six thousand persons, old and young, of both sexes, all singing together and praising God. (qtd Temperley 1997: 43; Temperley's translation from the Latin)

What are the features of the Sternhold/Hopkins versions that resulted in their long hold upon worship? We might first look at them in terms of their memorability, as the very formal features that so offended the literary and musical elite were those that rendered the Psalms most amenable to memory. As one critic writes, 'their most insistent and persistent characteristics are metrical regularity and simple rhyme schemes' (Zim 1987: 117). The Psalms are written in fourteeners, which are reproduced on the page as alternating lines of eight and six, also known as 'common metre' or ballad meter. The meter is generally but by no means strictly iambic, with four stresses in one line followed by three in another. Zim further describes Sternhold's verse as having an iambic-like structure, but containing 'a preponderance of monosyllables' and showing 'preference for pairs of alliterative synonyms, some of which like "tyme and tyde" ... were popular and proverbial phrases' (1987: 118). Taken together, these features point to a very strong residual orality. Obviously these verses were constructed in a highly literate setting and were transmitted through print; nevertheless, their very long history in the face of opposition from the elite can best be explained through their high level of mnemonic affordability. Indeed it can be argued that no aspect of Reformed practice was better suited to the capabilities and constraints of human memory than was psalm singing.

For example, Psalm 88 reads:

Lorde God of health of hope and stay,
 Thou art alone to me:
 I call and cry throughout the daye
 And all the nighte to thee.
 O let my prayers soone ascend
 Vnto thy sight on highe
 Encline thine eare (O Lord) entend
 And herken to my cry. (Q4r-v)

And this is the fourth Psalm:

Lord how are my foes increast
 Which vexes me more and more.
 They kill my hart when as they say
 God can him not restore
 But thou (O Lord) art my defense
 When I am hard bestead
 Mine worship and mine honour bothe
 And thou holdst vp my hed.

(Hopkins and Sternhold 1562: C3r)

Probably the most striking feature of these psalms is their simplicity – they are overwhelmingly monosyllabic, with a few simple disyllabic words interspersed. There is a good deal of internal repetition and alliteration ('I call and cry'), as well as the use of commonly known phrases and tags (e.g. 'more and more'; 'kill my heart'; 'mine worship and mine honour'; 'throughout the day / and all the night'). In analyzing these properties, Rubin's work on combining constraints, discussed in Chapter 2, is especially useful here. Rubin reminds us that the 'combination of sensory and semantic constraints (sound and meaning) cue memory much more easily than either alone' (1995: 92). The more tightly each constraint binds the other, the more affordances to memory the utterance provides. Summarizing Wallace Chafe and Jane Danielewicz (1987), Rubin argues that while the written word uses the sentence as its basic unit of structure, speech is best perceived and remembered according to the 'intonation unit,' which has three characteristics: '(1) it is spoken with a single, coherent intonation contour, (2) it is followed by a pause, and (3) it is likely to be a single clause' (Chafe and Danielewicz 95; Rubin: 105). As basic units of speech, in orally-oriented writing, intonation units tend to be combined in additive fashion, rather than using conventions such as relative clauses and the like. Moreover, where music and meter reinforce the intonation units, the 'phrase boundaries' become clearer and more memorable, and such multiple constraints produce highly memorable poetry (10). The examples cited above from Sternhold and Hopkins certainly bear out these observations. The 8/6 structure produces short lines with highly marked intonation boundaries, and the phrase boundaries almost invariably fall at the end of lines – that is, there is little enjambment. In addition, Sternhold's use of other mnemonic devices such as internal rhyme and conventionally balanced phrases

(‘honour and worship’; ‘more and more’; ‘day and night’) also increase memorability, as does the use of alliteration within the line.

However, these very features work against the evolving conventions of chirographic and typographic poetry, which may employ enjambment, polysyllabic vocabulary, and eschew end-rhyme. For these reasons poetry and song written to maximize memory is unlikely, to say the least, to appeal to sophisticated musical and literate tastes. In *The Arte of English Poesie*, George Puttenham suggested that middle rhyme and alliteration should be reserved only for ‘toys and triflying poesy’ (1589: 68).

In the case of sacred song (Psalms, hymns, and liturgical chants), the drive to eliminate ‘curious singing,’ which protracts the syllable and therefore deliberately creates a mismatch between ‘intonation unit’ and music unit, also results in a form of music that seems much less sophisticated than contemporary art settings, themselves the result of evolving musical literacy. Smarting from the failure of his bid to include his own hymns with every copy of the metrical psalms, George Wither was one of the more direct critics of Sternhold and Hopkins:

And I dare undertake to demonstrate, that they are not onley ful of absurdities, solecisms, improprieties, nonse[nce], and impertinent circumlocutions (to more than twice the length of their originalles in some places) but that are in them many expressions also, quite beside if not quite contrary to the meaning of the Text. Which I would not thus openly haue declared but that euen schoole boys perceiue it, though some (that would be thought wiser) do ignorantly or wilfully, protest against any alteration of our singing Psalms.

(Wither and Delaram 1619: 68)

Many of the features that seem to a sophisticated poet like Wither to be solecisms and improprieties in fact enhance memorability, but as he rightly says, at the expense of meaning, and certainly at the expense of elegance.

But what of the role of the tune in memory? As Rubin reminds us, ‘the words and the music of a song form a unit in which each supports the other’ (1995: 109). He cites many examples of ballad words shifting to support a melody, and vice versa, arguing that ‘whether the words or melody change most is determined by the “strength” of the melody’ (1995: 111). However, in the case of the Psalms there seems to have been a fairly strong urge to protect the words from change. Despite the fact that the verse is of course a translation, and not an especially accurate one at that, its familiarity, coupled with the aura of the sacred that hangs over scriptural texts, seems to have encouraged the conservation

of the words at the expense of melody. Certainly the history of the singing of the Psalms indicates that the tunes were in flux. The question of the musical settings for the Psalms is a complex one, in which shifts in practice seem to have constantly outstripped (or ignored) the ability of printers to either prescribe or keep up with the changes. The history of the tunes provides a fascinating insight into the interrelationship of oral tradition and print in this period, clearly showing that print did not, as Eisenstein and Ong might predict, simply freeze material into place, but instead was subject to changes and interactions with oral traditions. As Temperley notes, many of the original settings were not particularly amenable to easy singing or memorizing. He suggests that the 8/6 construction meant that they may have first been sung to popular tunes; they were called 'Geneva jigs' (67), which connotes a fairly lively delivery.

Thus from the beginning there may have been a mis-match between printed versions of the tunes and actual practice, which seems to have drifted from the prescribed tunes very quickly. The attempt to teach a basic musical literacy with the Psalms also seems to have foundered. The 1562 edition contained 'a shorte Introduction into the Science of Musicke, made for such as are desirous to haue the knowledge thereof, for the singing of these Psalmes' (Hopkins and Sternhold 1562: +iir). This introduction comprised several pages and constituted an attempt to teach musical notation to the 'rude & ignorant in Song.' The mini-treatise is similar to the advice given in any standard music-training manual of the period: 'an easie and moste playne way and rule, of the order of the Notes and Kayes of singing, which commonly is called the scale of Musicke, or the *Gamma vt.*' Not unusually, the 'easie and moste playne' method is in fact quite complex, beginning with a direction 'to the Reader: Beholde this table':

In this table or gamma vt is co[n]teyned all, what is necessary to the knowledge of singing wherefore it must be diligentialie waied & muste also been perfectly committed to memory, so that ye can redely and distinctly say it without boke, both forward and backward: that is, upward and downward. (Hopkins and Sternhold 1562: +iir)

The 'table' is of a scale, in the shape of pipes, but far from being plain and easy, requires several densely written pages of explanation. Moreover, the level of detail on the table, including its mimetic gestures, renders it less than useful as a cognitive device, at least according to the findings of Scaife and Rogers. This table would seem to be a prime example of the 'resemblance' fallacy (1996: 199), which is the idea – still commonly believed – that diagrams and tables work simply because they look

like that which they represent. Instead, diagrams work best when they '[constrain] a particular way of conceptualizing and solving' a problem (199). Moreover, reading a diagram often requires a deep level of domain knowledge, especially in 'domains with highly evolved notations' (206). Thus in this case the diagram is meant to inculcate precisely the skills that are needed to read the diagram in the first place. The difficulty involved is signaled when the author of the preface suggests that it would really be best to find a trained singer: 'Moreover it is to be noted that there are vi. Voices, or Notes, signified and expressed by these vi. syllables: vt re mi fa sol la, which through repetition of them, may be song al songs of what compass so euer they be, which vi notes, ye must learne to tune aptely of some one that can already sing' (Hopkins and Sternhold 1562: +iiiv).

As Temperley points out, the first elaborate and cumbersome attempt to teach music-reading is quickly dropped from the books. Instead, John Day wrote a short note 'TO THE READER: Thou shalt understand (gentle Reader) that I haue (for the helpe of those that are desirous to learn to syng) caused a new print of Note to be made with letters to be ioyned by every Note' (Hopkins and Sternhold 1569: *V). The musical notation includes 'solfa' letters, which Temperley suggests done to aid the parish clerk rather than the congregation. Such notation is helpful to anyone trained in the solfa system, but cannot in itself of course provide a means of reading music for the musically illiterate.

Later editions provided new tunes, probably not as a deliberate attempt at improvement; rather 'they were made to bring the printed versions into conformity with practice. If so, they record changes already made in the process of oral transmission' (Temperley 1979: 59). In 1594 Thomas East wrote that 'in most churches of this realm' only four tunes were used, and he provided a table that allowed singers to match the appropriate tune to the Psalm (qtd Temperley 1979: 68). While East's work, in collaboration with William Byrd, represents one of the first harmonized Psalms books, it does not appear that these editions ever gained prominence in congregational singing. Indeed, successive attempts by skilled poets and musicians to introduce new translations and settings failed, and the metrical Psalms were firmly entrenched in the time of Alexander Pope in the 1730s.

What explains this remarkable longevity? Temperley argues that we see in the history of Psalm singing a long slow evolution of traditions that were largely unaffected by musical notation or by musical experts; 'Left to themselves, the people continued to sing the familiar tunes, and they gradually evolved the slow and strange manner of singing which was ... attacked at the end of the seventeenth century' (1979: 53). By this period Temperley reckons that each note could take

up to two seconds to sing, an extraordinarily long time that produced psalm singing that a pained Samuel Pepys described as taking up to an hour. Temperley writes:

Yet is not difficult to see how it came about. When singers depend on other singers for the pitch of the note they will sing next, they naturally tend to wait until they hear the note before they venture to sing it. The result is a 'drag'. It is corrected by instrumental accompaniment, or by dancing or even foot-tapping such as often accompanies secular folk song. In church there was nothing to keep the rhythm going, and in addition there was often an echoing building to prolong each sound still more. Over many years the effect was cumulative. Each generation would aim to sing only as fast as it had learned to sing, but would insensibly slow down the 'norm' that it passed on to its successors. (1979: 92)

The primary means of singing Psalms became a practice known as 'lining out,' in which the parish clerk or another leader would speak out each line of the psalms, which would then be repeated by the congregation, often very slowly and raggedly, as Temperley suggests. We do not know exactly where this practice originated, but it was sanctioned in the *Directory for Public Worship* promulgated during Parliamentary rule, which integrated psalm singing into the Order of Worship. However, in keeping with Puritan concern that the matter take priority over the manner, the *Directory* prescribed that:

In singing of Psalmes, the voice is to be tunably and gravely ordered: but the chief care must be, to sing with understanding, and with Grace in the heart, making melody unto the Lord. ... That the whole congregation may joyne herein, every one that can reade is to have a Psalm book, and all others not disabled by age, or otherwise, are to be exhorted to learn to reade. But for the present, where many in the Congregation cannot read, it is convenient that the Minister, or some other fit person appointed by him and the other ruling Officers, do read the Psalm, line by line, before the singing thereof. (Engl and Wales 1645: M3r)

Such a practice no doubt conserved the words, which would have been *read* aloud rather than recited from memory. But it produced a method of singing that ultimately jettisoned melody entirely. Ample

contemporary evidence attests to elite dismay at the resulting sound. One seventeenth-century observer wrote:

Now yf it be demanded of them where yf the singing of psalmes in the Church at Sermons by the whole multitude, and at other exercises (namely at the Com[m]union) be meete to be used, I suppose they will acknowledge that it is very meete, adding this[:] that the same by songe, by the whole multitude in a plane Geneva tvne, which every one can singe, and not in pricksonge, and descant (as they call it): well, this being granted by them, I demaund further, Nature hauing disposed all voices both of men and children into fyve kindes ... whether it is not more for edification of that which is sung to dispose nature by the art of musicke to its right end, vid: by causing everyone to singe his parte allotted to him by nature, rather than to have voyces violated, and drawne out of their naturall compasse ... [which] causeth rather yellinge and scrichinge, then singinge, and confusion of voyces rather than edifyinge. (London British Musuem MS 18.B.xis, fol. 8v, qtd Temperley 1979)

There were numerous attempts to reform this practice, all of which involved imparting a degree of musical literacy – that is, practices that relied on written notation. In 1677, John Playford attempted one of many revisions of Sternhold and Hopkins. Echoing the concerns of many detractors, Playford wrote of his predecessors that ‘their Piety exceeded their Poetry’ and cited three reasons for opposition to the Sternhold/Hopkins versions of the Psalms:

1. The faults that some find with the Translation: 2. The dislike that others have for the Tunes: And 3. the ill custom of Reading every Line by it self before they sing it. (Playford 1677: A3r)

Playford elaborated on the barbaric results of ‘Reading every Line by it self’ or ‘lining out,’ a practice which he saw as appropriate only to backward and provincial areas:

Another Reason, why singing of Psalms is very much decayed ... is the late intruding of the Scotch maner of reading every line by the Clerk before it is song ... some alledge it a great benefit to such as cannot read, and to others lazy and careless and leave their books at home. To this I answer, Such as have no knowledge to read, may have as little to sing, especially aged people who Nature hath

debilitated, and such by a silent and devout attention [give] more Glory to God with theirs than their voices. Also this uncouth [manner] of reading, doth much obstruct the Tune by such long pauses, whereby [the] Harmony thereof is lost ... I shall be willing to grant this way of reading be useful in some Villages near the Sea, or in the Borders of Scotland where it may chance not two in those Congregations are book learned, but [not here in] London where in all parishes, great or small, you have not three in a hundred but can read. And when the new custom of the Clerks reading the singing Psalms is left off, you shall obserue more to make use of the Books, and give better attention both to the Matter and the Musicke. (1677: A3v)

Both musical and written literate practices are brought to bear on the problem of eradicating this oral and therefore, in the opinion of the elite, backward practice of lining out psalms. Playford's setting was in three parts – cantus, medius, and bassus – and set to a variety of tunes that Playford claimed were 'suitable and proper to the Matter' (A4r). Such settings were of course far too sophisticated to be sung by untrained singers and so required a trained amateur choir, an increasingly common solution in this period.

He also claimed that his tunes were well suited to organs, which were also becoming much more common in the later seventeenth and early eighteenth century. Organs were a particularly effective way of ensuring that congregations sang according to the note. But decades after Playford's critiques, the old practices remained, and the New England church experienced an intense battle over the issue of regular singing, or singing by note (see Ruggles 1997; Targoff 2001). Only through devising a means of allowing experts in musical literacy approved by the elite to lead through musically literate artifacts (mediated either through the organ or through the choir) were these practices eradicated, although they still persist in the Gaelic islands of Scotland and in Appalachia in the American South, especially in Black churches.

What explains the long hold of this tradition? Recent research on musical cognition has demonstrated the profound importance of familiarity for novice (untrained) musicians: listeners will like what they know. The phenomenon is otherwise known as the 'familiarity constraint.' J. David Smith *et al.* suggest that 'familiarity has been a significant force of gravity in musical practice worldwide ... the presentations of familiar tunes would be the most salient musical knowledge structures' in traditional cultures (1994: 51). It is clear from

the contemporary literature that the divide between the trained and untrained singer was profound and that it seemed physically painful for educated listeners to sit through metrical psalm singing. Yet what sort of competence might they have had? Commentators in early modern England often noted the ubiquity of singing, especially as an accompaniment to the rhythmic work of weaving, kneading, and so on. In one sense these practitioners would have been very experienced indeed in song. Yet in another sense – in the practice of ‘singing by note’ – they would have been completely untutored. What was the conceptual and practical gulf between the act of singing and the practice of notation?

The psychologist John Sloboda has asked the question: what has been the effect of musical notation as a ‘cultural force’? He identifies the following four:

1. The existence of written notation allows long verbatim recall of complex meaningful material.
2. Notation allows proliferation and migration of material so that it exceeds the capacity of any one individual to know it all.
3. Notation encourages the separation of an utterance from its context and makes it easier for an utterance to be treated as a ‘thing in itself.’
4. Notation selects certain aspects of sound for preservation, and, in so doing, both embodies current theory and also tends to restrict the further development of music in certain ways. (242)

Sloboda suggests that ‘in general the forms of oral music do not match those of literate music in “architectural” complexity, where multiple hierarchical embeddings can produce long, varied, yet integrated compositions. Rather, we find a preponderance of “chain” structures where the same kind of short element is repeated, with variations, over and over again’ (246). Certainly this description fits the metrical psalm translations very well, were certainly ‘chained’ rather than integrated. Sloboda’s point about the restriction of the development of music and tradition is also relevant here. The drift towards oral forms could only be arrested through the use of increasingly sophisticated notation systems that in turn required expert leaders to provide the support (in the form of musical leaders, choirs, and instruments) that would allow the congregation to sing them.

The twin histories we have recounted in this chapter show that the existence of technologies in themselves have little predictive effect.

Both Foxe's *Actes and Monuments* and the metrical psalms were print-scaffolded forms, were backed by official publication and dissemination schemes, and both had a wide reach and a long hold on a range of believers. However, their very different histories also reveal the crucial importance of social catalysts in constructing a model of cognitive ecology. The Foxean martyrs represent and enact a dynamic mode of memory that capitalizes upon the mnemonic affordability of the Bible and its new availability in the vernacular, whether in manuscript or print, circulated openly or covertly, read silently or recited. In turn these models became reinforced by social and affective bonds among later out-groups modeled upon Foxe's martyrs. Psalm singing, on the other hand, was as close as the English Reformation came to a kind of 'viral marketing.' Metrical psalms were a product of print, but were hijacked by an evolving oral tradition that was itself heavily tied to a literate bias towards the precise recall of words. The power of this tradition can in turn be tied to its strong appeal to affect and to sociability, perhaps working as social glue in the same way that work-songs and chants operated. As it turned out, the only means of putting a stop to the practice was by shifting the material ecology of the parish church through the technology of the organ. In both cases then, we see that a close attention to the entire cognitive ecology – insides, objects, and people – allows us to fully appreciate the range of factors in play and develop a more comprehensive understanding of the forces that shaped the English Reformation for ordinary worshipers.

5

Models of Mind and Memory in the Cognition of Religion: A Case Study in Early Quakerism

Modes of religiosity and Quakerism

In the formation and development of religious community and group identity, memory – both individual and shared – and group practices – including their expression through ritual – play pivotal roles. From within the cognitive science of religion field, one of the most influential models exploring the form and transmission of religions, based on human cognitive architecture and revolving around memory and ritual, has been that of the ‘modes of religiosity’ put forward by Harvey Whitehouse. The model emerged out of anthropological research in Papua New Guinea and seeks to combine cognitivist, ethnographic and historical perspectives. It is a testable theory of how religions are created, passed on, and changed, based on a distinction between imagistic and doctrinal religious forms. Whitehouse’s theory, resting on a broad Tylorian definition of religion as ‘any set of shared beliefs and actions appealing to supernatural agency,’ suggests religions tend to coalesce around either an imagistic or doctrinal pole depending primarily on the manner in which religious behaviour is constituted and remembered (2004: 2).¹ Utilizing, and critiquing, this model, to look at the origins and early years of Quakerism enables us to expand and develop our concept of religious ecology within the context of the long English Reformation.

Quakerism was one manifestation of the European Radical Reformation in an English context. It was a movement born in English revolution that would ultimately spread across the globe, from the Philippines to Australia, from South Africa to the US, transforming itself from a radical sect into a respectable denomination in the process. Of all the extreme religious movements to spring up in turbulent 1640s and

1650s England, the Religious Society of Friends was the most successful, flourishing before the restoration of monarchy and Church in 1660 and adapting afterwards into a permanent fixture in the country's religious landscape. Emerging as the English nation witnessed the execution of Charles I in 1649, the founding of England's first Republic, large-scale and bloody military campaigns against the Irish and Scots, and then a devastating plague in 1651–52, for many English people the Quakers manifested 'the world turned upside down' (Hill 1972). Our investigation into the emergence and early expansion of the Quaker movement between the 1640s and the end of the seventeenth century using Whitehouse's model suggests both that 'modes of religiosity' has the potential to illuminate aspects of sect activity in this period and that aspects of early Quakerism can help refine Whitehouse's theory.

Dichotomous conceptual approaches to understanding religious form and experience have a long-established pedigree. From Ruth Benedict's Nietzschean opposites 'Apollonian' and 'Dionysian' (1934), and Ernest Gellner's pendulum-swing theory within Islam between sophisticated, literate and scriptural urban beliefs and less educated, charismatic and illiterate countryside beliefs (1970–1), to I. M. Lewis' central and peripheral cults within the world of spirit possession and shamanism (1971), Victor Turner's exclusive 'political' and expansive 'fertility' rituals (1973; 1974), and Max Weber's dynamic, emotional and communal charismatic religious form and its rational, intellectual and diffuse counterpart (1930; 1963), such approaches have dominated scholarly analysis. Whitehouse's goal with the 'modes of religiosity' thesis is to improve upon these models to achieve 'a dissolution of the boundaries between intellectualist, psychological and sociological approaches to the interpretation of religion' (1995: 220). Whitehouse suggests understanding religion is 'a problem of explaining a particular type of distributed cognition' (2004:16). He argues that his theory both reveals the cognitive mechanisms underlying religious systems – differential systems of memory – and explains their socio-political features. Whitehouse takes the varying socio-political features long observed in different religious traditions – the contrasting degrees of social cohesion, dynamic leadership, inclusivity, uniformity, centralized structure, scale and spread – and explains them in terms of cognitive or psychological causes – ritual frequency, levels of emotional arousal, the principal memory system employed, the manner in which ritual meaning is acquired, and techniques of revelation – in a single model (2004: 74).

Within religious traditions, Whitehouse asserts, different forms of codification of information utilize different forms of cognitive processing and are stored in different forms of memory. Following Peter Graf and Daniel Schacter (1985), Whitehouse divides memory into implicit and explicit forms, which work through distinct processes. The distinction, though, is controversial; as Whitehouse acknowledges, whilst the dividing lines between explicit and implicit memory 'are difficult to draw' the distinction, 'or a series of more fine-grained distinctions,' is nevertheless 'difficult to avoid' (2004: 82 n.1). Implicit memory, as Whitehouse describes it, involves what we remember without being aware that we are remembering it, including 'procedural' or 'habit' memory that enables us to tie our shoelaces or ride a bike (2004: 65). Sutton has suggested that the category of implicit memory encompasses an array of heterogeneous phenomena and that it 'may be better to see "implicit memory" as a label for a set of memory tasks rather than a distinct variety or system of memory' (Sutton 2010b). Explicit memory involves conscious, deliberate recollection. Here, Whitehouse takes over the cognitive psychologist Endel Tulving's further distinction within explicit memory between semantic and episodic types. Semantic, or 'propositional,' memory relates to general knowledge about the world unrelated to specific experiences; episodic or 'recollective' memory involves specific events such as autobiographical episodes (Tulving 1983). Heuristically useful, it has proved difficult to tease apart episodic and semantic processes in practice.²

Whitehouse argues that doctrinal rituals that are repetitively performed and routinized are remembered as 'scripts' in semantic memory not as separate events. Infrequent imagistic rituals are encoded in episodic or autobiographical memory, and recalled as unique and highly emotional events. In its most potent form, particularly detailed and vivid recollections of stimulating events that 'radically violate existing schemas' can be recalled as 'flashbulb memories,' particularly striking and vivid memories that are highly resistant to forgetting although not necessarily accurate as a factual record (Whitehouse 1995: 195–202; Whitehouse 2000: 5–9, quotation 7). Religious and ritual representations encoded in semantic memory presupposes earlier episodic memory formations and even within the most highly routinized churches one can find believers whose religious identity is formed at least in part by transformative revelatory episodes. There is thus 'no such thing as a religious tradition that does not depend for its transmission on both semantic and episodic memory' (2000: 11, 149).

By associating doctrinal religion with semantic memory, and imagistic religion with episodic memory, Whitehouse risks portraying doctrinal religions as unemotional or ‘affect-free.’ This point will be explored further later when we take up Whitehouse’s argument about a ‘tedium effect’ operating within doctrinal religions, but it should be noted that in our discussion in the previous chapter we saw the ardent desire of Reformers to avoid learning-by-rote religion and impart a ‘lived’ knowledge to emotionally engaged worshipers who were meant to be affected – ‘pierced’ or ‘pricked’ – by that process of learning. Reformers were deeply concerned to find the right balance of routinization, ensuring memorability without sacrificing comprehension, as witnessed in the struggle to devise effective catechisms; as we will see, the Quakers attempted to completely reconfigure this equation, with only limited success. So whilst Whitehouse perceives semantic and episodic memory playing a role in the transmission of all religious traditions, the historical evidence may point as much to interaction, as distinction, between memory types.

Modes of religiosity do not constitute types of religion, but ‘tendencies towards certain patterns of codification, transmission, cognitive processing and political association’ (Whitehouse 1995: 207). This means that ‘fundamentally contrasting dynamics are often to be found within a single religious tradition’ (Whitehouse 2000: 1). The imagistic mode ‘consists of the tendency, within certain small-scale or regionally fragmented ritual traditions and cults, for revelations to be transmitted through sporadic collective action, evoking multivocal iconic imagery, encoded in memory as distinct episodes, and producing highly cohesive and particularistic social ties.’ In contrast, the doctrinal mode ‘consists of the tendency, within many regional and world religions, for revelations to be codified as a body of doctrines, transmitted through routinized forms of worship, memorized as part of one’s “general knowledge”, and producing large, anonymous communities.’ Religions are not either ‘doctrinal’ or ‘imagistic,’ but rather these modes represent abstract constellations of variables and particular religions will utilize one, other, or both modes (Whitehouse 2000: 1).

Whitehouse’s theory is based on a number of explicit principles, which relate in part to our concept of religious ecology. Religious traditions are ‘materially constrained,’ bound by certain psychological, ecological and in particular cognitive constraints that limit the possibilities for successful religious cosmologies, eschatologies, ethics and ritual exegeses. Religious phenomena are selected, so explaining religion requires identifying the ‘particular mechanisms that drive the selection of culturally

widespread representations in preference to all the other representations that fleetingly occur in any population.' Regular features of cognitive organization – the ability to encode, store and recall – influence the selection of religious concepts. These concepts are liable to congregate around a 'universal attractor position' or a 'cognitive optimum position' that encompasses the conditions most favorable to the selection and transmission of those concepts. The selection of religious phenomena is 'context dependent,' and it must be borne in mind that the development and maintenance of expert knowledge, in religion as in any field, places heavy demands upon the human memory (Whitehouse 2004: 6, 15–24, 29, quotation 6). Finally, religious transmission is partly motivated by explicit concepts. Across the world religions, rituals, myths and concepts of supernatural agency that cluster around the cognitive optimum position are differentiated from counter-intuitive concepts that are cognitively costly to acquire, as we discussed earlier. These 'heavier' concepts, for instance transubstantiation or the transmigration of souls, tend to be more highly valued and constitute a crucial gulf that 'divides the fairies from the gods.' Their reliable transmission therefore requires special mnemonic support in the form of prolonged study and frequent reinforcement through textual re-reading or more often a routine of oral exposition (Whitehouse 2004: 22–7, quotation 46).

The long Reformation presents a particularly appropriate context in which to test Whitehouse's model. In Papua New Guinea, the 'modes of religiosity' thesis developed out of Whitehouse's observations of the interaction between an indigenous pre-contact religious culture and missionary Christianity. Missionary Christianity can be viewed as the tail end of a historical trajectory that began in the Reformation era, one that suppressed imagistic practices in favor of establishing doctrinal orthodoxies (Whitehouse 2000: 149). Late medieval Christianity included practices that Whitehouse terms imagistic like pilgrimages and carnivals, alongside a doctrinal mode that he identifies operating most comprehensively within monastic communities, with its extensively verbalized doctrine and exegesis, highly routinized rituals and doctrinal uniformity within a hierarchical and centralized ecclesiastical structure (2000: 150–1). The Reformers' suppression of imagistic practices was never more than partially successful and, as Euan Cameron observed, innovative localized imagistic groups sporadically disrupted newly established doctrinal orthodoxies across early modern Europe (Whitehouse 2000: 156, Cameron 1991: 397). However, in Calvin's churchly apparatus, Whitehouse sees 'the final component for a thoroughgoing doctrinal religiosity' designed to regulate doctrine and

enforce orthodoxy (2000: 154). The extensive codification of dogma in rhetorical strings of question-and-answer that Whitehouse sees as ‘so characteristic of the doctrinal mode’ is exemplified in the catechetical culture of the Reformation era. Innovation outside authoritative sources was discouraged, whilst the policing of heresy spurred centralization (Whitehouse 2000: 153).

Medieval and early modern scholars have begun to engage with facets of the ‘modes of religiosity’ model. Ted Vial has questioned whether ‘imagistic’ terminology applied to pre-Reformation religious practices is not reflective of the unconscious presuppositions of a post-Reformation paradigm. Vial suggests that early Protestant and Tridentine Catholic churches both displayed the characteristics identified by Whitehouse as epitomizing doctrinal religion – repetition of a coherent body of doctrine, rhetorically powerful leaders operating within a centralized and hierarchical structure, enforcement of orthodoxy, rigorously scheduled ritual occasions involving low spontaneous exegetical reflection, and an imagined community with a strong emphasis on proselytizing. Their shared target was not just the establishment of doctrinal purity but the elimination of a proliferation of medieval folk ritual practices which ‘we might, at first glance, deem imagistic’ (Vial 2004: 147). However, whilst the apotropaic use of ritual objects in late medieval Catholic practice may be conceived to be magical to some extent, Vial suggests that this does not necessarily render them imagistic as they were frequently repeated, orally transmitted and to a degree regulated by the parish priest as representative of the Church (148–51).

Similarly, from a pre-Reformation perspective Anne Clark has challenged the identification of doctrinal religiosity with monastic life and imagistic practices with religious culture beyond the monastery walls. Clark points to the visionary or ecstatic experiences of individuals like the twelfth-century nun Elisabeth of Schönau or her thirteenth-century counterpart Gertrude of Helfta, powerful emotional experiences tied to the textual, visual, aural or olfactory stimuli of everyday doctrinal religious practice within routinized environments. Clark cites a text written by a twelfth-century Cistercian monk for anchoresses that details the ascetic and intellectual preparation for ecstatic religious experience envisaged as a routine part of monastic life. In a strictly hierarchical and highly policed, high frequency ritual religious environment, intense emotional experiences were incorporated that expanded the cognitive possibilities of routinized worship (Clark 2004: 130–1). Outside the monastic walls in the world of lay popular religion, Clark questions Whitehouse’s assumption that the formation of religious identity is

dependent upon the grasp of a stable body of basic religious knowledge transmitted in part through ritual. She suggests that the practices associated with the cult of the Virgin Mary, which in the later Middle Ages became increasingly emotionally orientated, fostered a devotional relationship between the worshiper and the object of worship that could take priority over the transmission of religious knowledge highlighted by Whitehouse (131–7).

Clark's and Vial's constructive criticisms, which Whitehouse has taken on board, reflect the common difficulty of incorporating nuanced historical evidence into a necessarily simplistic model. Clark is also unconvinced by Whitehouse's identification of a tedium effect within doctrinal religion acting as a prompt to imagistic revitalization or break-away movements. Whitehouse argues that repetitive verbalized transmission creates a dogmatic interpretative framework within which innovation is rare, discouraging independent exegetical reflection and maximizing conformity but at the risk of creating a 'tedium effect.' Whilst ritualized discourse can 'maintain elevated levels of commitment and an ongoing sense of revelation' – sermonizing can excite as well as bore – motivational systems, for instance the promise of eternal happiness or the threat of eternal pain, have a role to play in mitigating tedium (Whitehouse 2004: 9–10, 149, quotation 10). By tedium, Whitehouse seems to mean not temporary boredom but a more long-term 'switching off.' Repetitive teachings can create levels of boredom that can lead to the tedium effect, 'a state of low morale arising from overfamiliarity with religious formulae and routine' (2004: 98). To mitigate the tedium effect identifiable within doctrinal modes of religiosity, Whitehouse notes that some Melanesian Christians had incorporated 'more sensually and emotionally evocative forms of routinized worship' like Pentecostalism (2000: 148). Whilst Pentecostalism and other forms of more charismatic Christian worship are more overtly emotional and less rigid in form and practice, this does not necessarily make them less prone to tedium. Whitehouse seems to have recognized as much in a later work, suggesting that whilst charismatic churches can create elevated emotional states in believers, it 'seems unlikely' that they can maintain these arousal levels with regular participants, but leaves the question open pending further empirical investigation (2004: 99).

History and anthropology, Clark proposes, can flesh out the shape of ritual experience deemed doctrinal and test the notion that an inevitable tedium effect sets in where spontaneous exegetical reflection is low-level. Within the medieval monastic context, Clark suggests

that, beyond the standard expressed concerns about attentiveness and engagement from superiors, the routine of worship, far from fomenting tedium, actually facilitated an emotional experience. The musical keys of the Psalms designed to heighten emotions, the meditative style of monastic reading that encouraged free association rather than linear comprehension, the architecture and ornamentation that stimulated visual senses, and the collective design of monastic worship seeking ‘the dissolution of ego into the communal identity’ all militated against tedium (Clark 2004: 128). Protestant psalm singing, as discussed in the previous chapter, further reinforces Clark’s argument; this was a highly repetitive, unvarying form of worship that, despite not being to the tastes of some, proved highly popular across English parishes, spreading without official endorsement and enduring relatively unchanged for centuries.

The Quaker movement

Tedium was certainly not the cause of the explosion of radical splinter groups in post-Reformation England – quite the contrary. Agitation for further reformation drove those dissatisfied with orthodox religious services to seek alternatives. Graham Parry has argued that ‘as the passion for religious experience deepened in the early decades of the seventeenth century, so divisions in the Church increased’ (2009: 239–52, quotation 249). Larry Ingle put it more succinctly – ‘Protestantism naturally splinters’ (1994: 4). The appearance of Protestant rivals to the Church of England from the sixteenth through to the nineteenth century was fuelled, as Tyacke has suggested, by debates about what constituted a real Protestant (1998: 320). Whilst there is plentiful evidence of deep attachment to what has been termed Prayer Book Anglicanism and the successful embedding of its ritual practices and texts, for a significant minority it remained a Church but halfway reformed (Maltby 1998; Durston and Maltby 2006). Puritan sermon-gadding, collective fasting, sabbatarianism, iconoclasm, attempts to reform popular culture, and efforts to establish godly rule in the 1650s were all expressions of frustration at an incomplete Reformation (Durston and Eales 1996).

For three-quarters of a century, hopes for further religious reformation were dashed, before political miscalculation opened the door to radical reform. The Laudian programme laid down the religious fault lines along which the subsequent Civil War would be fought, fault lines that had as much to do with Church-State relations as with theology

and liturgical practice (Collins 2005; Durston and Maltby 2006). The misjudged imposition of the Scottish Prayer Book lit the tinderbox and Charles I's reluctant recall of Parliament provided the malcontents with their outlet. When political and military exigencies obliged an Erastian Parliament to make common cause with the Scots against the King, it committed the country to a nationally established Presbyterianism (Collins 2005: 69–79). The national Presbytery, however, was a toothless animal, for the military upon which Parliament relied favored toleration for independent gathered churches. The sword proved mightier than the orator, and it was the New Model Army who remodeled Parliament in December 1648, executed the king for the novel crime of waging war against his own people, and declared England a republic. To the horror of moderate Puritans who had supported Parliament in the early 1640s, power passed to the Independents and 'the cause of religious uniformity was doomed' (Hughes 1992: 70–90; Morrill 1992: 8–14; Coffey 2006: 48).

In 1646 and 1647, after an extended tour of war-torn England seeking spiritual truth, George Fox experienced a series of divine revelations and with a small group of like-minded itinerant preachers began to gather together separatist and semi-separatist groups in the north of the country. By the time liberty of conscience was legally established in 1653, the Quakers had taken their place alongside other groups, real like the Baptists and imagined like the Ranters, exciting consternation amongst the defenders of religious orthodoxy. Prospering particularly in the northern and eastern regions of England, those areas most pastorally neglected by the Church and where earlier traditions of dissent – Lollardy, Familism and Grindletonianism – had taken root, the movement also proved particularly attractive to women because the gender distinctions of orthodox theology were abandoned and women were permitted to preach regularly (Mack 1992; Spufford 1995). Within a decade Quakers were possibly as numerous in England as Catholics, and even less well liked (Reay 1984: 141, Hughes 2004).

The reasons for the animosity lie in the peculiar combination of political radicalism, theological deviancy and social subversion associated with the early Quaker movement. They heckled parish ministers, denouncing them as hypocrites and hirelings, and challenged them to public debates. They adopted 'thee' and 'thou,' as many in the rural north preferred, refused to doff their hats to social superiors as did the Anabaptists, and, like the Lollards before them, also refused to take oaths. Quakers rejected Calvinist predestinarianism in favor of a more universalist theology, as many Baptists had done. They rejected

sacramental forms, as Seekers like William Dell and William Erbury had done. However, it was the doctrine of the 'inner light' that particularly marked them out, a doctrine with notable correspondences to the writings of continental mystics like Jacob Boehme and Sebastian Franck with which a number of Quakers were familiar.³ The message that all were born with a divine indwelling light that would guide them more infallibly than any church, bible, clergy or sacraments to union with Christ was especially potent. In George Fox, it was a message proclaimed by one who had been chosen by God to declare this everlasting gospel and complete the restoration to Paradise (Bailey 1992: xi–xv). For many, 'the preaching of Fox and his colleagues, with its emphasis on the transforming presence of Christ in each believer, was exactly what they had been waiting for without knowing it' (Damrosch 1996: 28).

Ritual and cohesion

Within Whitehouse's model, ritual frequency is a key determinant of imagistic or doctrinal religious form. Ritual practice was a controversial aspect of religion in England from the earliest days of the Reformation, and was a key ingredient in the Quaker critique of contemporary Protestantism. As we have seen, some Protestants complained vehemently on the subject of ritualistic excesses, in the Elizabethan Church in the late sixteenth century, in the Jacobean Church in the early seventeenth century, and most vociferously in the Caroline Church of the 1630s under Laud. It must therefore have been particularly galling in the 1650s for Protestants to find themselves accused of 'formalism' by, amongst others, the Quakers (Bailey 1992: 53; Muir 1997). Fox and his associates were determined to establish 'free' worship and rid themselves of external forms, including religious ornamentation, liturgies, creeds, set times and places for worship and, of course, priests. In many respects, they pushed even further the logic of the arguments put forward by the separatist John Greenwood that we discussed earlier. Like the apostles, Friends worshiped when and where the Spirit moved them. Their meetings were not infrequent but they were unscheduled. The true church was to be found in the people not the building. At their meetings, personal revelation was paramount not the transmission of received doctrine, and no attempt was made in these early years to record or codify doctrine. If, though, Quakers rejected many of the identifying features of contemporary Anglicanism, they adopted a few ritual forms of their own. As Adrian Davies observed, early Quakerism was 'determined not to comply with the social practices which

regulated interpersonal behaviour' and 'encouraged members to adopt a distinctive bodily style whether it was in speech, dress or bodily gestures' (2000: 47, 44).

The ethnographer Richard Bauman, seeking to discover 'what was going on inside people's heads in the past' by uncovering 'cognitive categories through the words that label them,' has demonstrated how speaking and silence were key symbols in the Quaker vocabulary (1983: 13). Quakers viewed speaking as a faculty of fallen man and silence as a means, or metaphor, for separating themselves from worldly corruption and achieving the direct experience of the Spirit within. It was also necessary to silence the human voice to allow the divine voice to be heard, internally in the individual and externally in carrying the Word and awakening the inner light within others. They did so with a confidence that extended to xenoglossia. In this respect, Quakers represented an extreme interiorization of the Word initiated by the Protestant Reformation (Bauman 1983: 20–31).

In everyday speech, the Quakers' distinctive vocabulary and cadence was recognized by contemporaries as bolstering group cohesion (Farnworth, 1655; Davies 2000: 51f). Their refusal to doff their hats also aroused extreme antagonism and often violence towards them. Benjamin Furly, the Amsterdam-based Quaker, host to the philosophical Lantern society and later close friend of John Locke, defended the Quakers' refusal to follow human customs with the argument that true honour was found in love and given to those to whom it is due, whilst feigned humility was antichristian and insincere acts 'stink in the nostrils of the Lord' (1663: 25). In similar vein, William Penn asserted that honor was in the mind and expressed by real service to God and Men, that hat-honor and titular-respects were the effects of pride and vanity, and that the address 'you' to a single person was brought in by popes and kings contrary to good speech. Sartorial vanity and common recreations flouted the example of the early Church and the nature of the gospel, were occasioned by pride and wantonness, were contrary to industry and labor, and caused poverty and worldly-mindedness (Penn 1669; Bauman 1983: 43–62).

If contemporaries found Quaker dress codes disconcerting, they were outraged at the early Quaker practice of going naked as a sign; part of the Quaker repertoire of delivering prophecies, imitating the prophet Isaiah or protesting against worldly vanity, most Quakers engaging in this activity seem to have retained at least some form of undergarment (Carroll 1978; Poole 2000: 166–9). As Bauman observed, Quakers participating in this form of communication assumed that the

message reached its intended audience, but many contemporaries clearly failed to discern the metaphorical overtones of the performance beneath its perceived immorality, and resemblances to the practices of the Adamites, a fictional creation of conservative commentators, cannot have been helpful (1983: 84–94). The vicar of Kirkby Stephen, Francis Higginson, described a Quaker in Westmorland who ‘ran like a mad man naked, all but his shirt, through Kendall crying *Repent, repent, wo, wo, come out of Sodome, Remember Lots wife*, with other such stuffe. His principall Auditours were a group of Boyes that followed him through the Town. I almost wonder, what the Devil should mean, in sending abroad such naked Bedlam speakers’ (Higginson 1653: 30).

Ecstatic prophecy and Quaking

Whitehouse describes imagistic rituals as low frequency and highly arousing, including ecstatic practices and altered states of consciousness (2004: 70). Barry Reay has described early Quakerism as ‘essentially an ecstatic movement,’ whilst Richard Bailey has similarly outlined ‘a fully Spirit-led, charismatic movement’ (Reay 1984: 147; Bailey 1992: 53). Prophecies and visions abounded as early Quakers testified to the imminence of the Kingdom of God and the outpouring of the spirit in the last days foretold in scripture (Bailey 1992: 56, 62; Cadbury 2000). Hostile contemporary critics often likened Quakers to earlier ‘enthusiastic’ groups that had periodically plagued the Christian Church, with the prominent Independent John Owen likening them to the Gnostics, an apt parallel given the Quaker internalization of religious experience and relative disengagement from the world (Owen 1658; Reay 1984: 147; Bailey 1992: 53).

Nor were critics slow to emphasize their excessive and uncontrolled behavior allegedly under spiritual impulse, and draw negative consequences. The Quakers obtained their pejorative nick-name from the bodily convulsions often witnessed during moments of heightened religious experience, frequently accompanied by violent eruptions of noise. Gervase Bennett, the justice who interrogated Fox during a prolonged period of imprisonment in Derbyshire in 1650–1, first applied the term to the group.⁴ One anonymous author spoke of the violent eruptions of the Quakers when they met together ‘affrighting even the Beasts that hear them, as if God were served by their roaring and howling like Dogs’ (Anon 1656: 6). Another tract proclaimed the ‘Shreeking, Shakings, Quakings, Roarings, Yellings, Howlings, Tremblings in the Bodies’ of the Quakers on its title-page (Anon 1655). The Baptists Thomas Hicks

and John Griffith spoke of 'Quakings, foamings at the mouth, with dreadful roarings' and 'raving like mad men' (Hicks 1653: 80; Griffith 1654: 6; Underwood 1997: 94). Francis Higginson observed that 'sometimes men, but more frequently Women and Children fall into quaking fits,' whereby they 'fall suddenly down as it were in Swoon,' and 'lye groveling on the Earth' as 'their lips quiver, their flesh and joynts tremble, their bellies swell as though blown up with wind, they foam at the mouth, and sometimes purge as if they had taken Physick' (1653: 15). He identified the quaking as 'Diabolical Raptures immediately proceeding from the power of Satan' (16).

Higginson also connected Quakerism with witchcraft, opining that Fox 'hath been and is vehemently suspected to be a Sorcerer,' spoke of his followers being 'seduced' and cited a 'credible report' that Quakers had sacrificed their children (18, 31). The Independent minister Samuel Eaton also linked the Quakers to witchcraft and sorcery (1654). The anonymous author of *The Quakers Dream* spoke of 'the appearing of the Devil unto them in the likeness of a black Boar, a dog with flaming eye, and a black man without a head' (1655 t.p.). Richard Blome, later a successful London bookseller and cartographer, repeated in 1660 the now standard connection of Quakerism with witchcraft and spoke of a report of Quakers killing their mother after the 'inner light' instructed them to destroy original sin (1660: 114).

Quakers, of course, pointed to divine not diabolical power as the cause of their quaking. The 'sighs and groanes which proceed of faith' that Gifford had spoken of against Greenwood were revisited, with Quakers identifying themselves with the apostle Paul's reference to godly men experiencing sighs as they worked out their salvation with fear and trembling (Phil. 2:12). Old Testament precedents were also pressed into service. James Parnell, who would die in jail in 1656 aged just nineteen after a period of brutal imprisonment exacerbated by a hunger strike, described the quaking and trembling as:

caused by the unresistable power of the Lord ... which the holy men of God witnessed before us in all Ages. *Isaac* the seed of the Promise trembled, *Moses* the servant of God quaked, and trembled, *Jeremiahs* the Prophet of the Lord, his bones shook. *Habakkuk*, his belly trembled and lips quivered; when *Daniel* heard the voyce he fell down and trembled; and *David* the King were as if his bones were out of joint. (Parnell 1655: 1-2; Underwood 1997: 94)

These 'quakings' were unmediated experiences of divine presence, upon which Quakers would later reflect in terms of personal inspiration or revelation. As such, they appear to fall, in Whitehouse's terminology, within the category of spontaneous exegetical reflection – extensive reflection and speculation upon climactic experiences that result in 'elaborate, if idiosyncratic, exegetical knowledge stored in semantic memory' (2004: 72). However, it would be an overstatement to identify these quakings with the traumatic experiences Whitehouse has in mind. There is sufficient evidence to suggest that the quakings were not low frequency experiences but something closer to a semi-regular occurrence at Quaker religious gatherings. This would suggest that perhaps Whitehouse's model needs to adopt a spectrum, rather than opposing poles, upon which to assess the emotional level of ritual experience.

It is a commonplace that social cohesion in sects is fostered by external criticism from a hostile society. Whitehouse argues that the high arousal involved in the imagistic mode tends to produce intense social cohesion and that people bound together this way 'tend to form rather small and localized communities' (73). Converts to Quakerism spoke in terms of joining a new, spiritual family, an experience heightened emotionally by the fact that their conversion often caused long-term breaches with their worldly family. There is plentiful evidence of intense social cohesion amongst the Quakers, fashioned internally through membership of the saints and shared practices, language and apparel, and externally through the opprobrium of outsiders.

Those outsiders were quick to categorize the Quakers in terms of both contemporary and historical nonconformity and heresy, both domestic and foreign. Richard Baxter was one of many to suggest that their movement was founded by Anabaptists, though he also linked them to Boehme (Baxter 1655: 5). Another common charge against the Quakers, also leveled by Baxter, was that they were agents or puppets of popery, a Roman Catholic fifth column operating amongst Protestants. William Prynne argued that case most vehemently in *The Quakers Unmasked, and clearly detected to be but the Spawn of Romish Frogs, Jesuites, and Franciscan Freers; sent from Rome to seduce the intoxicated Giddy-headed English nation* (1655). This proved a particularly difficult slur for the Quakers to shake off, and was still being made in the 1670s (Faldo 1675). Quakers who had spent time abroad in Catholic countries, like Samuel Fisher who visited Rome, came under particular suspicion. Fisher actually traveled to Rome as part of a Quaker mission to convert the pope, surely one of the most optimistic evangelizing missions of this or indeed any period.

From one end of the religious spectrum to the other, Quakers were also readily associated with that most nebulous of post-Civil War groups, the Ranters. Christopher Hill has argued that the early Quaker movement was 'far closer to the Ranters in spirit than its leaders later liked to recall' and that Quakerism absorbed many Ranters (1972: 187, 190).⁵ It was the Quakers' internalization of Christ with its concomitant potential of antinomianism that rendered that charge so frequent. Higginson ventured the opinion, and Thomas Collier agreed, that there were none professing Christianity more irreligious than the Quakers, Ranters excepted (Higginson 1653: 29; Collier 1657: 16). Lodowick Muggleton, who engaged in a running pamphlet war with the Quakers and thought that Fox had set himself up as a pope, viewed the Quakers as less likely to be saved than the Ranters. The 'people called Quakers,' he declaimed, 'are not the Children of the Most High God ... they are the children of the devil, and are the very seed of the devil, and were begotten by him' (Muggleton 1663: 14; Underwood 1997: 26, 37). Fox returned the compliment in kind, denouncing Muggleton and describing the allegedly divine commission of his co-prophet John Reeve as 'but a whispering of Satan' (Fox 1667: 21; Underwood 1997: 15). Fox regarded Ranters as having 'fled the cross' for drunkenness and wantonness though he embraced those who had repented into the Quaker fold (Fox 1654: 13; Hill 1972: 191, 192). Similarly, Parnell voiced an oft-reiterated disassociation with Ranter beliefs, stating that 'we abhor their Principles in our hearts, and deny any liberty to the flesh' (Parnell 1655: 39). In their embracing of what Eliade termed 'the rejection of profane times,' Quakers sought to transcend issues of historicity by internalizing and spiritualizing historical events but without falling into antinomianism. This a-historical approach to Christian experience though was interpreted by outsiders as a denial of the historical death and resurrection of Christ and vilified accordingly (Eliade 1961; Underwood 1997: 120).

Quakers' experience of vilification was not experienced internally, but suffered very much in the world. Suffering was a key ingredient in the early Quaker identity and a powerful force for group cohesion. Quakers were frequently on the receiving end of violence in communities they entered, especially where they disrupted church services or denounced the wickedness of townspeople in the marketplaces. One Quaker account, of many, spoke of a female Friend who was hauled out of a church by local officers and imprisoned in a cage for seven hours in which she was spat and urinated on (Payne 1655: 29–30; Bauman 1983: 66–7). Fox waxed eloquently on the subject of Friends seized in darkness

from their houses and carried 'bound hand and feet into the open fields, in the cold of night, and there left them to the hazard of their lives' (Fox 1653: 5). Quakers collected and published accounts of their suffering both to bolster Friends and to condemn an unjust government. However, it was not just the suffering but also the spirit in which it was endured that was intended to deliver a powerful message; 'Beaten, thrown to the ground, dragged through the mire and run out of town, they would dust themselves off and return to the fray' (Miller 2005: 71). Even Baxter was obliged to concede that the manner in which Quakers held their meetings openly, knowing the consequences of prosecution and imprisonment that would follow, and then embraced that suffering cheerfully, provided a powerful evangelizing tool (Baxter 1696: 435–7; Ingle 1994: 212). Whilst the Quakers naturally looked to scriptural precedents for the suffering of the faithful, they also placed themselves within the English tradition of suffering and martyrdom exemplified in Foxe's *Acts and Monuments*, discussed earlier (Knott 1993). The violence meted out to Quakers on the eve of the Restoration was particularly severe. Suffering remained a motif of Quaker identity during the Restoration, as periodic bouts of legal prosecution saw over ten thousand imprisoned and nearly two hundred and fifty die under arrest. Popular violence against Quakers diminished but did not cease (Miller 2005: 81–103). Suffering served almost as a ritual rite of passage, a shared testament passed on to co-believers in meetings and memorialized in print, part of the collective memory and identity of the movement.

The effective harnessing of the power of print by the Quaker leadership is one reason why Quakerism did not remain confined to the 'small and localized' communities identified by Whitehouse as characteristic of imagistic religious groups. Kate Peters has argued that the Quaker identity, as with other groups discussed in the previous chapter, was both fashioned and projected, in a mutually reinforcing manner, through the medium of print. There was effectively a 'ministry responsible for writing' in operation in early Quakerism with a coterie of eight authors responsible individually and collaboratively for the majority of the nearly three hundred publications issued between 1652 and 1656 (Peters 2005: 22). Higginson complained that Quaker-printed Libels 'flye as thick as Moths up and down the Country' (Higginson 1653: a2; Peters 2005: 44). The Quakers let no attack go unanswered, often refuting them collectively as in Fox's *The Great Mistery of the Great Whore Unfolded* in 1659, a 'calendar of all the printed debates between the Quakers and their adversaries over the past seven years' (Peters 2005: 19). Printed exchanges often followed

on from verbal confrontations, in set-piece debates or less structured arenas, and enabled not just the setting out of the 'definitive' account of events, but a means of continuing where the conversation had left off (Nayler 1655; Pitman 1658). For all the value Quakers placed on silence in worship, when it came to evangelizing against the establishment they were resolved to have the last word.

Modes of religiosity and early Quakerism

Whitehouse's 'modes of religiosity' may offer other clues to historians of early Quakerism. Following Whitehouse's model, we would expect to find increasing evidence of orthodoxy regulation and institutionalization in Quakerism as it developed from a movement into a mainstream denomination of a more doctrinal form. This, indeed, proves to be the case, and from a very early stage. The number of Quakers in England increased tenfold between 1652 and 1654 from 500 to 5000, with a further dramatic increase to 40,000, perhaps even 60,000 by 1660 (Reay 1984: 141; Horle, 1988). This increase corresponds chronologically with internal developments within the Quaker movement that suggest it was increasingly adopting more doctrinal characteristics.

One of these characteristics is centralization, which is related to orthodoxy checks. From 1652, there are signs of the Quaker movement becoming more organized. According to Ingle, circumstantial evidence suggests that in March 1652 Fox met with his prominent followers in a formal conclave near Stanley, north of Wakefield and they planned their forthcoming activities. A few months later, in Lancashire, Fox met Margaret Fell, mistress of Swarthmoor Hall. Swarthmoor became a haven and focal point for Quakers and, as the movement headed south in the spring of 1654 Fell played an instrumental role in organizing and corresponding with many of the itinerant evangelists and supporting their families left behind. This organization was crucial, ensuring that newly established meetings for worship received ongoing visits and that new converts received publications reinforcing their resolve and helping them to cope with persecution. Greater organization bolstered the uniformity of the message being delivered and increased the ability of the Quaker leadership to detect deviations. By 1656 the leadership had devised a fairly systematic system for regional and general gatherings although greater discipline was only imposed after the Restoration (Ingle 1994: 72–106; Booy 2004: 3–4).

Another key characteristic is charismatic leadership, and this was the driving force behind the Quaker expansion. As scholars have long

recognized, periods of radical social change are often a precipitating, but not a necessary, factor in the emergence of charismatic authority (Wilson 1975; Barnes 1978; Willner 1984). Weber defined charisma as 'a certain quality of an individual personality by virtue of which he is set apart from ordinary men and treated as endowed with supernatural, superhuman, or at least specifically exceptional powers or qualities.' These powers are 'not accessible to the ordinary person, but are regarded as of divine origin, or as exemplary, and on the basis of them the individual concerned is treated as a leader' (1964: 18–27). Sociologically, Weber understood charisma as a form of authority, alongside legal and traditional forms, that was dependent for its validity on its recognition, freely given, by an extended group. The authority was sealed by a sign, often a miracle, and its bearer was the recipient of devotion or hero-worship (359–63). Ann Ruth Willner and Dorothy Willner have extended Weber's concept to encapsulate the authority relationship between leader and followers as one in which the leader elicits awe, deference and devotion in response to their teachings, a unique personality or commonly a combination of both (Willner and Willner 1965: 358, 77–88). In similar vein, Whitehouse suggests that, 'To say that a leader is charismatic is to say something about his or her followers, rather than simply about the leader' (1995: 216).

Fox was a charismatic leader in the Weberian mold. He was, by his own reckoning, the Son of God, a manifestation of deity, as well as a miracle-worker. Thomas observed how the early days of Quakerism witnessed miracle-working on the scale of the early Church (Thomas 1971: 150). Fox himself said it would be too tedious to mention all the miracles he had performed so he recorded a representative sample of over 150 in his *Book of Miracles*. Other Quakers performed miracles, including exorcisms, though on a lesser scale. Bailey has described Fox as 'a charismatic prophet, a magus and, above all, an avatar.' His 'christopresent' theology and doctrine of celestial inhabitation, whereby the saints fed on the flesh of the inner, immaterial Christ, led in the direction of deification, a corollary not missed by one of enthusiasm's most perceptive critics, the Cambridge Platonist Henry More. For Friends, the belief that they in some sense became Christ was incredibly empowering individually as well as collectively with fellow saints (Bailey 1992: 19, 45, 77, 81, 115). It has also been suggested that Fox learned early on to use dreams and visions to establish and reinforce his authority, using 'his own visionary capacity as well as his ability to control other people's visions in order to become the foremost Quaker leader' (Gerona 2004: 51). One of Fox's visions concerned the death of

Cromwell and both he and other Quakers, particularly James Nayler, fell into trance-like states that could last a couple of weeks.

Fox received adoration in pseudo-messianic terms from many early Quakers, albeit technically addressed to the celestial flesh within. In thee 'is the everlasting being, the fullness of the fountain of eternity, in thy presence is life,' wrote Ann Curtis. Ann Burden saluted him as 'thou Son of God which the world knoweth not,' whilst Richard Sale called him 'thou god of life and power' and Thomas Holme averred that 'to thee shall all nations bend' (Bates 1836: 21; Bailey 1992: 128–9). From the opposing perspective, Bailey has observed how critics associated his prophetic charisma with a form of coercion. Contemporaries spoke of Fox's ability to stare at people as if he could see into their very souls, whilst parents often lamented the seduction of their children that drew them into the Quaker fold. Higginson spoke darkly of how Fox took newcomers by the hand and their previously hostile opinions dissipated, and accusations of sorcery, witchcraft or demonic influence often appeared in this context (Higginson 1653: 19; Bailey 1992: 120).

Charismatic leadership cannot brook contradiction. 'No movement,' Bailey argues, 'can be led by two avatars who claim prophetic pre-eminence' (1992: 150). The early history of the Muggletonians might be the exception to this rule, as Reeve and Muggleton operated in tandem harmoniously and effectively from 1652 until Reeve's death in 1658. Reeve, however, possessed a distinguishably superior status during his life-time, though this was posthumously reversed by Muggleton (Lamont 2006). Underwood has suggested that in Quakerism's early years 'the strong charismatic qualities of its leaders, the excitement of conversion and mission, and the consolidating influence of surrounding opposition perhaps left relatively little room for strong disagreement internally' (1997: 85). However, Fox's leadership did not operate entirely unopposed. As early as 1649, and up until 1663, Fox faced opposition, or a lack of compliancy, from a group in Nottinghamshire who became known as the 'Proud Quakers,' led by a former Baptist soldier Rhys Jones, who did not accept Fox's authority or many of his tenets, declined to help poor Quakers, and refused to separate from the world to the degree of their fellow Friends (Ingle 1994: 68, 102, 164, 197).

This problem, however, was local and containable. By far the most threatening internal division in the 1650s came in the clash between Fox and Nayler, the only other figure in early Quakerism who possessed a charisma comparable to that of Fox. Many people, both Friends from within and critics from without, identified Nayler as a

co-leader of the early Quaker movement. Whilst in 1653 Higginson could label Fox the 'Grand Master of this Faction' and the 'Father of the Quakers,' in 1657 the Baptist preacher Collier described Nayler as 'the Head Quaker in England' (Higginson 1653: 2; Collier 1657: 17). In the intervening period the Quakers had reached London, and in the capital Nayler was the dominant figure as well as the most prolific of all the Quaker writers, producing nearly fifty works between 1652 and 1656 (Bailey 1992: 115; Damrosch 1996: 12). The anonymous author of *The Devil turned Quaker* stated that some Quakers looked upon Nayler 'as their God' (1656: 9).

Theologically, Nayler shared Fox's theology of celestial inhabitation but he allowed his followers to travel down the road to deification and represent him as a reincarnated Christ, a shift from an internal to an external eschatology that was alien to Fox and does not seem to conform to Nayler's views either (Bailey 1992: 92–5, 153–73). Fox's dispute with Nayler, though, was one waged through the language and symbolism of messiahship. In October 1656 Nayler entered Bristol on the back of a horse, accompanied by a small group singing hosannas in a clear imitation of Christ's entry into Jerusalem on Palm Sunday. Parliament ordered that he be whipped through the streets, put out in the pillory, have his tongue bored through, and have the letter 'B' for blasphemy branded on his forehead before re-entering Bristol facing backwards on a horse and imprisoned indefinitely. Fox expressed no sympathy for Nayler over his draconian punishment. In their final reconciliation in 1660, the defeated Nayler was obliged to bow before Fox and kiss his hand and foot (Bailey 1992: 139, 121; Ingle 1994: 128–32).

From imagistic to doctrinal?

Although the Restoration is traditionally identified as the turning-point in early Quaker history, as the movement was forced to adapt swiftly to a very different political and religious environment, internal dynamics were already driving this shift before 1660. Changes are evident in the aftermath of the Nayler affair. Quakers largely desisted from quaking and speaking in tongues, abandoning their own charismatic heritage to Nayler's followers. It has also been suggested that Fox toned down his rhetoric. There was a slowing, though no halt, in his performance of miracles and self-references to the 'Son of God' receded although his visions continued. Bailey suggests that, 'From an avatar he seems to have become resigned to a self-designation as apostle,' as the final establishment of the Kingdom of God faded into the distance (1992: 183, 238).

The pace of change accelerated after the Restoration. After 1660, the Good Old Cause was dead and buried, and the Quakers were amongst those forced to come to terms with what Hill termed 'the experience of defeat' (1984). After the repeated failures of republican rule, not all Quakers were adamantly opposed to the restoration of monarchy, but it was evident that the movement would have to trim its sails to a new wind. The price for survival in post-Restoration England was compromise and accommodation. Restoration Quakerism was still characterized more by engagement than withdrawal, but, as Underwood has noted, 'by the time of the Act of Toleration, Quaker quietism was already in evidence' (Underwood 1997; Greaves 1992: 122). After 1660 pacifism replaced the crusading apocalyptic imagery of the 1650s. The Quaker struggle continued, but it was now directed through political and legal channels. It was a centrally organized and bureaucratically waged campaign that, after the establishment of the Meeting for Sufferings in 1676, enjoyed a fair measure of success (Greaves 1992: 250). Activities previously condoned, like going naked as a sign, were now actively discouraged.⁶ Rosemary Moore, who has used computerized techniques to trace the chronological development of Quaker thought in printed literature, argues that the progression towards 'theological orthodoxy and political respectability' was in place by 1666 (2000: 15). By 1670, the Quaker establishment, in the form of quarterly, monthly and particular meetings, was wielding ever greater control over the daily lives of members (Davies 2000: 75). Davies, like others, notes the irony that 'as the Quaker faith prospered, an increasing concern was shown by the sect's business meetings to regulate the behaviour of members in a manner similar to that of the secular and church courts which they had displaced' (2000: 101). Set times and places for worship superseded the older unregulated practices; from regarding all forms as dangerous, the Quaker leadership realized that some form was necessary and that ritual sustained authority (Nuttall 1959: 14; Bailey 1992: 53; Underwood 1997: 86). The emphasis on individual expression and spiritual fulfillment, a key ingredient in the early success of the movement, was within a generation beginning to be discarded, and in the place of spontaneity and personal satisfaction, 'a demand for uniformity and submission to corporate power is substituted' (Davies 2000: 102).

Some Quakers deemed such an imposition of centralized discipline as inimical to the founding spirit of the movement, and attempted to hold on to the more imagistic characteristics that had fuelled the movement's early success. The respected missionary John Perrot, whose evangelizing in Italy in the later 1650s led him into the hands

of the Inquisition and three years imprisonment in an institution for mental patients, announced an express commandment from God upon his return that men should not take off their hats when going to prayer. This seemingly inconsequential challenge to Quaker custom escalated when Perrot was backed by a small group of London Quakers who resented Fox's leadership. Fox identified Perrot with Nayler and the spirit of Ranterism. Perrot soon departed for the colonies but remained unbowed. A more serious split developed in the 1670s headed by William Rogers, John Wilkinson and John Story. The flashpoint was the establishment of separate women's meetings but the broader objection was to the centralization of power in London and the influence of a powerful executive body, the 'Morning Meeting,' and its slightly broader counterpart, the 'Meeting for Sufferings' (Rogers 1680; Ingle 1994: 250–65; Underwood 1997: 85–6). As these corporate bodies assumed greater powers, even Fox's individual authority was eclipsed as his role mutated from charismatic leader to revered elder (Bailey 1992: 268–71).

The Quaker aristocrats William Penn and Robert Barclay shifted the theological underpinnings of Quakerism to safer ground, providing intellectual defenses of the faith that were part of a codification process. In effect, Bailey suggests that they 'de-divinized' the movement, redefining the 'inner light' as a disembodied Spirit rather than celestial inhabitation and downplaying the powerful eschatological element that had helped fuel Quakerism's early expansion. Fox did not change his theology, but nor did he resist this theological adaptation, one that drew Quakerism back from beyond the pale to position itself on the spectrum of increasingly respectable English nonconformity (Bailey 1992: 217f.). Barclay's *An Apology for the True Christian Divinity* (1678), in which he provided a full explanation and vindication of Quaker principles and doctrines on the basis of scripture and reason, was actually published first in Latin, a language early Quakers associated with professors and priests. In 1673 Penn, who in the 1680s would found the colony that would become Pennsylvania, provided a justification for the use of ritual forms that showed how far the Quakers had shifted in the direction of institutional practices:

As Man consists of Soul and Body, and as the Body is a kind of Form to the Soul, so whilst Body and Soul remain unseparated, there will and must be some Form suited to the Body, whereby to express the publick, Spiritual Worship performed by the Soul: such are *Places, Words* and *Gestures*; and in the Performance of such Worship the

Body can no more be exempted from some Form or Expression, then can the Soul in its inward and spiritual Station ... though we grant the outward & inward Coming of Christ, to have abrogated such Types and Figures as foreshewed a further Glory, yet Tokans and Demonstrations of present inward Reverence a Divine Honour to God in publick Performance of Worship, not only we never denied, but do affirm them to be as adequate or proper to the Body, as are the Reverence and Honour to the Soul. (1673: 25)

Having pushed the boundaries of free worship, seeking liberation from the restrictions – temporal, spatial, verbal and bodily – that had so vexed separatists like Greenwood a century earlier, the necessity of ‘Tokans and Demonstrations,’ of times and places to meet, set forms and rituals, was finally acceded. The ritualization of religious practice, the repetitive performance encoded in semantic memory that is a key component in Whitehouse’s formulation of doctrinal religions, proved irresistible; the quakings continued but in a more restrained and institutionalized form.

As Quakerism adapted into the broader mainstream of nonconformity, so some opposition softened accordingly. More shifted his position in the 1670s as his confidante and philosopher friend Anne Conway was drawn to the movement. Conway’s home, Ragley Hall, became a new, important center of Quaker activity, a meeting-place for sophisticated and aristocratic Quakers far removed from the missionary-oriented circle around Margaret Fell at Swarthmoor. Quakerism was increasingly acquiring social respectability in the years before the 1689 Act of Toleration granted dissenters the right to worship freely. The memory of the radical past was deliberately de-emphasized to the point of being erased from the Quaker record, first by Fox and later by other Quakers (Bailey 1992: 243, 186–8, xvi n.15).⁷

Conclusion

The history of early Quakerism offers tentative support for the validity of Whitehouse’s ‘modes of religiosity’ model, and the model offers clues as to the dynamics at work behind the movement’s early expansion. However, such a conclusion needs to be carefully qualified. The model itself needs further revision, and even then considerable problems remain for historians. One problem revolves around the nature of historical evidence. Whitehouse notes that ‘a considerable body of evidence is required to demonstrate the operation of modes of religiosity

in any given case' (2000: 160). This poses particular challenges to the historian over and above scholars in fields like anthropology. Whilst historians can legitimately seek answers to predetermined questions – stories about the past are always stories – and whilst they can validly frame those questions from within a particular methodological framework, there is always the temptation to squeeze round-shaped evidence into square-shaped holes.

Whitehouse's identification of memory as a key factor in the formation of religious traditions offers a new dimension to historical memory studies, although historians will also be justifiably wary of making any clear-cut distinctions between imagistic and doctrinal religious forms based on memory distinctions that need to be treated with caution. Whitehouse's model is also more developed on the imagistic side than it is on the doctrinal. Clark suggests that whilst Whitehouse's anthropological and ethnographic study of Papua New Guinea religious beliefs and practices has fed into a coherent and well-developed notion of imagistic religion, discussion of doctrinal religion, for instance Anglicanism, has been conducted in far more generalized terms. What is lacking is a stable body of evidence 'for the doctrinal mode as it exists in long-term stable communities of people committed to its teachings, rituals and social organization' (Clark 2004: 125). Whitehouse has taken this point on board in the development of his model. Furthermore, whilst Whitehouse's model recognizes doctrinal and imagistic modes operating within the one religious tradition, Clark's evidence challenges his assertion that the doctrinal and imagistic aspects remain distinct both in the eyes of participants and observers. The multivalency of Christian worship indicates, she suggests, that this dichotomous model may need revision (Whitehouse 2000: 309; Clark 2004: 131–7). Leo Howe has voiced a similar concern, finding in Bali Hinduism a similarly highly emotional form of devotional singing that Clark identified within the monastery. He notes that, whilst Whitehouse's theory allows for the co-existence of doctrinal and imagistic practices within the same religious tradition, 'if a social correlate supposedly intrinsic to the imagistic mode is found within what is otherwise a doctrinal religion, how do we know this is an instance of coexistence rather than a problem with the theory?' (Howe 2004: 150).

Vial acknowledges the attractiveness of Whitehouse's model for religious practice in Papua New Guinea where doctrinal Christianity superseded an earlier 'pagan' imagistic religion, which, through periodic imagistic splinter groups, alleviates the tedium effect of the official religion. In early modern Europe, though, the categories are less clear-cut – is Protestantism pitted against Catholicism or Anabaptists

against Reformed, or are there doctrinal and imagistic forms of Christianity? Some splinter groups in Reformation Europe were absorbed back into the mainstream, but others remained forever beyond the orthodox pale. Vial suggests that expanding the number of models decreases the chances of misreading the evidence into a predetermined pattern and that forthcoming data will show such patterns to be real and follow predictable trajectories that will enable scholars to 'fill in the inevitable gaps of information left by history' (2004: 156).

Whilst it is tempting to view splinter and revivalist movements in imagistic terms, studies outside of Christianity suggest that appearances can be deceptive. Kimmo Ketola found, in his study of the Hare Krishna movement, that this group actually demonstrated the characteristics of doctrinal religion. He has suggested that, rather than representing imagistic intrusions into doctrinal forms of religion, revivalist movements represent a means for enhancing doctrinal forms (2004: 301–20). Early Quakerism demonstrated some characteristics of imagistic religion – emotionally charged religious rituals and intense social cohesion – but always contained doctrinal characteristics and very quickly adopted a more overall doctrinal form. A comparison between Quakerism and other separatist groups, and between separatist groups and revivalist movements like Methodism that maintained a more amicable relationship with established Anglicanism, might yield more information about the usefulness of Whitehouse's model in this field. However, 'modes of religiosity' is already a useful tool in helping scholars to understand the interaction between all the various components that make up a dynamic religious ecology.

6

Conclusion: Educational Systems and Mnemonic Priorities

Whilst this book has focused on applying the models of Extended Mind and Distributed Cognition to aspects of religious practice in early modern England, this is a reflection of the interests and relative expertise of the authors rather than any limitations on the part of the theory. So, in the interests of broadening the horizon of possible fields of inquiry historians might explore with this model, rather than taking a backwards glance this conclusion looks forward to significant shifts in the history of mnemonic practices and theory that came about in the wake of the Reformation that extended beyond a strictly religious sphere. In particular, we examine attempts at a ‘universal Reformation’ (Greengrass *et al.* 1994: 3) of knowledge in the mid-seventeenth century. Attempts to reform educational practices by the circle around Samuel Hartlib constitute a deliberate form of epistemic engineering. These attempts to form a new cognitive ecology work along similar lines to the religious reform and indeed involve some of the same figures we have previously discussed, chief among them Hezekiah Woodward.

Throughout this book we have looked at the ways that cognitive artifacts and shifting social systems may alter available possibilities for remembering. The debates over educational reform show a similar pre-occupation with the tools, artifacts, and systems surrounding memory, as well as concern about the potential inertness of memory. As authors began to question the humanist storehouse model of human cognition and memory – that is, the assumption that human memory must first be furnished with precepts – so too they began to require an increasing number of external tools and artifacts for forming the learner. In tracing this shift, we will encounter the familiar trope of the parrot that haunts both educational and religious accounts of memory and learning in the early modern period. The parrot is a convenient shorthand for rote

learning, so long as it is seen that rote learning is defined dynamically by reference to whatever pedagogical practices one wishes to reform. The practice of learning ‘without book,’ the explicit starting point of most educational theories, came under challenge in this emergent cognitive ecology. This brief survey of the issues surrounding educational reform maps cultural shifts in the conceptualization of memory itself, especially as it is construed in relationship to the environmental and social surround.

Parrots and ‘lip labour’: sixteenth century educational reforms

Educational reform in the mid-seventeenth century did not arise *de novo*; the critiques of the educational system evident in the Hartlib circle arise out of and extend earlier humanist reforming tendencies. As Thomas Baldwin reminds us, Desiderius Erasmus’s pedagogical theories lay behind many of the assumptions driving the reform of English grammar schools in the mid-sixteenth century. A good humanist, Erasmus’s view of memory was dynamic and active. He distrusted the classical memory system of *loci et imagines* – ‘places and images’ – that remained popular in the sixteenth century, preferring a training based on careful reading and re-reading (Erasmus 1997: 936 n12). Memorization ‘depends at bottom on three conditions: thorough understanding of the subject, logical ordering of the contents, repetition to ourselves. Without these, we can neither retain securely nor reproduce promptly. Read, then, attentively, read over and over again, test your memory vigorously and minutely. Verbal memory may with advantage be aided by ocular impressions’ (Erasmus *De Ratione Studii* qtd Baldwin 1944: I: 83). For Erasmus, the schoolboy was to shuttle between grammar and imitation, memorizing just enough grammar to enable him to read simple Latin. This view of grammar placed a premium on imitation and viewed rules not as pre-existing structures, but as observations that arise out of experience in the language. As Baldwin writes, in theory the child was to do as little memorization of precepts and as much imitation as possible:

So the boy first memorizes by rote the minimum essentials of grammar. He then reads, writes, and speaks in Latin, memorizing further rules as the occasion demands. ... One memorizes by rote only the minimum essentials, but those essentials are drilled in by constant repetition. One then learns the finer points of grammar from systematic reading, instead of spending years in memorizing all the rules by rote before reading is begun. (Baldwin I: 99)

Yet in practice, the results were often far from optimal, and generations of educational theorists decried the negative effects of learning ‘without booke,’ a system that often resulted in mere mindless repetition. In the *Scolemaster*, the royal tutor Roger Ascham described the deleterious effect of this system, recalling that at his grammar school boys went away ‘great lubbers: alwayes learning, and litle profiting: learning without booke, euery thing, vnderstanding within the booke, litle or nothing: Their whole knowledge, by learning without the booke, was tied onely to their tong and lips, and neuer ascended vp to the braine & head, and therefore was some spitte out of the mouth againe’ (Ascham 1570; 2nd book B3v). This trope, familiar from the catechist controversy, draws upon the idea of ‘lip labour,’ shallow encoding of material learnt through rote repetition, in which material remains in the mouth, never ‘ascend[ing] up to the brain and head.’ For Ascham as for other educational theorists in this period, one of the chief reasons for such outcomes was the requirement that the ‘rules’ of grammar be learnt by heart prior to any serious training in the Latin language. Despite its often-acknowledged ineffectiveness, the time-honored method of teaching Latin was to require that boys memorize the rules of Latin grammar, primarily by means of oral recitation by the master and subsequent repetition by the boys. Such was not the intention of the original humanist educators who revised the English pedagogical system in the sixteenth century. But there is a discernable drift-towards-rote, as the original ideals of educational reform were tested by the everyday slog of teaching large numbers of students.

This practice was as ubiquitous as it was condemned. The grammatical precepts schoolboys must retain were peculiarly ill-suited for the constraints of human memory. As the schoolmaster Charles Hoole wrote: ‘Childrens wits are weak, active, and lively, whereas Grammar notions are abstractive, dull, and livelesse; boyes finde no sap, nor sweetnesse in them, because they know not what they mean, and tell them the meaning of the same rule ouer and ouer, their memories are so waterish, that the impression (if any were made in the brain) is quickly gone out again’ (1660: A7r). The persistent view of memory as a storage bank underpins the requirement that the rules be memorized in advance of language learning, but the great pains taken to actually fill that storehouse, at least with materials as poorly designed for memory as grammatical precepts, reveal the deficiencies of the model and the need to support the internal ‘storehouse’ with a range of external helps.

In his treatise, Ascham argued instead for the superiority of the method of ‘double translation,’ a practice he had first trialed on Princess

Elizabeth and which placed imitation of the best models at the forefront of instruction. This method begins with careful oral instruction of the child. After this stage of instruction and repetition, the child is to write his lesson in a little paper book: in turn, after a period of delay, the English is to be compared with the original Latin. Only then are grammatical precepts delivered and explained: ‘This is a liuely and perfite waie of teaching of Rewles: where the common waie, vsed in common Scholes, to read the Grammer alone by it selfe, is tedious for the Master, hard for the Scholer, cold and vncumfortable for them bothe’ (1570: C2r). Ascham thus presented his system of double translation as a means of ensuring that active imitation and understanding predominated over mere repetition and ‘lip labour’. Undergirding that approach however, was not simply a pedagogical theory but an entire extended system involving material and social supports. Whilst the double-translation method is often seen as important because of its reliance on humanist models of imitation, perhaps its true innovation lay in the technology of writing that it employed and its use of these extended tools.¹ One of the marginal notes to the section in which this method is introduced reads: ‘Two paper books.’ The conferring between the two books becomes the scene upon which grammar is introduced in a context-rich – ‘lively’ – environment. As Ascham advises, ‘When the childe bringeth it, turned into latin, the master must compare it with *Tullies* booke, and laie them both together: and where the childe doth well, either in chosing, or true placing of *Tullies* wordes, let the master praise him, and saie here ye do well.’ Further, as the translation is being evaluated, the Master is to ‘lead and teach his Scholer, to ioyn the Rewles of his Grammer booke, with the examples of his present lesson, vntill the Scholer, by him selfe, be hable to fetch out of his Grammer, euerie Rewle, for euerie Example: So, as the Grammer booke be euer in the Scholers hand, and also vsed of him, as a Dictionarie for euerie present vse’ (1570: C1v). The ideal pedagogical scene, then, is extended socially and materially, with the grammar becoming a reference tool rather than an object to be memorized in advance of practice. Only through such an extended system can the child escape lip learning or mindless recitation. Paradoxically, the mode of learning that would at first seem most nearly internal – to get ‘without book’ the precepts of the Latin – instead becomes widely figured as a purely formal, inauthentic mode.

Of course, Ascham implicitly has in mind a private tutorial system, with access to the time, space, and materials to support such a distributed practice (Miller 1963: 169). It was left to another schoolmaster, John Brinsley, to modify the method for tutoring large numbers of children. Brinsley’s

educational writings followed in Ascham's tradition, but with country schools not private tutors in mind he proffered a large number of new tools and schemes to effectively implement this system. Brinsley's influential *Ludus Literarius* (1612) was addressed to the grammar schoolmaster of a provincial school. It is organized as a dialogue between Spoudeus and Philoponus, the former represented as a very weary teacher who finds his profession 'thanklesse,' and the latter as Brinsley's mouthpiece. Building upon rather than revising existing practices, Brinsley recommended a wide range of methods to support the effort of memorization. Brinsley's principal proposed aid, however, was his series of 'grammatical translations' of set schoolbooks, to be used in conjunction with more traditional textbooks. These translations facilitated Ascham's famous goal of using double translation as a means of achieving the best humanist models, without however the burden of the scene of careful conferring of books described above. Schoolmasters with scores of boys could not afford such luxury and 'grammatical translations' provided a ready means of inculcating the practice without extensive instruction in composition. Brinsley argued that his method:

chiefly consists vpon vnderstanding and conceit; and shall more stirre vp the wit and memory ... then all getting without booke can possibly doe. In getting without book alone, words and sentences may bee learned, as by Parats, without any vnderstanding: hereby children must needes vnderstand them; For, hauing nothing but the bare translation, they must be driuen of necessitie to beate out the latine, by learning and by reason, with diligence; and so stirre vp their memories continually. (1612: Q3r)

Again, the trope of the parrot is used as a means of denigrating rote memory, here identified as learning 'without book alone.' 'Beat[ing]' the Latin out of the English is figured here as employing 'reason' and 'diligence' rather than mere repetition. Even within a traditional system with emphasis upon learning without book, Brinsley proposed a highly extended and distributed system for managing the mnemonic demands of early modern education. Yet these revisions of the humanist system nevertheless located the fundamentals of memorization intracranially.

The Hartlib circle and the reform of the grammar

The system of education through precept and language teaching was subjected to vigorous attack in the mid-seventeenth century, primarily

through the efforts of Hartlib and his loosely configured circle of contacts, correspondents and like-minded scholars who shared his passion for practical reform. Inspired by a range of influences, including the writings of Bacon and Comenius, as well as the 'reformed pedagogy of Calvinist Germany' more widely (Greengrass 1994: 15), Hartlib and those with whom he conducted his voluminous correspondence sought to establish a new system of education based upon sensory input and established in conjunction with a new array of tools and artifacts. As Charles Webster suggests, the innovation of the Hartlib circle lay in the 'development of a system of education based on a fusion of the progressive renaissance pedagogical ideas and the empirical philosophy of Bacon' (1970: 65–6). This deliberate form of epistemic engineering of course had a much further reach than pedagogy and was intimately connected with religious reform; on 3 March 1642 Hartlib, his 'most dear and precious friend' John Dury, and Comenius signed a 'fraternal pact' committing themselves to the advancement of religious pacification, education and the reformation of learning (Hartlib Papers 7/109/1A-2B; see Greengrass 2004).

The tight link between religious and pedagogical reform of mnemonic practices is demonstrated in the attempt of Woodward, himself a divine and educationalist, to reform grammar teaching upon similar lines to those he advocated in his *Treatise on Prayer* (1656), which as we saw in Chapter 2 pugnaciously argued that the Lord's Prayer should not be memorized by young children. Woodward's early work on *The Light of Grammar* (1641), published in the year Hartlib finally persuaded Comenius to visit England, attempted to graft the current system of educational practice just described onto a Baconian model of knowledge by asking whether it possible is 'to teach the Grammar by way of Precognition' (Woodward, 1641: A7r), a question posed to Woodward by Hartlib himself.

Woodward began by confronting the inherent conservatism in pedagogy, particularly in respect to the grammar. In response to the imagined objection that 'This is not the way that I was led, and that way was better, for I could con my Grammar from top to toe, every word and letter' (A4v), Woodward invoked both the trope of mumbling papist and the parrot as a means of figuring rote or mindless learning: 'So Friar like he could rime too as it happened: and so much almost could the Parat doe long before him; for that Animal could speake Greeke, which I am sure he understood not, no not a word, not a letter' (A4v). Beginning with precepts and rule-mongering is to proceed 'like a Wiardrawer, backward.' In other words, sense impressions must take

a 'leading hand' (B1v), providing the essential pre-cognition that will allow true learning to take place. 'Pre-cognition' is 'an anticipation of the understanding,' or a method of slipping knowledge unaware into the child that 'conveys a light into the understanding, which the child hath lighted at his owne candle' (C3r).

The challenge Woodward took up is to claim that the apparently formal and rule-bound system of grammar was in fact grounded in sense perception and was somehow organic, prepared for in a 'natural' way by the experiences of the human child in the world. The child 'hath his light at his fingers ends' (C5v), as witnessed by his continual engagement with the physical world. 'I cannot reckon up his Implements,' said Woodward, portraying the child as casting stones, blowing feathers, playing with sticks, reveling in what Vygotsky would call the scaffolding afforded by the adult who assists the child with adult activity, allowing him to 'think he hath done the deed and by his owne strength' (C5v–C6r). The proprioceptive sense of the child's body grounds him in the pre-cognition of arithmetic, as he uses his hands and fingers to reckon, and his facility for and delight in drawing sets the stage for writing.

Woodward was aware that his recommendation to teach writing before the oral recitation of the grammar was at odds with current practice. Writing was generally seen as a technical skill that was taught after the elements of grammar had been memorized orally. The very youngest boys used a bit of pencil or their fingernails to mark the book, no doubt for fear of the mess and expense resulting from writing with pen and ink. Woodward expected opposition to this practice both from masters and from children, who may fear that the child is 'not capable; sitting with his pen may make him grow crooked too' (E1r). But Woodward, even more than Brinsley, viewed writing as an extended practice that fixes thought: 'by one and the same light, at one and the same time, the child shall see his work, understand it, and remember it too, even all this, and altogether by the use of his pen' (E1r).

The enjoyable practice of drawing works as a pre-cognition for the instruction in writing. In turn, writing is cognitively valuable primarily because 'It fixeth the minde of the childe, (who is Squirell-headed)' (E1v). The image of the squirrel-headed child anchored by his pen is a striking formulation of the extended relation between tools, memory, and cognition, recalling the importance of inscription systems in distributed and extended cognitive practices. Yet Woodward also discussed the question of the right use of writing at some length, addressing Socrates' argument that writing hurts memory. Woodward distinguished between

the 'right use' of the pen, in which it is 'subservient to memory,' and the abuse of the pen, 'the tendency to 'scribble, scribble scribble, and then think we have done the deed' (E2r). A cross-reference in the margin to Woodward's previous book, *The Child's patrimony*, provided an autobiographical account of the dangers of the abuse of the pen. Woodward wrote that while at university, 'I charged my paper book with many notes, my memory with few, or none at all' (1640: C3r). Memory is likened to a servant who must be called to account at regular intervals. Writing, then, should not merely be a means of discharging information onto the page, but should instead be imagined as in a dynamic and ongoing relationship with the subject, in a process that places the scholar at the center of an integrative cognitive process that permeates brain and world. Indeed, any tool, including, perhaps especially, simple oral repetition, can become a formalized, 'thoughtless' device. External tools such as pen and paper, correctly used, allowed a dynamic and active mode of thought. In contrast, drilling rote lessons 'is the readiest way in the world to nuzzle up the childe. ... in ignorance' (1640: F8v).

The remainder of the treatise sought to prove that the eight parts of speech laid out in the grammar had essential pre-cognitions in sense experience. The child knows nouns because he is eager to know the names of things, adjectives because he has sensory experience of 'sharp' and 'sweet,' verbs because he prefers action, and so on. The effortless acquisition of linguistic knowledge through simple everyday experiences will, in this formulation, prepare the way for acquiring the formal rules of grammar. Similarly, observing the predilection of like for like in nature – as in flocks of birds, 'boyes sitting with boyes, girles with girles' – teaches the principles of concord and agreement. Everyday figures and tropes are also easily grasped in everyday speech – the child grasps irony when he realizes his mother really intends the opposite meaning when she calls him a 'good boy' in a mocking tone of voice (Woodward, 1640: F1v). Through these experiences, the child 'attains to a more perfect understanding thereof in one weeke, then by a verball repetition of it, he can attaine unto in a whole yeare ... though haply he cannot give you six lines in ryme (which will never be required by any understanding man) yet for every line and word, hee can give you good reason, and that we hope one day, will satisfie a reasonable man' (F3r). Parrots and Friars proceed by rote repetition and the weak surface encoding of rhyme, ensuring that knowledge remains only verbal and superficial; in contrast, the child taught with proper respect to pre-cognition can understand rather than merely repeat.

The method Woodward proposed for instruction in the grammar itself rested upon using examples to form precepts through a combination of 'eye-service' – the careful observation of the unchangeable root and the moveable (servile) ending; the fixing of rules by writing English to Latin and back again; slow and careful progression through the grammar 'as up a paire of staires,' and careful catechising to ensure understanding rather than mere repetition without booke, as is foolishly prescribed by 'Custome, the Universall Monarch or King of the world' (F7v). Mere oral repetition was to proliferate example upon example, with no order and cohesion that would allow the child to have the material 'under safe lock and key.' Throughout, the master must be aware of the cognitive capacities of young children, which are, as we know 'weak and waterish,' first impressions 'no sooner made than gone.' Woodward cited the extraordinary rhetorical power of St. Gregory of Nazianzus, who used language in so vivid a fashion as to constitute 'Pictured speech' (G2v). Teachers and preachers 'cannot be put in mind too often thereof, that their words may not swim in the braine onely, but sinke into the heart also' (G3r). Proceeding from sense to understanding to memory is the only right method of ensuring the proper sedimentation of knowledge, allowing it to move from the watery realms of the brain to the settled foundation of the heart.

While Woodward was at pains to fulfill Hartlib's directive to show that the grammar can indeed be taught by pre-cognition, he ended his little treatise with a reminder of the limitations of any system of grammar. To call a man a 'grammarian' was to abuse him, even more than terming him a hypocrite, a stage player, or a fiddler: 'and a Barber waighed down this Wordy-man above ten thousand pounds in bad money.' A Grammarian is 'in very deed a Babler, a man of ragges,' and the Grammar 'the unfittest booke to gaine the knowledge of things by, that I know in the world.' In fact, Woodward left the Grammar, 'that dull work,' behind for his second treatise, *A Gate of Science opened by a Natural Key: Or, A practical lecture upon the great book of Nature* (1641).

Similarly, others of the Hartlib circle abandoned grammar entirely in favor of an extended set of objects in the world that were much more likely than grammar to sink into the heart. John Dury's *The Reformed School* (1659–1650), printed in Webster's (1970) edition of Hartlib (1970: 139–69), repudiated the current 'preposterous' methods of teaching that placed memory before understanding:

Children are taught to read Authors and learn words and Sentences: before they can have any notion of the Things. ... Rules, sentences,

and Precepts of Arts, before they are furnished with any matter wherunto to apply those Rules and Precepts. And when they are taught these things wherin Reason is to be employed, they are led into a Maze of subtile and unprofitable Notions, whereby their minds are puffed up with a windy conceit of knowledge: their affections taken off from the plainnesse of Usefull Truths; their naturall Corrupt inclinations to pride, vain glory, and contentiousnesse not reformed, but rather strengthened in perversite. (Webster 1970: 150)

This critique is in line with the general disaffection with the excesses of humanist practice and a fear that universities trained young men only in showing off. Dury argued for reversing the preposterous order, leading with sense, 'as a pre-cognition,' and working up the ladder of sense, imagination, memory, and reason. Children, who have no reasoning power, are to be 'plied' with objects that appeal to sense and imagination. Precepts are to come last: 'no Generall Rules are to be given unto any, concerning anything either to be known or practised according to the Rule of any Art or Science, till Sense, Imagination, and Memory have received their impressions concerning that whereunto the Rule is to be applied' (Webster 1970: 154–5). Dury targeted language learning, the traditional cornerstone of humanist education. In this regime languages are devalued, useful only insofar as they 'help with Traditional knowledge' rather than encouraging the 'curious study of Criticisms' suitable only for those who 'delight in Vanities more then in Truths' (157).

Here Dury truly threw down the gauntlet to the grammar school tradition, articulating what is only nascent in the work of Woodward. What follows is an outline of the very different nature of learning and teaching he proposes, based on sense experience, a Comenian-like developmental view of young children, and a strongly pragmatic approach that stresses the manipulation of objects. Thus the youngest child is to learn his mother tongue, to draw 'lines and figures' (not numbers) and, in general, to 'take notice of all Things offered to his Senses' (160); nothing is to be 'offered' to memory, save material received by sense impressions and the 'similitudes of sensuall Objects' (159). The child is to be able to 'minde' and 'repeat' material that he is told, most of which is centered on sacred history, geography, the 'Things' within the world, especially nations, particularly 'the Chiefest Revolutions and Changes which are befallen to his owne Nation since the beginning thereof' (160). Very young children will have only a 'confused masse of notions' (161) about these areas; thus the second portion of the educational process centers around the ordering of the notions and

the exercise of memory, in preparation for ‘Traditionall and Rationall Learning’ (Webster 1970: 161).

This ordering takes place through an extended set of practices of cognitive integration, in which objects in the world are coordinated with the child’s developing internal mechanisms of attention, perception, and memory. Writing and drawing allows ‘Impressions’ to be ‘fixed in their Memories,’ and careful observation and mental ordering of natural and artificial objects, particularly those employed in trade and manufacturing, will allow the child to move towards a ‘certain Method.’ A wide range of tools is prescribed, including ‘the Astronomicall description of the heavens’ in ‘Globes and plain Tables’ (162), as well as equipment for measuring two- and three-dimensional surfaces. The child is to know the practicalities of husbandry, gardening, fishing, and fowling, as well as practical anatomy, both from engravings and from three-dimensional models. A summary knowledge of both national and ecclesiastical history is prescribed. Last, and very definitely least, are the ‘Rudiments and necessary Rules of Grammaticall constructions’ (162); these are to be learned through Comenius’s *Janua Linguarum* rather than Lily’s grammar.

At the ages of thirteen and fourteen this foundation is to be built upon through study of ‘all the Usefull Arts and Sciences’ (163). The aim here is not to heap up particulars, but to encourage the student to ‘observe the Marrow and Method’; that is, to build up a set of rules – to ‘gather to themselves an Encyclopedia’ (163) – based upon their novel synthesis of new material with their former teaching. Subjects included the ‘Latine authors of Agriculture,’ the natural history of Pliny conferred with ‘what they have formerly seen’; practical building arts such as architecture, engineering, fortification and fireworks; moral philosophy; economics and jurisprudence; the theory and practice of mathematics, with an emphasis upon the latter, including mastering instruments, optics, and the art of dialing, along with practical book-keeping; and medicine and surgery, to be taught partly through books and ‘partly in the Operations themselves by an ocular inspection thereof.’ The final arts to be learnt are the ‘Rules of Logicke, Rhetorick and Poesie,’ to be mastered not so much for themselves but insofar as they teach boys to ‘order their own thoughts and expression’ and ‘to search out Truths’; along with the ‘studye of all Humane histories,’ with a view to attaining Wisdome and prudencie’ (164).

The emphasis upon practical applications and the use of optical inspection and physical manipulation of tools presents a very different and practical understanding of what it means to be educated. The

furnishing of the mind is here extended into the world, with learning imagined as shuttling between neural, physiological phenomena and an extended set of social and material practices. Here the extension is specifically seen not as philological in essence, but as composed through both reading and through a haptic engagement with the world. Rather than imagining the child as a storehouse to be furnished first, Dury saw the engagement of the senses and of the body as crucial to any form of education that wishes to avoid solipsism. Colonized by useless philological knowledge, which has perversely become the master rather than the servant of knowledge, the faculty of memory is rendered useless. Like arid knowledge of Logic, which breeds only a 'Pride of contradiction' (*Proposals* 1653, Webster 168), excessive attention to furnishing the memory with grammatical precepts and snatches of Latin prevents any engagement with 'Nature and the Properties of every thing.' Like pragmatically oriented critics of education today, Dury argues that the abstract study of subjects such as geometry, geography, and astronomy – taught without 'ocular demonstration' or the practical understanding of instrumentation – is to study 'meere notions in the aire' (174). Even worse, such subjects as husbandry, navigation, and mineralls are not taught at all, 'neither by description and pictures in the Schooles, nor by ocular inspection in the things themselves.' The current system of grammar learning then is 'wholly abstracted from the things which are most necessary for the life of mankind in a civill Society' (174).

The work of the indefatigable natural philosopher William Petty provides an even more articulated and elaborate schema than does that of Dury. Petty's accomplishments are known in a wide range of fields, including medicine, anatomy, economics, practical invention – including an early auto-pen, known as a 'scheme for double writing' – surveying, and more. The extant portrait of Petty by Isaac Fuller (ca. 1649–50) nicely encapsulates his ideal of combining practical and academic study.² He holds a skull in his hand, but he does not contemplate it directly as does Hamlet, nor does the skull seem to serve primarily as an emblem of melancholy and mortality, as it often does in the Renaissance. Rather, Petty points from the three-dimensional object to its two-dimensional rendering in a book of anatomy, visually demonstrating the idea of shuttling from 'ocular inspection' of objects to studying the extant literature on a subject.

Petty's brief treatise directed to Hartlib – *The Advice of W. P. To Mr. Samuel Hartlib for the Advancement of some particular Parts of Learning* (1647) – demonstrates the odd combination of utopianism and practicality that marked much of the writing of the circle. In the Baconian

spirit, Petty remarked upon the lack of method and coordination that currently prevented further advancement of knowledge: he described

many Wittes and Ingenuities lying scattered up and downe the world, whereof some are now labouring to doe what is already done, and pulling themselves to reinvent what is already invented, others we see quick stuck fast in difficulties, for want of a few Directions, which some other man (might he be met withall) both could and would most easily give him; againe one man wants a small summe of mony, to carry on some designe [while another has money to invest] (Petty, B1v).³

He endorsed the concerted centralized information clearinghouse proposed by Hartlib in his hoped-for 'Office of Address that might survey all books and all mechanical inventions' (see O'Brien 1968). Petty envisaged a vast note-taking system, in which at least two readers are assigned to each useful book and are given 'certaine and well limited Directions' for the collection of the most important material into 'one Booke or great Worke.' Lest this book, which might go into 'many volumes,' itself presented difficulties of access, Petty prescribed that 'most Artificiall Indices Tables or other Helps for the ready finding, remembring and well understanding all things contained in these Bookes must be contrived and put in practice' (B2r).

Petty here anticipated the scientific dictionaries promulgated in the early eighteenth century, such as Ephraim Chambers' *Cyclopaedia* (1728). As Richard Yeo has argued, Chambers' book is an extension of the Baconian ideal of creating an index of the mechanical arts; indeed, as Yeo discusses, it is prefaced with a large engraving in which books are relegated to a tiny room at the rear, while instruments and physical activity dominate the foreground (2001: 121). Some seventy-five years earlier, Petty attempted to fill out the Baconian vision with a proposal for a *Vellus Aureum*, an illustrated compendia of mechanical arts, systematized and ordered rather than 'made out of a farrago of imperfect Relations' (D1v). The book was not to be the mere haphazard compilation of oral directions, but instead 'reduced' to the essentials by a Compiler possessing 'the Alembick of a Curious and rationall head, to extract the Quintessence of whatsoever hee seeth' (D3r). Petty was keenly aware of the importance of managing the material shape of the book and the reader's access to the information within it. Like the encyclopedias in the later seventeenth and early eighteenth centuries, this imagined volume is not to be a glorified commonplace book that prompts the memory of its compiler – rather 'by condensing knowledge, [it]

could function as the archive of a collective memory,' guarding against the twin threats of the 'loss of knowledge and the multitude of books' (Yeo 2001: 83). Hence Petty was specific about the form of indexing required, imagining a system more closely resembling a hypertextual access system than a simple alphabetical reference. Most notably, indices should be constructed around technical matters, including a compilation of the all 'the Artificials' (D2r), the 'Qualities or Schemes of Matter,' the 'Operations' (such as filing, melting, grinding, knitting, and so on), and the 'Tools and Machines,' including 'Files, Sawes, Chisels, Sheeres, Sives, Loomes,' and so on (D2v). These indices in turn must be made to 'handsomely referre One to anothers' (D2v), in an elaborate cross-referencing system that allowed the reader of the manual to produce new knowledge, not simply reproduce old systems. For Petty, the issue was not to remember the contents of the book, but to gain rapid access to it across a range of intellectual and practical categories. Writing is used here not as an aid to memory, but as a form of calculating device.

Petty's educational program was sandwiched between the first account of the *Vellus Aureum* and an elaborate account of a scheme for a hospital. Rather unfortunately, Petty termed his schools 'literary workhouses' (*Ergastulum Literarum*) (B2r-v). His scheme, like that of Woodward and Dury, hinged upon the primacy of sense experience and the developmental observation of childrens' love for the 'study of Things' rather than a 'rabble of words.' Male children 'delight in Drums, Pipes, Fiddels, Guns made of Elder-sticks ... setting even Nut-shells a swimming, handling the tooles of workemen as soon as they turn their backs' (D4r), while girls make mud-pies, pretend to roast meat, dress their dolls, and 'act the Comedy or Tragedy ... of a Womans lying in' (D4r). For this reason, education was to focus on 'sensible Objects and Actions,' including writing using extended technological devices such as the double writing machine, shorthand, and 'reall characters,' drawing, and mathematics. Foreign language instruction may, it was hoped, be rendered virtually obsolete by the introduction of 'reall and Common Characters,' an example of the fondness of such reformers for universal language schemes (Knowlson 1975). All children, no matter their station, were to be taught some form of mechanic art, such as making mathematical instruments and dials, jewel cutting, making musical instruments, chemistry, making navigational instruments, and anatomy, in which students learn to make 'Sceletons and excarnate bowells' (B5v). In learning such arts, gentlemen would become more industrious and less likely to be cheated by artisans.

Petty also advocated that children be inducted into the *Nosocomium Academicum*, to be installed within his proposed 'college of tradesmen.' A miniature Solomon's House, this scheme was to function as

a kind of three-dimensional 'Epitome or Abstract of the whole world.' This structure was an admixture of zoo, botanical garden, museum, library and park: included in it was a 'Repositorie of all kinds of Rarities Naturall and Artificiall,' engines, models, fountains and water-works, books (mentioned in passing), an observatory, and 'galleries of the rarest Paintings and Satues [sic], with the fairest Globes and Geographically Maps of the Best Description' (B6v). A child examining the 'abstract' of the world through his senses would become acquainted with 'all Things and Actions' prior to learning to read, thus avoiding the preposterous practice of learning words first and things only later and that haphazardly, if at all. Such experience would allow him to 'understand all good Bookes afterwards, and smell out the fopperies of bad ones' (B6v). Indeed, Petty viewed his proposed system as particularly beneficial for rooting out vain speculation, sophistry, and endless dispute 'about meer Words and Chymaerical Notions' (D5v), as practiced by fustian preachers, legal pettifoggers, medical quack-salvers, and 'Gramaticasters in Country-schools' (D6r). Rather than wasting their time on philological niceties by 'parratlike repeating herteroclitous Nounes,' boys would be able to build on the foundations of sensory experience and reap the benefit of an available compendia of artisanal knowledge.

In the light of the utopian scheme building of Dury and Petty, Milton's response to Hartlib's request for an outline of his education principles may have been a bit disappointing. As Barbara Lewalski points out, Milton distanced himself from the more utopian schemes of the circle and from their faith in elaborate projects (Lewalski 1994). He remained committed to the essentials of the humanistic system, while agreeing that the present method of forcing young boys to compose themes and verses had 'preposterous' effects:

And that which casts our proficiency therein so much behind, is our time lost partly in too oft idle vacancies given both to Schools and Universities, partly in a preposterous exaction, forcing the empty wits of Children to compose Theams, Verses and Orations, which are the acts of ripest judgment and the final work of a head fill'd by long reading and observing, with elegant maxims, and copious invention. These are not matters to be rung from poor striplings, like blood out of the nose, or the plucking of untimely fruit. (Milton 1967: 231)

While assenting to some of the propositions of the anti-grammarians, Milton's overall point was very different from the anti-linguistic, pragmatic arguments of Hartlib, Dury, Woodward, and Petty. Indeed, implicit

here is an endorsement of the storehouse model of memory, so long as the material placed there is from the very best exemplars: Milton praised 'the final work of a head fill'd by long reading and observing, with elegant maxims, and copious invention' (231). For Milton, what was preposterous was expecting young boys to have stored enough useful and elegant matter for invention, not priority placed on linguistic mastery *per se*. Without proper foundation in the arts, 'unballasted wits' were left to struggle 'in fadomless and unquiet deeps of controversie' (231). For Milton, the 'ballast' is not sensory or pragmatic experience, but is instead orderly instruction in language and literature, suited to the capacities of young children. His programme of learning, while making room for such tools as 'maps and globes' was not so far removed from Erasmian principles – not for Milton the wholesale rejection of the best of the humanist tradition.

In this light, Locke provides an appropriate endpoint. While Locke concurred with a number of the Hartlibian principles, and in particular with their utter distaste for the vain sophistries produced by the grammar school tradition, his work on education equally eschewed utopian ideals, especially those directed at reforming social practices. Nevertheless in *Some Thoughts Concerning Education* (1693/1988), prompted by a query from his friend Edward Clarke regarding how to best raise his son, Locke revealed the extent to which he rejected the prevailing humanist practices and emphasized practical knowledge gained through sensory experience – and particularly through the use of bodily practices, especially habit as inculcated through the body. In the treatise Locke challenged many of the commonplace pieties of the humanist tradition, particularly around the purported moral and intellectual effects of learning verbal material by heart.

Locke began with a minute discussion of the ideal physical and social environment for children, down to directions for avoiding 'costiveness.' In sharp contrast to the global, socially directed programs advocated by the Hartlib circle, Locke's ambit was far more modest: the private education of the young gentleman. The dream of an educational system that would cut across social class and instruct children of all degrees in a utopian framework has no place here. Locke strongly urged against sending boys to school, since they will be infected with bad behavior through exposure to a 'mixed Herd of unruly Boys' interested only in games (#70). He equally inveighed against the practice of entrusting children primarily to the care of servants in the home, since their 'usual Method it is to awe Children, and keep them in subjection, by telling them of *Raw-Head* and *Bloody Bones*'; (138) such early fears make deep impressions, Locke warned. Rather, children are to be kept in the

company of their parents and instructed in virtue through example and repeated habitual practice (#69). He warned against 'The Charging of Children's Memories, upon all Occasions, with *Rules* and Precepts, which they often do not understand, and constantly as soon forget as given' (#64). Instead of listing precepts and rules, the parent and tutor is to teach through 'repeated Practice, and the same Action done over and over again ... till they have got in the habit of doing it well, and not by relying on Rules trusted to their Memories' (#66). The locus of education moves here from the memory conceived as a repository of precepts to the bodily-inculcated habits of presentation, deference, and the like – the example Locke gives is of 'bowing to a Gentleman when he salutes him, and looking in Face when he speaks to him,' a disposition of the body as natural as breathing to the 'well-bred man' (#64). A very different bodily disposition would no doubt be habituated into young girls, and in the male children below the 'gentleman' class.

Such was his concern with instilling virtue through imitation and habit, Locke began to lay out the actual content of the educational programme only towards the end of the letter. Locke's view of memory is essentially non-verbal; he abandons the notion of memory as a kind of internalized library or commonplace book in favor of impressions and bodily habits made second nature through repetition. Unusually, he carefully distinguished between learning to read and learning by heart. In classic humanist practice, the two are almost inseparable, as the child is read out a lecture, which he follows in his book and then is enjoined to repeat the lesson without book, by heart. This easy assimilation of the two processes was rarely recognized or acknowledged by other educational writers, who viewed reading primarily as a means of memorizing through the vocal or sub-vocal repetition necessary to con the lesson. But for Locke memory was not primarily a verbal activity – that is, not a matter of getting 'words' by heart. It is in this way that we can understand his injunction that the basics of the Christian faith be learnt 'perfectly by heart,' but *not* through reading. Rather the Lord's Prayer, the Creeds, and the Ten Commandments should be learnt by oral repetition: 'by some-body's repeating them to him, even before he can read' (#157). Locke argued that 'learning by heart, and *learning to read*, should not I think, be mixed, and so one made to clog the other' (#157). For Locke, reading and memorizing were two entirely different cognitive processes – reading is a means of making knowledge, while memorizing should be used sparingly and only for that material most useful to the grown man. The child is to be kept away from the stories of servants lest they make too deep an 'apprehension' in him; he should begin to read with Aesop because the pleasant stories are weighted with

'useful Reflections' that may serve him when he grows up (Locke #156). Locke recommends that only sacred material should be committed to heart verbally, 'perfectly' (completely) 'without book' (176). He recommends Worthington's catechism because it is verbally faithful to the 'precise words of the Scripture' and suggests that the Bible be mined for its 'moral rules' rather than memorized promiscuously (159).

Latin and grammar should be taught in a 'natural' way – by imitation – rather than by rules and precepts. Here Locke reserved his greatest scorn for the practice of making themes, orations, and verses. Like Milton, he has contempt for themes on weighty subjects being given to ignorant boys: 'And here the poor Lad, who wants knowledge of those things, he is to speak of, which is to be had only from Time and Observation, must set his Invention on the Rack to say something, where he knows nothing; which is a sort of *Egyptian* tyranny, to bid them make Bricks, who have not yet any of the Materials' (#171). The material here is not florilegium or commonplaces, as in the case of Milton, but the material of experience, the maturity and life skills to have anything to say on a subject such as 'amor vincit omnia.' Latin themes were especially pointless, as almost no one would ever have to make a Latin oration.

Singled out for special scorn is the practice of making verses (#174). Either the child has no talent ('genius') for Poetry, in which case the exercise is a torment and a waste of time; or he does possess a 'Poetick Veine,' in which case a father should do all in his power to 'have it stifled, and suppressed, as much as may be.' The worst possible educational outcome would be for a young man to become a poet: 'I know not what reason a Father can have, to wish his Son a Poet, who does not desire him to bid defiance to all other Callings, and Business.' Once a young man gains a reputation as a wit, he is likely to become a gamer and 'the Fiddle to every jovial Company' (#174). Locke clearly equated poets with wits and rakes such as Rochester; the poet is not some serious Miltonic writer of epics, but a wastrel and an idler. Such is the result of memorizing verses.

Almost as objectionable was the humanist practice of commonplacing:

Another thing very ordinary in the vulgar Method Grammar-Schools there is ... their being forced to learn by heart, great parcels of the Authors which are taught them; wherein I can discover no advantage at all, especially to the Business they are upon. Languages are to be learn'd only by reading, and talking, and not by scraps of Authors got by heart; which when a Man's Head is stuff'd with, he has got the just Furniture of a Pedant, and 'tis the ready way to make him one; than which is there nothing less becoming a Gentleman. For what can be more ridiculous, than to mix the rich and handsome

Thoughts and Sayings of others, with a deal of poor Stuff of his own; which is thereby the more exposed, and has no other grace in it, nor will otherwise recommend the Speaker, than a thread-bare russet Coat would, that was set off with large Patches of Scarlet, and glittering Brocard. Indeed, where a Passage comes in the way, whose matter is worth remembrance, and the expression of it very close and excellent (as there are many such in the ancient Authors) it may not be amiss to lodge it in the Mind of young Scholars, and with such admirable Stroaks of those great Masters, sometimes exercise the Memory of School-Boys. But their learning of their Lessons by heart, as they happen to fall out in their Books, without choice or distinction, I know now what it serves for, but to mis-spend their Time and Pains, and give them a disgust and aversion to their Books, wherein they find nothing but useless trouble. (Locke #175)

The Erasmian ideal of a young man furnished with the best examples from the ancients here becomes the ‘furniture of a pedant,’ ‘scraps of Authors got by heart.’ Stuffing the head with ‘Thoughts and Sayings of others’ is to block the possibility of independent thought, to waste time and energy on ill-digested lumps of rhetoric that serve only to help young men show off. Locke argued strenuously against the idea that such practices amount to disciplining or exercising the mind. Such arguments were based on a poor understanding of the mechanics of human memory:

I hear it’s said, That Children should be employ’d in getting things by heart, to exercise and improve their Memories. I could wish this were said with as much Authority of Reason, as it is with forwardness of Assurance, and that this practice were established upon good Observation, more than old Custom. For it is evident, that strength of Memory is owing to an happy Constitution, and not to any habitual Improvement got by Exercise. ‘Tis true, what the Mind is intent upon, and, for fear of letting it slip, often imprints afresh on it self by frequent reflection, that it is apt to retain, but still according to its own natural strength of retention. (#176)

That is, memory is domain specific, as cognitive psychologists today would say; memory is improved only through attention and rehearsal that promotes what is now called ‘over-learning,’ the reiteration and reinforcement of salient material. Locke closes the case by raising the specter of the Actor:

But the learning Pages of *Latin* by heart, no more fits the Memory for Retention of any thing else, than the graving of one Sentence

in Lead makes it the more capable of retaining firmly any other Characters. If such a sort of Exercise of the Memory were able to give it Strength and improve our Parts, Players of all other People must needs have the best Memories, and be the best Company. But whether the Scraps, they have got into their Head this way, makes them remember other things the better; and whether their Parts be improved proportionably to the Pains they have taken in getting by heart others Sayings, Experience will shew. (#176)

Locke's condemnation of players employs similar rhetoric to other educational theorists and to the Protestant Reformers we have examined in the book. Like the parrots figured in both religious and educational discourse, players are represented as mindlessly repeating scraps of memorized verbiage that they barely understand. The grammar school master, the ordinary worshiper, and the common player all misconstrue the nature of remembering, mistaking a storehouse of verbal common-places for an engaged and active understanding. Locke's work, then, is an appropriate final destination for this study, demonstrating both continuities and ruptures with older models of memory.

Just as religious and educational reform were interlinked in this period, so the Extended Mind/Distributed Cognition model that we have explored in regard to the construct of Protestant singing burrows can equally be employed to deepen our understanding of projects to transform educational practice. The vigorous attempts at epistemic engineering characteristic of the Protestant Reformation – in prayer and catechism, print and song, and sacred space – can be seen within the larger context of cognitive ecologies encompassing a whole array of human practices. The model of cognitive history that we have been promulgating can thus be used to pry open many different windows onto the past. In the process it will doubtless undergo further refinement and testing. Whilst we believe that cognitive science offers both valuable insights and compatible methodologies for historians to benefit from, a great deal of work remains to establish this alliance. Whilst some historians are now employing, testing and refining the models recently developed by scholars in the cognitive science of religion field, very few have yet to engage with the cognitive cultural history model proposed by our colleague John Sutton and advanced in the previous chapters. We hope that this book will prompt more scholars to undertake such work. We feel that we have traveled a long way with the mole cricket, but we also know that we have only taken the first steps.

Notes

1 Introduction: Cognitive Ecologies, Distributed Cognition, Extended Mind and Memory Studies

1. Clark's account of the mole cricket is derived from J. S. Turner's discussion of animals and extended physiology (2000).
2. K. Sterelny derives his account of environmental engineering in part from the work of D. Kirsh (1995).
3. On niche construction, see Odling-Smee *et al.* (2003) *Niche Construction: The Neglected Process in Evolution*.
4. For this formulation, we are indebted to J. Sutton's contribution to a conference paper delivered jointly with Tribble at the International Society for Cultural History Conference, University of Ghent, 2008.
5. See P. H. Hutton (1981).
6. L. H. Martin and Jesper Rensen's collection, *Past Minds: Studies in Cognitive Historiography* (London, 2010), brings together historians of ancient religions with an interest in evolutionary and cognitive theorizing. We were unable to consult this volume before going to press.
7. See A. G. Dickens (1964). Haigh's newest book (2007), *The Plain Man's Pathways to Heaven*, examines the points of tension in early modern English Protestantism.
8. Later work taking up and modifying revisionist claims includes J. D. Maltby (1998), A. Walsham (1999), P. Marshall (2003) and A. Pettegree (2005).

2 Attention, Coordination and Memory in Pious Practice: Prayer and Catechism

1. See Whitehouse (2000) for the 'doctrinal mode' concept. Whitehouse's 'modes of religiosity' thesis is explored and critiqued in Chapter 5.
2. For an extensive discussion of this passage in relationship to idolatry and anti-Papal sentiment, see J. Kearney (2002).
3. Such a question, of course, lies at the heart of Claudius's failed prayer in Hamlet, which contrasts the 'words' of the prayer to the 'thoughts,' which lie below. See Targoff (2001) for an extended analysis of this passage.

3 Sacred Space: The Reconfiguring of Cognitive Ecologies in the Parish Church

1. These issues are taken up in a variety of recent publications, including A. Flather (2007) *Gender and Space in Early Modern England*; S. Hamilton and A. Spicer (eds) (2006) *Defining the Holy: Sacred Space in Medieval and Early Modern Europe*; Coster, W. and Spicer, A. (eds) (2005) *Sacred Space in Early Modern Europe*.

2. See Duffy (1992) for an exhaustive discussion of the apparatus of devotion in late medieval England.
3. For 16th century iconoclasm see Aston (1988) *England's Iconoclasts*; *ibid.* (1993a) *Faith and Fire: Popular and Unpopular Religion, 1350–1600*; *ibid.* (1993b) *The King's Bedpost: Reformation and Iconography in a Tudor Group Portrait*; *ibid.* (1996) 'Puritans and Iconoclasm, 1560–1660', in Durston & (eds) *The Culture of English Puritanism, 1560–1700*. For seventeenth-century iconoclasm see J. Spraggon (2003) *Puritan Iconoclasm During the English Civil War*; and J. Phillips (1973) *The Reformation of Images: Destruction of Art in England, 1535–1660*.
4. Discussions of the importance of the sermon for the ministry include: S. Wabuda (2002) *Preaching During the English Reformation*; B. Crockett (1995) *The Play of Paradox: Stage and Sermon in Renaissance England*.
5. Yates 2000: 31. See especially his comparative chapter on England, Scotland, and the Continent: 'Reformation Legacy: Catholic Buildings and Protestant Worship.' For a detailed discussion of the material structures of worship in the English church, including the Laudian controversy, see K. Fincham and N. Tyacke 2007.
6. See W. J. Ong (1958) *Ramus: Method, and the Decay of Dialogue, From the Art of Discourse to the Art of Reason*. Lori Ferrell questions Ong's dismissal of the aridity of Ramism in 'Transfiguring Theology: William Perkins and Calvinist Aesthetics' in C. Highley (ed.) (2002) *John Foxe and His World*.
7. See M. C. Questier (1996) 102–8 for a discussion of the legalities of conformity in the Elizabethan and Jacobean periods.
8. See Walsham (2006) and J. P. Sommerville (1988) for further discussion of these issues.
9. See also Merritt (1998) and Fincham and Tyacke (2007: 74f). For the argument that Charles I was the driving force behind the changes, see J. Davies (1992).
10. See Bosher (1951); Green (1979 and 1978). For a more balanced view identifying the continuing influence of Laudian ideas amongst Anglican high-churchmen, see Fincham and Tyacke (2007: 306f).
11. *ODNB*, 'Beveridge, William (bap. 1637, d. 1708).'

4 Cognitive Ecologies and Group Identity: Print and Song

1. Cole and Cole also argue that Goody's claims for an independent effect of alphabetic literacy have been exaggerated by both his advocates and his detractors.
2. See A. Clark and D. Chalmers (1998) for the thought-experiment analogizing the onboard biological memory of 'Inga' and the notebook used to manage memory by her Alzheimer-afflicted husband, Otto.
3. Until quite recently the only widely available edition was the highly unsatisfactory Cattley edition, published in the nineteenth century. D. Loades and the John Foxe team have partially completed the massive job of an online edition, with a full edition existing for the Marian martyrs section (Books 10–12) and transcriptions for the remainder of the text. See <http://www.hrionline.ac.uk/johnfoxe/index.html>; unless elsewhere noted, we use the 1583 transcription (for material up to Book 10) and online edition (for the Marian material).

4. For work on print and reading in Foxe, see S. Felch (1997); J. N. King (2001, 2006); R. Netzley (2006); M. Breitenberg (1989), as well as the recent volume edited by T. P. Anderson and N. Ryan (2010).
5. See Fox (2000) for a discussion of the wide 'ambit' of the written word.

5 Models of Mind and Memory in the Cognition of Religion: A Case Study in Early Quakerism

1. Whitehouse's theory has undergone various elaborations before finding its fullest expression in *Modes of Religiosity*; for earlier formulations see his *Inside the Cult* (1995) and *Arguments and Icons* (2000).
2. Our thanks to John Sutton for helping us navigate the complex literature on memory.
3. For an illuminating revisiting of the complex and contentious relationship between English Quakerism and European mysticism, see A. Hessayon (2005).
4. The OED's first recorded use of the term was in 1647, describing the religiously inspired convulsions of a group of women who sailed over to England from the continent; Bodleian Clarendon MSS 30 f. They do not appear to have had any association with Fox's group.
5. Hill, of course, believed in the existence of a cohesive Ranter movement; see J. C. Davis (1986).
6. The last 'wave' of going naked as a sign by Quaker activists began in 1659 and ended in 1662; K. L. Carroll, (1978) 81–2.
7. For instance, Thomas Ellwood altered all the twelve accounts of miracles performed by Fox that he retained in his 1694 edition of Fox's *Journal*, minimizing the extent of the miracle and shifting the glory away from Fox; see Bailey (1992: 47). For a balanced evaluation of the *Journal* as a historical source, see T. Corns (1996).

6 Conclusion: Educational Systems and Mnemonic Priorities

1. This technique did not originate with Ascham, though he did much to popularize it. See W. E. Miller (1963) for an account of its precursors.
2. The portrait is reproduced in the *Oxford Dictionary of National Biography*. Gail Kern Paster has a forthcoming article on the subject of skulls as 'objects to think with' in *The Shakespeare International Yearbook*.
3. See Deborah E. Harkness, *The Jewel House* (2007) for a discussion of the accuracy of such observations. Harkness describes a network of men and women involved in discovery and invention, arguing that Bacon's 'Solomon's House' was already in existence in nascent form in Elizabethan London.

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