

**Soul and Body in
Seventeenth-Century British Philosophy**

John Sutton

Peter Anstey (ed),

The Oxford Handbook of British Philosophy in the Seventeenth Century

Ideas about soul and body – about thinking or remembering, mind and life, brain and self – remain both diverse and controversial in our neurocentric age. The history of these ideas is significant both in its own right and to aid our understanding of the complex sources and nature of our concepts of mind, cognition, and psychology, which are all terms with puzzling, difficult histories. These topics are not the domain of specialists alone, and studies of emotion, perception, or reasoning have never been isolated theoretical endeavours. As Francis Bacon described human philosophy or ‘the knowledge of ourselves’, within which he located the study of body, soul, and mind, it ‘deserveth the more accurate handling, by how much it toucheth us more nearly’ (1605/ 2000: 93). The history of ideas in these domains is particularly challenging given the practical dimensions and implications of theories of mind. Because theories of human nature and debates about body and mind do ‘touch us’ so ‘nearly’, they attract and can thus reveal, in specific historical contexts, interconnected discourses or associations which may be quite unlike our own. So there are no neat boundaries around a historical category of ‘seventeenth-century British philosophy of the soul’. The central topic of this chapter can be thought of either as *pneumatology*, the doctrine or science of spirits and souls, or as continuous with the ‘psychologia’ or *psychology* of Aristotelian traditions (Park and Kessler 1988; Hatfield 1995: 184-6). In neither case, however, should we expect any deep unity to be provided by history, geography, discipline, or subject-matter.

Bacon divided that part of human knowledge ‘which concerns the mind’ into two parts; one ‘that inquireth of the substance or nature of the soul or mind, the other that inquireth of the faculties or functions thereof’ (2000). In developing their views about soul and souls, the seventeenth-century writers we examine here, whether insiders or outsiders to the natural

philosophical mainstream, sought integrated approaches to metaphysical, psychological, and ethical issues. On these topics philosophers were always in close dialogue with other studies, of which the most important were theology and medicine, while throughout the century ideas about body, soul, and self were also powerfully articulated in literature (West 1969; Dollimore 1984; Fox 1988; Scarry 1988; Paster 1993, 2004; Sawday 1995; Harris 1998; Rousseau 2004, 2008). Debate about the soul was one of the most controversial of all topics in seventeenth-century philosophy because of its religious, moral, and political implications. Although there was no sealed arena of scholarly dispute isolated from 'external' social and cultural influences, relations between psychology and politics were never determining (in either direction): one view about the soul could in different contexts be put to use in distinct ethical or religious frameworks, and similar ideological ends served on different occasions by quite different metaphysical accounts of our nature.

With regard to geography, Robert Frank's judgement that British medicine in 1600 suffered from both 'linguistic insularity and ... dependent status' (1997: 69) applies equally to the British pneumatology of that period. As with medical theory, by 1700 accounts of the soul in British philosophy were more tightly integrated into in European discussions: but in this chapter we do not deal with questions of British influence by and on the major continental theories of body and soul, which are far from well understood, nor directly with the relations between British political history and theories of body and soul (Schaffer 1987; Marshall 2000). Even by the end of the period, certain topics and approaches might have contingent local significance: Hume, depressed by his own failure to catch his 'self', reflected within fifty years of John Locke's *Essay concerning Human Understanding* that personal identity 'has become so great a question in philosophy, especially of late years in England, where all the abstruser sciences are study'd with a peculiar ardour and application' (1739/ 1978: 259, I.iv.6; compare Tomaselli 1984). Locke and Thomas Hobbes are the only British writers on soul and mind in this period whose views remain part of philosophy's explicit self-image and feature in standard general histories: their work is discussed fully in other chapters, and so here we focus primarily on a range of minor characters within these contested fields of natural philosophy.

The proper usage of key terms such as ‘soul’, ‘spirit’, and ‘mind’ was always under negotiation, and cannot be established neutrally. The concept of soul operated in at least two distinctive contexts, centring on immortality in Christian eschatology, and on our animating life functions in natural philosophy. Neither of these senses closely matches a modern notion of ‘mind’ at all. There are diverging opinions about how explicitly philosophers before the seventeenth century had identified tensions between these distinct senses of ‘soul’, but various systems of Medieval and Renaissance philosophers offered more or less integrated understandings of how life functions relate to human intellectual or rational capacities (Matson 1966; Des Chene 2000; King 2007; Pasnau 2007). While some seventeenth-century philosophers sought to halt or bypass this problematic, in some cases by foregrounding ‘mind’ as a preferred alternative, the majority continued to work within its bounds. Uses of ‘spirit’ were even more diverse: while sometimes ‘spirit’ might refer to the immortal soul, the term was also often applied (in both popular and scholarly usage) to a range of intermediaries in body, world, and cosmos, subtle fluids or finer substances which were neither grossly material nor purely incorporeal (Walker 1985; Sutton 1998: 25-49).

Detailed semantic history of our concepts of mind or soul, attention or consciousness, employing the methods of comparative and cognitive linguistics, has been surprisingly rare (but see Wilkes 1984, 1988; Wierzbicka 1992; Macdonald 2003). Philosophers’ historical work on these topics has instead focused on the legacy of Descartes, in the wake of the tragic histories offered by Gilbert Ryle and Richard Rorty, by which Descartes is said to have invented a mythical, reified ‘mind’ populated by static ‘ideas’ which might or might not reflect or represent reality, in ‘the original sin of modern philosophy’ (Rorty 1980: 60, n.32; compare Putnam 1994). Such large-scale accounts float rather free of the details of seventeenth-century British philosophy, rushing straight from Descartes to ‘British empiricism’ in a familiar but misleading grand narrative (Norton 1981). Theory-driven claims to identify dramatic epistemological ruptures in the seventeenth century would arguably be more convincing if they were also anchored in the messy, ongoing fray of the local natural philosophical field and its neighbours (Schuster 1990). In particular, suggestions that the modern mind-body problem was in some sense new need to be tested not only against debates in ancient and other cultures, but also against the full range of early modern discussions. It is

possible to write a coherent account of some recognizable ‘mind-body problems’ in the seventeenth century (Garber and Wilson 1998): but, in general, the disputants themselves saw concerns about union or interaction as integrated among a much broader set of topics. As well as integrating with accounts of the passions (on which see Amy Schmitter’s chapter in this volume), a fuller history would address not only the varieties of dualism, but also issues about perception and vision (MacIntosh 1983; Yolton 1984a; Meyering 1989; Hatfield 1990; Clark 2007), common sense (Harvey 1975; Heller-Roazen 2007), gesture (Roach 1993, Wollock 2002; Smith 2010), madness and psychological healing (Macdonald 1981), and dreaming and imagination as well as memory and perception. It would also trace the history of intelligent cognitive practices – navigation, experimentation, remembering, reading, and so on, as well as the array of complex and flexible activities of religion, craft, and leisure (Johns 1998; Tribble 2005; Sutton 2007; Smail 2008; Tribble and Keene 2010). This chapter retains a focus, however, on the history of *theories* of mind: we address an array of distinctive positions in metaphysics and psychology which emerged in wider British debate, each with potential religious, moral, and political implications. We proceed by selectively surveying the conceptual inheritance and challenges for British philosophers in the early seventeenth century with regard to both the soul and the humoral temperament of body and mind. We look at some of the eclectic systems developed by British philosophers of the soul in the mid-century period, and at different ways new ideas in both medicine and metaphysics were integrated.

Body, soul, and humoral psychology

Although they saw metaphysics, morals, and medicine as closely linked, early seventeenth-century writers on body and soul could draw on distinctive strands within the fabric of inherited belief across these domains, depending on their commitments and aims. For many purposes, potential points of tension – notably between Christian belief and certain doctrines derived from Aristotle or Galen – were naturally downplayed, even when in other contexts they might spark severe conflict. So, as we vary the grain of historical analysis on ideas about body and soul around 1600, we can find evidence for either a more-or-less unified ‘Elizabethan psychology’ (Anderson 1927), or a more uneasy, crisis-ridden transition (Dollimore 1984; Sawday 1995).

The medieval Christian system from which this inheritance derived was not pervasively dualist: the resurrection of the *body* was the focus of eschatological hope, and more gradualist pictures of human nature assumed a triadic system of bodies, spirits, and souls, or postulated a continuum rather than a sharp line between gross matter and pure incorporeal substance (Bynum 1995a, b). But Aquinas and other philosophers did seek to align Aristotle's account of soul as the form or first actuality of the body with a commitment to personal immortality. The human soul had a threefold nature, or three sets of faculties. In its vegetative faculties, the soul shares its nutritive and reproductive principles with plants and other animals; in its sensitive and self-moving faculties, the soul shares its capacities for perception, movement, memory and so on with other animals; while in its intellectual faculties, the human soul reveals unique capacities to exercise will and reason (Harvey 1975; Kessler 1988; Park 1988). Although for embodied creatures in this life knowledge arises from the senses, the active human intellect can also abstract away from corporeal objects of knowledge, ultimately coming to know immaterial objects, and to reflect on its own nature (Hatfield 1998; Kessler 1988; McCracken 1998).

Despite a range of internal disputes, and the rediscovery of Platonic doctrines which tended to threaten the integration of the organic faculties within a coherent vision of human nature, this broadly consistent picture which encompassed life and cognition or reasoning together in a single system retained its hold. This was so even in the wake of more severe internal crises in the early sixteenth century, when Pope Leo X's Lateran Council in 1513 requested philosophers to apply themselves to demonstrating the immortality of the soul by natural reason (rather than by faith alone), and to refuting such 'extremely pernicious errors' among dissident Aristotelians as that the soul 'is mortal, or only one among all human beings' (Michael 2000; Casini 2007). Both this decree and the brilliant mortalist criticisms of existing rational arguments for the separability of the soul which Pietro Pomponazzi published soon afterwards cast long shadows over subsequent debate (Kessler 1988; Michael and Michael 1989; Sutton 1991; Michael 2000; Gaukroger 2006; Casini 2007). In the wake of the Reformation, this stress on the rational proof of immortality was sometimes seen by British philosophers as dangerously Catholic, and as threatening faith by limiting the power of God to bestow immortality by grace alone (Henry 2009). But in the mid-seventeenth century, not only

Descartes (CSM 2: 4) but also English philosophers like Walter Charleton (1652) appealed to the Lateran command that ‘all Christian Philosophers’ should ‘sharpen their Styles’ and dispel the ‘darkness of atheism’. By then, indeed, doctrines of the soul mattered in part because atheism was seen as a genuine threat. Both Catholic and Protestant reform movements focused attention more sharply on the nature and spiritual health of the soul as ‘the proper object of internal eschatological expectations, as well as external disciplinary pressures, that were of an unprecedented intensity’ (Gowland 2006a: 103). As a result, even though English heterodox and mortalist views of the soul throughout the seventeenth century were in general aimed at identifying the true religion rather than at atheist or secularizing ends, fears of real or imagined radicalism were moral and political in focus as much as metaphysical, and thus subject to more forceful policing (Schaffer 1987; Thomson 2008).

Yet both the scope and much of the detail of Aristotelian psychology continued to animate philosophies of the soul, even as alternatives began to be developed for particular components of the scheme. Below we discuss the ambitious synthesis of Aristotelianism, atomism, and mechanism offered by the eclectic Catholic philosopher Kenelm Digby in his *Two Treatises* (1644): but it is worth noting first that despite the unusual contents of Digby’s first treatise, *Of Bodies*, it is structured in entirely typical fashion as a journey through the realms of Aristotelian natural philosophy. In terms of the book’s overall design, driven by and towards the defence of incorporeality of the intellective soul in its second treatise, Digby claims *not* to be delivering ‘an entire and complete body of natural philosophy’, or meddling with ‘the vast universe’. But in practice this is less of a general disclaimer of Aristotelian ambition than a specific apology for not including a full cosmology that would ‘show by what strings and upon what pins and wheels and hinges the whole world moves’ (1644: 179). Digby’s otherwise comprehensive treatment of matter theory gives rise from chapter 23 onwards to a description of how ‘Plants and Animals ... are framed in common’ and of growth, generation, and nutrition. After discussing sensation and the sensible qualities, treating the external senses in turn, Digby moves on to what Aristotelians called the internal senses, then to self-motion and the passions, pausing throughout to address long-standing controversies on, for example, colour and the nature of animal souls.

The explanatory agenda of seventeenth-century philosophies of the soul thus continued to span the entire range of phenomena between life functions and reason. Importantly, this was also the case for Descartes and his followers, despite their self-conscious elimination of the organic or vital functions of the soul. Rejecting the Aristotelian unity of the soul across its biological and intellectual capacities, Descartes argued that ‘the principle by which we are nourished is entirely distinct in kind from that by which we think’ (CSM 2: 246). Whether we see this new dualism between life and mind as the replacement of the soul by the rational mind, or (as Descartes preferred) the deliberate identification of soul with mind (Pasnau 2007), it still required a full (in this case entirely mechanical) treatment of both life functions (Des Chene 2001) and the sensitive powers (Sutton 2000). So the traditionally intimate links between European metaphysics, medicine, and natural philosophy (Schmitt 1985), to which we now turn, were retained even alongside new metaphysical schemes.

At varying levels of detail and sophistication, British philosophers continued to work within the fusion of Hippocratic, Galenic, and Aristotelian medical and physiological accounts of *psyche* (Siraisi 1990; Lindeman 1999: 8-17; Arikha 2007). This holds both for general works on the human body such as Helkiah Crooke’s *Microcosmographia* (1615) and for more psychologically specific or idiosyncratic works like Thomas Wright’s *The Passions of the Mind in General* (1604/ 1986) and Robert Burton’s *The Anatomy of Melancholy* (1st edn 1621). In Renaissance medicine, Galen’s reworking of the Hippocratic theory of bodily humours and qualities was conjoined with the Aristotelian faculty psychology, providing a framework for understanding health, disease, and temperament which spanned cognitive, vital, and nutritive activity. Health was a proper blending in the mixture of the four humours, and a concomitant equilibrium in the balance of the four qualities. In many versions, the three faculties were localized in liver, heart, and brain, in which operated distinct forms of bodily spirits – natural, vital, and animal spirits respectively. Whether Galen’s idea that the mortal part of the soul just *is* ‘the mixture of the body’ (1997: 153, 157) was accepted or not, moral physiologists and medical psychologists alike could draw especially on rich traditions of psychological explanation in terms of alterations in the animal spirits. These nervous fluids are the messengers in the perception-action cycle: ‘like quick Postes’ or heralds (Crooke 1615: 824), they course differently through brain and nerves in exquisite response to changes in the

humours and the blood, in the bodily organs, or in the passage of materials and spirits across the body's orifices (Sutton 1998: 31-49).

These animal spirits were among the 'naturals', body parts like blood, elements, and humours common to all. The 'six things non-natural' were influences on the balances of these fleeting internal fluids: air or climate, food and drink, sleep and wake, motion and rest, evacuation and repletion, and passions or perturbations of mind (Rather 1968). England's watery climate, for example, was thought to give rise to moist complexions, unusually porous and thus vulnerable bodies, and the inconstant behaviour of its 'variable and unsteady' inhabitants (Floyd-Wilson 2003: 53-66; Sutton 2007). But this geo-humoralist psychophysiology was not a static, environmentally determinist system in which character was fixed into stable types (Bos 2009). The humoral body, or enmattered *psyche*, was dynamic: 'individual complexions were impermanent, and the mixtures upon which they were based were constantly fluctuating' (Gowland 2006b: 46; Paster 2004). Multi-causal accounts of psychological capacities such as memory, imagination, and the passions were a central part of this scheme. The non-naturals long continued to underpin individualized schemes of regimen, retaining a central role in both theory and therapeutic practice well beyond the seventeenth century (Temkin 1973: 181; Siraisi 1990: 97; Wear 1995: 360).

Burton grounds his extraordinary and influential compendium of ideas about melancholy in a coherent synthesis of existing accounts of spirits and of all three faculties of the soul (Babb 1951), located within a 'Digression of Anatomy' (1621/ 1989). As in many popular English writers, Burton's medical psychology also underpinned an ethics of self-regulation which bridged health, thought, and conduct (Schoenfeldt 1998; Tilmouth 2005). English literary, political, and cultural fashions may have shifted more across the remainder of the seventeenth century than did the medico-psychological framework which animated Burton's work. Those who employed this framework knew, however, that it was far from complete or consistent: as well as Burton's tireless cataloguing of disputed points, Crooke appends an explicit and evaluative discussion of 'controversies' on every topic, asking for example 'whether the principal faculties have distinct places in the brain' (1615: 504).

These then are significantly holistic views of the relations between soul, body, and world, in which both natural and moral philosophy require understanding of the complex forms of continuous reciprocal causation by which the person interacts with the physical and social world. Even a self-conscious innovator like Francis Bacon, developing a distinctive method and style for natural philosophy, also employed ‘a deliberate overlapping of explanatory levels’ (Giglioni 2010: 160). This was based, in the speculative system he developed in *Sylva Sylvarum* (published posthumously in 1627), on Bacon’s literal attribution of conflicting structural appetites and motions (such as trepidation, resistance, and liberty) to matter (Bacon 1857-1874, vol.II). In natural philosophy as in moral and civil matters, Bacon saw knowledge as the mastery of ‘the appetites of matter’ (Giglioni 2010): in the case of ‘the cure of men’s minds’, philosophy can supplement divinity by helping us train our own habits just as, by industry and practice, tumblers or wrestlers alter their bodily capacities (Bacon 2000). We can come to understand the ways that inanimate spirits mix with vital spirits to drive the volatile physiology of the self (Rees 1996; Paster 1997; Gaukroger 2001: 166-220).

Kenelm Digby: Aristotelian mechanical philosophy

Early seventeenth century atomistic natural philosophers in England such as Nicholas Hill, Thomas Harriot, and Walter Warner showed some interest in psychological topics. Hill, for example, describes a continuous trajectory in which emanations from objects affect the sense organs, giving rise to sensation, imagination, intellection, and subsequent memory, while Warner invokes animal spirits theory in a physiological psychology based on constant flux (Jacquot 1974). We know little more about the details of the natural philosophies discussed in the 1630s in the circles of Lucius Cary and Charles Cavendish. Although both Digby and Hobbes had links with these groups, their distinctive and novel syntheses of ideas about body and mind owed more to their networks and experiences in France, and to their interests in the new natural philosophies being developed by Descartes, Gassendi, and Mersenne. Where (as described elsewhere in this volume) Hobbes constructed a coherent materialist theory of mind, of a form unprecedented in the Christian era, in close union with a new political philosophy, Digby’s eclectic project was driven in part by the specific and entirely unsuccessful politico-

religious aim of defending a reformed Catholicism acceptable to English Protestants (Henry 1982, 2009).

Despite the failure of his theological projects, the interventions in natural philosophy which Digby undertook along the way are of considerable interest: we see in his work an extraordinary integration of the new mechanical philosophy with the Aristotelian tradition. On mainstream modern accounts of the scientific revolution, such a synthesis should simply not have been possible. The assumption, promulgated in later seventeenth-century rhetoric, that genuinely new philosophy could only emerge by way of the destruction of Aristotelianism, leads even the most sensitive critic to describe Digby's programme as 'a vertiginous cobbling together' of intrinsically incompatible ideas (B. Smith 2009: 116). Digby's intense, richly idiosyncratic natural philosophical prose is a far cry from the official sober style of the Royal Society ideals at a time when the nature of the mechanical philosophy was being forged (Hall 1999). In some contexts Digby does invoke the limitations of matter's capacities, so as to underline the necessity of immaterial principles to explain human understanding and volition (Garber 1998: 770-1). But this is a far cry from having already entrenched the idea that mechanism simply required a revolutionary conception of matter as entirely passive. The historiographical temptation to *identify* the mechanical philosophy with a commitment to passive matter has been shown to result from uncritical acceptance of certain rhetorical claims by Royal Society natural philosophers, and to disguise their invocation of a range of active principles in explanatory practice (Henry 1986a; Schaffer 1987). In Digby's *Two Treatises*, written in an earlier and different context, explanations of natural phenomena in terms of matter in motion coexist comfortably with Aristotelian forms, powers, and faculties.

From the mid-1630s, Digby had worked with the controversial Catholic philosopher Thomas White to defend a renewed theology, rejecting certain Catholic doctrines such as Purgatory, in conjunction with a reformed atomist interpretation of Aristotle which saw his natural philosophy resting on the combination or 'mingling of the least parts or atomes of the said Elements' (1644: 343; Krook 1993; Henry 2009). Digby read Descartes' *Discours de la méthode* when it came out in 1637, and visited Descartes in 1640: he gained a clear sense of Descartes' suppressed work of the early 1630s, especially the key physiological treatise

L'homme. Digby thus came to couple atomistic explanation with the idea that not only nutrition and growth, but also motion, sensation, imagination, and memory could be accounted for in terms of corporeal interactions. Descartes' influence is also apparent in Digby's awareness that our sensory access to reality is partial and selective: 'of this great machine that environs us, we, who are but a small parcel, are not immediately concern'd in every part'. But Digby also criticizes Descartes on a number of significant details. Digby retains an atomistic version of the Aristotelian idea that perception involves a transmission of forms: because 'there is a perpetual flux of little parts or atoms out of all sensible bodies', these 'exceeding little' bodies actually 'get in at the doors of our bodies, and mingle themselves with the spirits that are in our nerves'. Where Descartes saw peripheral stimulation as instantaneously influencing the brain by way of the movement of the nerve as a whole, Digby has sensation as well as motion carried by these 'exceeding little' bodies by way of the animal spirits (the 'porters of all news'), until the information carried by the spirits, 'subtle messengers of the outward world', is judged at 'the tribunal of the brain'. Sceptical challenges are thus kept in check within Digby's theory of perception: there are mediating material transformations involved, but in this revised Aristotelianism little similitudes from the world itself partly drive the internal processes.

Digby reserves vehement criticism of Descartes' physiological psychology for the theory of memory, a topic of considerable moral and political significance in seventeenth-century England, in addition to its intrinsic importance within the natural philosophy of body and soul (Sutton 1998). Correctly interpreting Descartes as arguing that the vehicles of corporeal memory are 'determinate motions' – the patterned flows of animal spirits through the pores of the brain – Digby complains that it is impossible that 'such a multitude of pure motions, as the memory must be stored withal for the use and service of man, can be kept on foot in his brain, without confusion; and for so long a time as his memory is able to extend to'. The 'impressions upon the common sense' are no more likely to be 'actually conserved, always actually moving in our head', than are melodies played on the lute (283). So, according to Digby, memories themselves must be bodies, rather than motions or patterns. Again, he invokes the material bodies which have been driven to the brain from external objects themselves. After they have reached 'that part of the brain where knowledge resides', they

rebound to find ‘some vacant Cell, in which they keep their Ranks and Files, in great quiet and order’, preserving their original order. The ‘little similitudes’ stay there, ‘in the caves of the braine wheeling and swimming about’, until roused by chance, by appetite or fancy, or by the will. When we want to remember a sequence of events, they are again raised up and ‘then they slide successively through the phantasy’. Referring to Galileo’s teachings on the proper motions of undisturbed bodies, Digby describes the aftermath of remembering, when the bodies ‘return gently to their quiet habitation in some other part of the brain’, where they continue to float in a ‘liquid medium’. Of course we do not always succeed in controlling this process, and Digby acknowledges that the fancy will sometimes retrieve the wrong object, or ‘displeasably’ give up the search when ‘grown weary with tossing about the multitude of little inhabitants in its numerous empire’ (286).

Like Bacon, Digby also engaged in ongoing attempts to understand the nature of imagination, which both philosophers thought to have a wider array of influences and effects than commonly supposed. Imagination operated by mechanical powers of sympathy, which could transmit determinate influences by way of the contact of contiguous atomic compounds even over a distance. Although some have suggested that this strand in Digby’s work, especially as it appeared in his later works on the weapon-salve or powder of sympathy, and on plants, signifies a more Platonic turn, away from Aristotle (Janacek 2000), in fact these ideas are consistent with treatments of similar topics in the *Two Treatises*, and with Digby’s overarching atomistic Aristotelianism. They do show Digby’s willingness to accept and seek to explain what seemed to be ‘occult’ phenomena, those whose causes and nature were not manifest: but the explanations he seeks to develop remain, in intention at least, strictly mechanical, aiming to refer to nothing more than the motions and histories of corporeal bodies. Although Digby also speculated on palingenesis and spontaneous generation, and on the means by which God might engineer the resurrection of the human body, he did not see any suggestion that matter might have such unexpected powers to threaten our rational confidence in the immortality of the soul.

In his second *Treatise*, Digby works through the central operations of the intellective soul: apprehension and abstraction, thinking and knowing, discoursing, and voluntary action. He

provides a numerous array of ‘proofs’ of incorporeality and thence immortality: though he borrows some lines of thought from Christian Aristotelianism, Digby’s central vision of the soul is clearly influenced by Descartes (Henry 1982; Garber 1998; Macdonald forthcoming). The soul is not only, as in Descartes, entirely independent of the life functions: further, it is not extended, has no parts and, when severed from its ‘benumbing compartner’ the body, is subject to no local motion, translation, or change. The soul’s fate is wholly fixed by our actions in this life, and then instantaneously attains its future state, ‘invariably for all eternity’, with no interval of either sleep or purgatory. When delivered into an eternity of bliss, the souls of the saved are outside time and happily forgetful. Such descriptions of the soul did not prompt Digby to address the concerns about the nature and means of its union with the body which Descartes discussed in his later works (Sutton 2000). Indeed, ‘Digby never took the problems raised by dualism seriously’ (Garber and Wilson 1998: 839), and in writing with supreme confidence about the state of the soul Digby’s primary intention was to construct a rational religion which Protestants might embrace in the defence against materialism and atheism. Even when later seventeenth-century British philosophers offered similar views on the soul, they tended to disclaim the kind of reasoned certainty that Digby sought, preferring to ascribe their ultimate confidence in immortality to God’s mysterious powers. So Boyle, for example, distanced himself from Digby by quoting Descartes with approval for writing to Princess Elizabeth that his own knowledge of ‘the state of the soul after this life’ was ‘far inferior to that of monsieur (he means Sir Kenelm) Digby’ (1999-2000, 8, p.24).

Philosophies of body and soul in the later seventeenth century

British philosophers in the middle years of the seventeenth century were if anything more eclectic in their approaches to mind, body, and soul than in other areas. Historians’ wish to hone in on a single, coherent theory of mind-body interaction in writers like Walter Charleton, Thomas Willis, Margaret Cavendish, Henry More, Robert Boyle, or indeed John Locke and Isaac Newton may be thwarted by the multiplicity of contexts (moral, medical, metaphysical, pedagogical, theological and more) in which they wrote, and by the diverse aims of the distinctive projects in which any one philosopher might engage over an extended period.

Different targets had to be refuted for different audiences. Materialist and mortalist threats appeared more dangerous on some occasions, on others resurgent Catholicism.

Emily Booth has convincingly argued that Walter Charleton, for example, did not intend to present a coherent atomistic mechanism across his various works on physiology and the soul, but deliberately avoided using a single doctrine. Where Charleton appears to entertain or even endorse incompatible theories of muscular motion, for example, or about the existence and nature of animal spirits, this does not necessarily signal his own uncertainty, but rather a calculated ‘commitment to eclectic method’ as an authoritative and modest form of self-presentation, in which balanced syncretism and professional epistemological caution were to be valued more than innovation or progress (2005: 140, 216; compare Anstey 2000: 5-6 on Boyle’s eclecticism). The fact that Charleton saw no need decisively to choose between Aristotelian faculty psychology and the new corpuscular framework suggests, as Booth puts it, ‘the lack of any discrete theory-change’ in these domains (2005: 104).

So in theories of body and mind, the ‘scientific revolution’ in British natural philosophy was not a thorough, sudden victory for passive mechanical conceptions of the body. Some historians have offered broad characterizations of British forms of dualism, especially after the Restoration, as pulling apart the autonomous, ruling soul from the barren bodily automaton. This interpretation is sometimes linked with a desire on the part of the natural philosophers of the Royal Society to enforce norms of hierarchical order in human nature as in the state, after the confusion of the Interregnum (Easlea 1980, Merchant 1980, Mayr 1986, Sawday 1995). Certainly the language of control, subordination, and dissent is pervasive in many later seventeenth-century works on the soul, and not only in discussions of the passions: ongoing controversies in medical psychology and the moral physiology of self were often negotiated in charged politico-theological settings (Iliffe 1995; Suzuki 1997; Hawkins 2002; Martensen 2004; Thomson 2008). But the accounts of body and soul in question were multifaceted, and resist neat mapping onto ideological agendas. In general matter theory many of these philosophers, on occasion at least, still invoked various properties and powers which do not fit with an austere mechanism of entirely passive material substance (Henry 1986a; Schaffer 1987; Dempsey 2006). As this applies to physiology, the line between strict mechanism and

more ‘chymical’ approaches based on the fermentation of volatile bodily substances was far from firm (Clericuzio 1994). Thomas Willis, for example, developed views closer to Gassendi’s chemical atomism than to Descartes’ physiological psychology. Explicitly retaining the soul’s traditional life functions, Willis (1672) accepted a corporeal or sensitive soul as well as the intellective or rational soul. The sensitive soul governs both life and sensorimotor functions, and can either be governed by or in various relations of conflict with the rational soul (Wright 1991). Willis also argued that the complex and structured windings and turnings of the brain’s solid parts, rather than the ventricles, were central in driving perception, imagination, memory, and some forms of inferential thought: such distinctive questions about the nature of the specific cerebral bases for cognitive functions became increasingly central in later seventeenth-century comparative anatomy and philosophy of neuroscience (Bynum 1973; Brown 1977; Brazier 1984; Zimmer 2004; Smith 2007).

What mattered to these experimental mechanical philosophers was thus not always the particular conception of body with which souls were to be related, but that limits should be firmly set to those powers, whatever they might be. Dualism did not have to take any one particular form. In his remarks on body and mind, Robert Boyle took a different tack (Anstey 2000: 187-204). God may operate, suggests Boyle, not merely through natural and supernatural operations, but also by way of ‘a third sort’: these are operations which are not mechanical, that is ‘natural in a stricter sense’, but ‘supramechanical’ or ‘natural in a larger sense’ (Boyle 1999-2000, 12: 477). Where ordinary interactions between bodies are the occasion of God’s lawlike intervention in the world, cases of mind-body interaction – as when a man through ‘the arbitrary power of his will’ raises a book with his arm – function under distinct and arbitrarily established laws instituted by God. Boyle suggests that the soul may guide or regulate the motion of some parts of the body, in particular the of animal spirits: he seems to have meant that it has the power to determine the direction of bodily motions (Anstey 2000: 193-7).

Only those who were seen as denying that intellect and will needed distinctive explanation were attacked for threatening this balanced space of orthodox dispute about soul and body. On the one hand, the materialist framework for understanding all psychological functions offered

by Thomas Hobbes was widely vilified (Mintz 1962). Some of its most innovative features were thus neglected, such as Hobbes' treatment of the association or 'train of thoughts' or 'mental discourse' (1651), his account of reasoning as computation developed in *De Corpore* (1655), his neo-Stoic stress on 'conatus' or endeavour as a mechanism of self-government or motion outward in a continuous deterministic cosmos (Kassler 1991, 1995, 2000), and his vision of language's transformative effects on the scope and systematicity of human cognition (Pettit 2008). The extensive efforts which Hobbes made to provide a firm scriptural basis for his view that the soul was material and mortal were also repeatedly bypassed, as his opponents identified his views as commonly with atheism as with mortalist doctrines within the Protestant church (Thomson 2008). On the other hand, more vitalistic philosophers who rendered matter spiritual by stressing more consistently its inherent activity, such as Francis Glisson (1672) and Anne Conway (1690), also ran the risk of collapsing intellectual and rational powers into dangerously monistic systems. Glisson, for example, ascribed a pervasive active irritability to biological substance. Organic matter is 'energetic', with perceptive, appetitive, and self-motive qualities, such that it organizes itself into particular compound bodies and grounds from within the exercise of our sensitive and active functions. The nerves, for example, have through 'custom and long practice' attained some autonomy in producing motion (Henry 1987, 1989; Giglioni 2008). Despite their obvious differences, then, the philosophies of body and soul offered by Hobbes and Glisson were among the primary targets of criticism among the Cambridge Platonists, of whom the leading theorist of the soul was Henry More.

More was equally hostile to stricter mechanisms and more florid vitalisms. He had been one of the first English thinkers after Digby to fall under Descartes' spell, telling the Frenchman in his first enthusiastic letter of 1648 that his predecessors in natural philosophers were only dwarves and pygmies in comparison (AT v.237). But among a number of disagreements in their brief correspondence, More had already outlined a very non-Cartesian vision of matter, claiming that 'everything which is called body is alive with a stupid and drunken life' (AT v.383, criticized by Descartes AT v.405, CSM 3.382). Gradually More developed a rich alternative metaphysics which invoked a 'spirit of nature', or plastic power which is essentially for the animation of matter (Gabbey 1982, 1990, 1992; Henry 1986b, 1987).

Considered merely in their mechanical operations, bodies are entirely incapable of complex or sensitive operations, and More constantly poured scorn on those who 'are so sunk into the dull sense of their Bodies' as to deny the incorporeal realm, who reduce all change to 'the result of an Eternal Scuffle of coordinate Causes, bearing up as well as they can' (1662, I.9.2). The brain, being just a 'loose Pulp' of 'a laxe consistence' is on its own no more likely to perform our noble cognitive operations than is 'a Cake of Sewet or a Bowl of Curds' (1662, I: 34). Since the limitations even of sluggish matter are so obvious, More argues, it must be pervaded by a universal 'hylarchic principle' which works in and through it (Henry 2008). Although this view had some influence on More's friend Anne Conway (J. Smith 2009), in dealing with human intellect and reasoning More retained a clearer dualist emphasis on the incorporeality of the soul. Even though the subtle animal spirits are a more suitable medium for interaction with immaterial substance than the pineal gland or the solid parts of the brain, More argues, even they cannot themselves have 'Animadversion, Memory and Reason'. Animal spirits are 'nothing else than matter very thin and liquid', capable of nothing but motion, and 'being loose one from another, fridge and play up and down according to the measure and manner of agitation in them': therefore they are 'utterly incapable of Memory', for 'it is as impossible to conceive Memory compatible to such a Subject, as it is how to write Characters in the water or the wind' (1662, I: 33).

But this concern about memory, central to More's critique of alternative accounts of body and soul, also reveals a different set of priorities from Digby's work. Digby had trusted that individuality would be preserved in the afterlife through the reuniting of soul and body by God's will, since the soul in itself is timeless and forgetful. In contrast, from his earliest poetical works, also written in the 1640s, More had insisted with some concern that the soul itself must retain personal memories after death. Unless this 'very intimate' faculty, the 'very bond of life', is self-sufficient when independent of the body, the happiness of souls might be abated, as oblivion of all things past cuts away awareness of our own deeds: in such a case, the soul 'could never tell/ Why she were thus rewarded, wherefore ill/ Or good she doth enjoy, whether ill or well/ She lived here. Remembrance death doth spill' (1647, stanzas 2, 28-32). This concern continued to animate More's mature philosophy, in which he argues against Descartes that the soul is extended incorporeal substance. More notes that although in this life

animal spirits are a ‘necessary instrument’ of memory, that faculty will be ‘more perfect after death’ (1662 II: 187). He makes a range of detailed suggestions on how the soul preserves, controls, and orders memory impressions, which if left to ‘the bare laws of matter’ would become ‘strangely depraved, if not obliterated’ (1662 II: 93, 105; Sutton 1998). Indeed the second half of the seventeenth century saw a remarkable focus on memory in English natural philosophy, in contexts as diverse as theories of the passions and treatments of hearing and music (Gouk 1991; Kassler 1995): as well as More and Willis, both Joseph Glanvill and Robert Hooke also offered substantial critical and constructive views on how separate events in the past might be retained independently in the brain without interference or confusion (Glanvill 1661/ 1970; Hooke 1705/ 1971; Sutton 1998). Not surprisingly then, memory was also a primary concern, and in similar contexts, for the last philosopher we briefly consider, John Locke.

Locke’s new account of personal identity in the second edition of his *Essay* in 1694 was in part a direct response to the same issues about the preservation of memories at the resurrection. In distinguishing ‘man’ from ‘person’, where the person is continuous over time just as long as it can identify itself by way of continuing consciousness, Locke is treating conscious memories as essential for justice, in the divine as in the human realm (Uzgalis 2009). Though officially unwilling, in the context of the *Essay*, to ‘meddle with the physical consideration of the mind (*Essay* I. i. 1), Locke was fully aware of contemporary physiological views. In II. x, arguing that ideas ‘are said to be in our Memories, when indeed, they are actually no where’, Locke acknowledges that ‘the make of our Animal Spirits ... and the Temper of the Brain’ are likely to ‘influence the Memory’. So when, in the chapter on personal identity (II. xxvii), he wonders if we might ‘see the Absurdity of some of these Suppositions’ if only we know more about how the soul was ‘tied to a certain System of fleeting Animal Spirits’, Locke is countenancing threats to the same set of ideas about justice, morality, and happiness that More had raised (Sutton 1998).

However, Locke’s epistemological caution ran deep, and like many of his natural philosophical peers he was willing to submit to God’s omnipotent pleasure even at the cost of rational understanding. This attitude appears most notably in his famous suggestion about

thinking matter. Stressing the limitations of human knowledge about whether or not ‘some system of matter, fitly disposed’ might or might not have ‘a power to perceive and think’, Locke argues that it is within God’s power, if he pleases, to ‘superadd to matter a faculty of thinking’ (*Essay* IV. iii; Yolton 1984b). Locke’s puzzling references to the possibility of physical or biological thought were among the most influential and controversial through the early decades of the eighteenth century in experimental histories of man, as the direction of philosophical reflection on the mind gradually came to shift (Anstey 2008; Serjeantson 2008). At the end of the century, alongside ongoing traffic across medicine and philosophy on the nature of the soul, natural philosophers and commentators in the wider culture, in Britain as across Europe, continued to discuss the extent of fragility and discontinuity in human cognition, and to delimit the possible ethical responses to their consequent concerns (Fox 1988; Rousseau 2004, 2008; Sutton 2010). Seventeenth-century philosophers had not resolved any of their most pressing psychological, moral, or metaphysical difficulties about body and soul.

Acknowledgements

Many thanks for their help and advice to Peter Anstey, Stephen Gaukroger, John Henry, Jamie Kassler, Paul Macdonald, Doris McIlwain, Gail Kern Paster, John Schuster, and Evelyn Tribble. I'm particularly grateful to Charles Wolfe for detailed and helpful comments on an earlier draft. I should also acknowledge the great help offered by *The Dictionary of Seventeenth-Century British Philosophers*, edited by Andrew Pyle (2000).

References

- Anderson, R.L. (1927) *Elizabethan Psychology and Shakespeare's Plays*. Iowa University Press.
- Anstey, P. (2000) *The Philosophy of Robert Boyle*. London: Routledge.
- Anstey, P. (2008) 'The Experimental History of the Understanding from Locke to Sterne'. *Eighteenth-Century Thought* 4.
- Arikha, N. (2007) *Passions and Tempers: a History of the Humours*. New York: Harper Collins.
- Babb, L. (1951) *The Elizabethan Malady: a Study of Melancholia in English Literature from 1580 to 1642*. East Lansing: Michigan State University Press.
- Bacon, F. (1605/ 2000) *The Advancement of Learning*. M. Kiernan (ed), Oxford: Clarendon Press.
- Bacon, F. (1857-1874) *Works*. J. Spedding, R.L. Ellis, and D.D. Heath (eds), 14 vols, London: Longman.
- Booth, E. (2005) 'A Subtle and Mysterious Machine': *the Medical World of Walter Charleton (1619-1707)*. Dordrecht: Springer.
- Bos, J. (2009) 'The Rise and Decline of Character: Humoral Psychology in Ancient and Early Modern Medical Theory'. *History of the Human Sciences* 22: 29-50.
- Boyle, R. (1772/ 1999-2000) *The Works of Robert Boyle*, Hunter, M., and Davis, E. B. (eds.), 14 vols., London: Pickering and Chatto.
- Brazier, M.A.B. (1984) *A History of Neurophysiology in the Seventeenth and Eighteenth Centuries*. New York: Raven Press.
- Brown, T.M. (1977) 'Physiology and the Mechanical Philosophy in Mid-Seventeenth Century England'. *Bulletin of the History of Medicine* 51: 25-54.

- Burton, R. (1621/ 1989) *The Anatomy of Melancholy*. T.C. Faulker, N.K. Kiessling, and R.L. Blair (eds). Oxford: Clarendon Press.
- Bynum, C.W. (1995a) *The Resurrection of the Body in Western Christianity, 200-1336*. New York: Zone Books.
- Bynum, C.W. (1995b) 'Why All the Fuss about the Body? A Medievalist's Perspective'. *Critical Inquiry* 22: 1-33.
- Bynum, W.F. (1973) 'The Anatomical Method, Natural Theology, and the Functions of the Brain'. *Isis* 64: 445-468.
- Casini, L. (2007) 'The Renaissance Debate on the Immortality of the Soul: Pietro Pomponazzi and the Plurality of Substantial Forms', in P.J.J.M. Bakker and J.M.M.H. Thijssen (eds), *Mind, Cognition and Representation: the tradition of commentaries on Aristotle's De Anima*. Aldershot: Ashgate, 127-150.
- Charleton, W. (1652) *The Darknes of Atheism Dispelled by the Light of Nature: A Physico-Theological Treatise*.
- Clark, S. (2007) *Vanities of the Eye: Vision in Early Modern European Culture*. Oxford: Oxford University Press.
- Clericuzio, A. (1994) 'The Internal Laboratory: the Chemical Reinterpretation of Medical Spirits in England (1650-1680)', in P. Rattansi and A. Clericuzio (eds), *Alchemy and Chemistry in the 16th and 17th Centuries*. Dordrecht: Kluwer, 51-83.
- Conway, A. (1690/ 1982) *The Principles of the Most Ancient and Modern Philosophy*. P. Loptson (ed). The Hague: Martinus Nijhoff.
- Crooke, H. (1615) *Microcosmographia: a Description of the Body of Man*. London: William Jaggard.
- Dempsey, L. (2006) 'Written in the Flesh: Isaac Newton on the Mind-Body Relation'. *Studies in History and Philosophy of Science A* 37: 420-441.
- Des Chene, D. (2000) *Life's Form: Late Aristotelian Conceptions of the Soul*. Ithaca: Cornell University Press.
- Des Chene, D. (2001) *Spirits and Clocks: Machine and Organism in Descartes*. Ithaca: Cornell University Press.

- Digby, K. (1644/ 1978) *Two Treatises: in the one of which, the nature of bodies; in the other, the nature of man's soule; is looked into: in way of discovery, of the Immortality of Reasonable Soules*. Paris: Gilles Blaizot; repr. New York and London: Garland.
- Digby, K. (1658) *A Late Discourse ... Touching the Cure of Wounds by the Powder of Sympathy ...* London: R. White.
- Dollimore, J. (1984) *Radical Tragedy*. Brighton: Harvester Press.
- Easlea, B. (1980) *Witch-Hunting, Magic, and the New Philosophy*. Brighton: Harvester Press.
- Floyd-Wilson, M. (2003) *English Ethnicity and Race in Early Modern Drama*. Cambridge: Cambridge University Press.
- Fox, C. (1988) *Locke and the Scriblerians: Identity and Consciousness in Early Eighteenth-Century Britain*. Berkeley: University of California Press.
- Frank, R.G. (1990) 'Thomas Willis and his Circle: Brain and Mind in Seventeenth-Century Medicine', in G.S. Rousseau (ed), *The Languages of Psyche: Mind and Body in Enlightenment Thought*. Berkeley: University of California Press, 107-146.
- Frank, R.G. (1997) 'Viewing the Body: Reframing Man and Disease in Commonwealth and Restoration England', in W.G. Marshall (ed), *The Restoration Mind*. Newark: University of Delaware Press, 65-110.
- Gabbey, A. (1982) 'Philosophica Cartesiana Triumphata: Henry More (1646-1671)', in T.M. Lennon, J.M. Nicholas, and J.W. Davis (eds), *Problems of Cartesianism*. Montreal: McGill-Queen's University Press, 171-250.
- Gabbey, A. (1990) 'Henry More and the Limits of Mechanism', in S. Hutton (ed), *Henry More (1614-1687)*. Dordrecht: Kluwer, 19-35.
- Gabbey, A. (1992) 'Cudworth, More, and the Mechanical Analogy', in R. Kroll, R. Ashcraft, and P. Zagorin (eds), *Philosophy, Science, and Religion in England 1640-1700*. Cambridge: Cambridge University Press, 109-127.
- Galen (1997) *Selected Works*, ed P.N. Singer. Oxford.
- Garber, D. (1998) 'Soul and Mind: Life and Thought in the Seventeenth Century', in D. Garber and M. Ayers (eds), *The Cambridge History of Seventeenth-Century Philosophy*. Cambridge: Cambridge University Press, 759-795.

- Garber, D. and Wilson, M. (1998) 'Mind-Body Problems', in D. Garber and M. Ayers (eds), *The Cambridge History of Seventeenth-Century Philosophy*. Cambridge: Cambridge University Press, 833-867.
- Gaukroger, S. (2006) *The Emergence of a Scientific Culture: Science and the Shaping of Modernity, 1210-1685*. Oxford: Oxford University Press.
- Giglioli, G. (2008) 'What Ever Happened to Francis Glisson? Albrecht Haller and the Fate of Eighteenth-Century Irritability'. *Science in Context* 21: 465-498.
- Giglioli, G. (2010) 'Mastering the Appetites of Matter: Francis Bacon's *Sylva Sylvarum*', in C.T. Wolfe and O. Gal (eds), *The Body as Object and Instrument of Knowledge: Embodied Empiricism in Early Modern Science*. Berlin: Springer, 149-167.
- Glanvill, J. (1661/ 1970) *The Vanity of Dogmatizing*. S. Medcalf (ed). Brighton: Harvester Press.
- Glisson, F. (1672) *Tractatus de natura substantiae energetica*. London: E. Fleisher.
- Gouk, P. (1991) 'Some English Theories of Hearing in the Seventeenth Century: Before and After Descartes', in C. Burnett, M. Fend, and P. Gouk (eds), *The Second Sense: Studies in Hearing and Musical Judgement from Antiquity to the Seventeenth Century*. London: Warburg Institute, 95-113.
- Gowland, A. (2006a) 'The Problem of Early Modern Melancholy'. *Past and Present* 191: 77-120.
- Gowland, A. (2006b) *The Worlds of Renaissance Melancholy: Robert Burton in Context*. Cambridge: Cambridge University Press.
- Hall, R. (1999) 'Unnoticed Words and Senses from Sir Kenelm Digby'. *Notes and Queries*, March, 21-22.
- Harris, J.G. (1998) *Foreign Bodies and the Body Politic: Discourses of Social Pathology in Early Modern England*. Cambridge: Cambridge University Press.
- Harvey, E.R. (1975) *The Inward Wits: Psychological Theory in the Middle Ages and the Renaissance*. London: Warburg Institute.
- Hatfield, G. (1990) *The Natural and the Normative*. Cambridge, MA: MIT Press.
- Hatfield, G. (1995) 'Remaking the Science of Mind: Psychology as Natural Science', in C. Fox, R. Porter, and R. Wokler (eds), *Inventing Human Science: Eighteenth-Century Domains*. Berkeley: University of California Press, 184-231.

- Hatfield, G. (1998) 'The Cognitive Faculties', in D. Garber and M. Ayers (eds), *The Cambridge History of Seventeenth-Century Philosophy, vol. II*. Cambridge: Cambridge University Press, 953-1002.
- Hawkins, M. (2002) "'A Great and Difficult Thing": Understanding and Explaining the Human Machine in Restoration England', in I. Morus (ed), *Bodies/ Machines*. Oxford: Berg, 15-38.
- Heller-Roazen, D. (2007) *The Inner Touch: Archaeology of a Sensation*. New York: Zone Books.
- Henry, J. (1982) 'Atomism and Eschatology: Catholicism and Natural Philosophy in the Interregnum'. *British Journal for the History of Science* 15: 211-239.
- Henry, J. (1986a) 'Occult Qualities and the Experimental Philosophy: Active Principles in pre-Newtonian Matter Theory'. *History of Science* 24: 335-381.
- Henry, J. (1986b) 'A Cambridge Platonist's Materialism: Henry More and the Concept of Soul'. *Journal of the Warburg and Courtauld Institutes* 49: 172-195.
- Henry, J. (1987) 'Medicine and Pneumatology: Henry More, Richard Baxter, and Francis Glisson's *Treatise on the Energetic Nature of Substance*'. *Medical History* 31: 15-40.
- Henry, J. (1989) 'The Matter of Souls: Medical Theory and Theology in Seventeenth-Century England', in R.K. French and A. Wear (eds), *The Medical Revolution of the Seventeenth Century*. Cambridge: Cambridge University Press, 87-113.
- Henry, J. (2008) 'Henry More'. *Stanford Encyclopedia of Philosophy (Fall 2008 Edition)*, Edward N. Zalta (ed.), URL = <http://plato.stanford.edu/archives/fall2008/entries/henry-more/>.
- Henry, J. (2009) 'Sir Kenelm Digby, Recusant Philosopher', in G.A.J. Rogers et al (eds), *Insiders and Outsiders in 17th-Century Philosophy*. London: Routledge, 43-75.
- Hobbes, T. (1651/ 1968) *Leviathan*. C.B. Macpherson (ed). Harmondsworth: Penguin.
- Hobbes, T. (1655/ 1981) *De Corpore*, trans. A.P. Martinich. New York: Abaris Books.
- Hooke, R. (1705/ 1971) *Lectures of Light*, in R. Waller (ed), *The Posthumous Works of Robert Hooke*. London: Frank Cass and Co.
- Hume, D. (1739/ 1978) *A Treatise of Human Nature*. Oxford: Clarendon Press.
- Iiffe, R. (1995) "'That Puzleing Problem": Isaac Newton and the Political Physiology of Self'. *Medical History* 39: 433-458.

- Jacquot, J. (1974) 'Harriot, Hill, Warner and the New Philosophy', in J.W. Shirley (ed), *Thomas Harriot: Renaissance Scientist*. Oxford: Clarendon Press, 107-128.
- James, S. (1997) *Passion and Action: The Emotions in Seventeenth-Century Philosophy*. Oxford: Clarendon Press.
- Janacek, B. (2000) 'Catholic Natural Philosophy: Alchemy and the Revivification of Sir Kenelm Digby', in M. Osler (ed), *Rethinking the Scientific Revolution*. Cambridge: Cambridge University Press, 89-118.
- Johns, A. (1998) *The Nature of the Book: print and knowledge in the making*. Chicago: Chicago University Press.
- Kassler, J.C. (1991) 'The Paradox of Power: Hobbes and Stoic Naturalism', in S. Gaukroger (ed), *The Uses of Antiquity: the scientific revolution and the classical tradition*. Dordrecht: Kluwer, 53-78.
- Kassler, J.C. (1995) *Inner Music: Hobbes, Hooke, and North on Internal Character*. London: Athlone Press.
- Kassler, J.C. (2000) 'On the Stretch: Hobbes, Mechanics, and the Shaking Palsy', in A. Coronas and G. Freeland (eds), *1543 And All That: word and image in the proto-scientific revolution*. Dordrecht: Kluwer, 151-188.
- Kessler, E. (1988) 'The Intellectualive Soul', in C.B. Schmitt and Q. Skinner (eds), *The Cambridge History of Renaissance Philosophy*. Cambridge: Cambridge University Press, 485-534.
- King, L. (1974) 'The Transformation of Galenism', in A. Debus (ed), *Medicine in Seventeenth-Century England*. Berkeley: University of California Press, 7-31.
- King, P. (2007) 'Why Isn't the Mind-Body Problem Medieval?', in H. Lagerlund (ed), *Forming the Mind: essays on the internal senses and the mind/body problem from Avicenna to the Enlightenment*. Berlin: Springer, 187-205.
- Krook, D. (1993) *John Sergeant and His Circle: A Study of Three Seventeenth-Century English Aristotelians*. Leiden: Brill.
- Lindeman, M. (1999) *Medicine and Society in Early Modern Europe*. Cambridge: Cambridge University Press.
- Locke, J. (1690/ 1975) *An Essay Concerning Human Understanding*. P.H. Nidditch (ed). Oxford: Clarendon Press.

- Macdonald, M. (1981) *Mystical Bedlam: Madness, Anxiety, and Healing in Seventeenth-Century England*. Cambridge: Cambridge University Press.
- Macdonald, P.S. (2003) *History of the Concept of Mind: Speculations about Soul, Mind and Spirit from Homer to Hume*. Aldershot: Ashgate.
- Macdonald, P.S. (forthcoming) 'Introduction' to Digby, *Two Treatises*. Leiden: Brill.
- MacIntosh, J.J. (1983) 'Perception and Imagination in Descartes, Boyle, and Hooke'. *Canadian Journal of Philosophy* 13: 327-352.
- McCracken, C. (1998) 'Knowledge of the Soul', in D. Garber and M. Ayers (eds), *The Cambridge History of Seventeenth-Century Philosophy*. Cambridge: Cambridge University Press, 796-832.
- Marshall, J. (2000) 'Some Intellectual Consequences of the English Revolution'. *The European Legacy* 5: 515-530.
- Martensen, R.L. (2004) *The Brain Takes Shape: an Early History*. Oxford: Oxford University Press.
- Matson, W.I. (1966) 'Why Isn't the Mind-Body Problem Ancient?'. In P. Feyerabend & G. Maxwell (eds), *Mind, Matter, and Method: essays in philosophy and science in honor of Herbert Feigl*. Minneapolis: University of Minnesota Press, 92-102.
- Mayr, O. (1986) *Authority, Liberty and Automatic Machinery in Early Modern Europe*. Baltimore: Johns Hopkins University Press.
- Merchant, C. (1980) *The Death of Nature: Women, Ecology, and the Scientific Revolution*. New York: Harper and Row.
- Meyering, T.C. (1989) *Historical Roots of Cognitive Science*. Dordrecht: Kluwer.
- Michael, E. (2000) 'Renaissance Theories of Body, Soul, and Mind', in J.P. Wright and P. Potter (eds), *Psyche and Soma: Physicians and Metaphysicians on the Mind-Body Problem from Antiquity to the Enlightenment*. Oxford: Clarendon Press, 148-172.
- Michael, E. and Michael, F.S. (1989) 'Two Early Modern Concepts of Mind: Reflecting Substance vs. Thinking Substance'. *Journal of the History of Philosophy*, 27: 29-48.
- Mintz, S.I. (1962) *The Hunting of Leviathan: Seventeenth-Century Reactions to the Materialism and Moral Philosophy of Thomas Hobbes*. Cambridge: Cambridge University Press.
- More, H. (1647/ 1969) *Philosophical Poems*. Menston: Scholar Press.

- More, H. (1662/ 1978) *A Collection of Several Philosophical Writings*. 2 volumes, New York: Garland.
- Norton, D.F. (1981) 'The Myth of "British Empiricism"'. *History of European Ideas* 1: 331-344.
- Park, K. (1988) 'The Organic Soul', in C.B. Schmitt and Q. Skinner (eds), *The Cambridge History of Renaissance Philosophy*. Cambridge: Cambridge University Press, 464-484.
- Park, K. and Kessler, E. (1988) 'The Concept of Psychology', in C.B. Schmitt and Q. Skinner (eds), *The Cambridge History of Renaissance Philosophy*. Cambridge: Cambridge University Press, 455-463.
- Pasnau, R. (2007) 'The Mind-Soul Problem', in P.J.J.M. Bakker and J.M.M.H. Thijssen (eds), *Mind, Cognition and Representation: the tradition of commentaries on Aristotle's De Anima*. Aldershot: Ashgate, 3-19.
- Paster, G.K. (1993) *The Body Embarrassed: Drama and the Disciplines of Shame in Early Modern England*. Ithaca: Cornell University Press.
- Paster, G.K. (1997) 'Nervous Tension: Networks of Blood and Spirit in the Early Modern Body', in D. Hillman and C. Mazzio (eds), *The Body in Parts*. London: Routledge, 107-125.
- Paster, G.K. (2004) *Humoring the Body: Emotions and the Shakespearean Stage*. Chicago: Chicago University Press.
- Pettit, P. (2008) *Made with Words: Hobbes on Language, Mind, and Politics*. Princeton, NJ: Princeton University Press.
- Putnam, H. (1994) 'How Old Is the Mind?', in *Words and Life*. Cambridge, MA: Harvard University Press, 3-21.
- Pyle, A. (ed) (2000) *The Dictionary of Seventeenth-Century British Philosophers*. Bristol: Thoemmes Press.
- Rather, L.J. (1968) 'The "Six Things Non-Natural": A Note on the Origins and Fate of a Doctrine and a Phrase'. *Clio Medica* 3, 337-347.
- Rees, G. (1996) 'Bacon's Speculative Philosophy', in M. Peltonen (ed), *The Cambridge Companion to Bacon*. Cambridge: Cambridge University Press, 121-145.
- Roach, J.R. (1993) *The Player's Passion: Studies in the Science of Acting*. University of Michigan Press.
- Rorty, R. (1980) *Philosophy and the Mirror of Nature*. Oxford: Blackwell.

- Rousseau, G.S. (2004) *Nervous Acts: essays on literature, culture and sensibility*. London: Palgrave.
- Rousseau, G.S. (2008) “‘Brainomania’: brain, mind and soul in the long eighteenth century’. *British Journal for Eighteenth-Century Studies* 30, 161-191.
- Sawday, J. (1995) *The Body Emblazoned: Dissection and the Human Body in Renaissance Culture*. London: Routledge.
- Schaffer, S. (1987) ‘Godly Men and Mechanical Philosophers: Souls and Spirits in Restoration Natural Philosophy’. *Science in Context* 1: 55-85.
- Schmitt, C.B. (1985) ‘Aristotle Among the Physicians’, in A. Wear, R.K. French, and I.M. Lonie (eds), *The Medical Renaissance of the Sixteenth Century*. Cambridge: Cambridge University Press, 1-15.
- Schoenfeldt, M.C. (1999) *Bodies and Selves in Early Modern England: Physiology and Inwardness in Spenser, Shakespeare, Herbert, and Milton*. Cambridge: Cambridge University Press.
- Schuster, J.A. (1990) ‘The Scientific Revolution’, in R.C. Olby et al (eds), *Companion to the History of Modern Science*. London: Routledge, 217-242.
- Schwartz, H. (1978) *Knives, Fools, Madmen, and the Subtile Effluvium: a Study of the Opposition to the French Prophets in England, 1706-1710*. Gainesville, FL: Florida University Press.
- Serjeantson, R.W. (2008) “‘Human Understanding’ and the Genre of Locke’s *Essay*’. *Intellectual History Review* 18: 157-171.
- Siraisi, N. (1990) *Medieval and Early Renaissance Medicine: An Introduction to Knowledge and Practice*. Chicago: Chicago University Press.
- Smail, D.L. (2008) *On Deep History and the Brain*. Berkeley: University of California Press.
- Smith, B.R. (2009) *The Key of Green: Passion and Perception in Renaissance Culture*. Chicago: University of Chicago Press.
- Smith, J.E.H. (2007) ‘Language, Bipedalism and the Mind-Body Problem in Edward Tyson’s *Orang-Outang* (1699)’. *Intellectual History Review* 17: 291-304.
- Smith, J.E.H. (2009) ‘Descartes and Henry More on Living Bodies’, in V. Alexandrescu (ed), *Branching Off: the Early Moderns in Quest for the Unity of Knowledge*. Bucharest: Zeta Books, 307-332.

- Smith, J.E.H. (2010) “‘A Corporall Philosophy’”: Language and “Body-Making” in the Work of John Bulwer (1606-1656), in C.T. Wolfe and O. Gal (eds), *The Body as Object and Instrument of Knowledge: Embodied Empiricism in Early Modern Science*. Berlin: Springer, 169-183.
- Sutton, J. (1991) ‘Religion and the Failures of Determinism’, in S. Gaukroger (ed), *The Uses of Antiquity: the Scientific Revolution and the Classical Tradition*. Dordrecht: Kluwer, 25-51.
- Sutton, J. (1998) *Philosophy and Memory Traces: Descartes to Connectionism*. Cambridge: Cambridge University Press.
- Sutton, J. (2000) ‘The Body and the Brain’, in S. Gaukroger, J.A. Schuster, and J. Sutton (eds), *Descartes’ Natural Philosophy*. London: Routledge, 697-722.
- Sutton, J. (2007) ‘Spongy Brains and Material Memories’, in M. Floyd-Wilson & G. Sullivan (Eds), *Embodiment and Environment in Early Modern England*. London: Palgrave, 14-34.
- Sutton, J. (2010) ‘Carelessness and Inattention: mind-wandering and the physiology of fantasy from Locke to Hume’. In C.T. Wolfe & O. Gal (Eds), *The Body as Object and Instrument of Knowledge: Embodied Empiricism in Early Modern Europe*. Berlin: Springer, 243-263.
- Temkin, O. (1973) *Galenism: Rise and Decline of a Medical Philosophy*. Ithaca, NY: Cornell University Press.
- Thiel, U. (1998) ‘Personal Identity’, in D. Garber and M. Ayers (eds), *The Cambridge History of Seventeenth-Century Philosophy*. Cambridge: Cambridge University Press, 868-912.
- Thomson, A. (2008) *Bodies of Thought: Science, Religion, and the Soul in the Early Enlightenment*. Oxford: Oxford University Press.
- Tilmouth, C. (2005) ‘Burton’s “Turning Picture”’: Argument and Anxiety in *The Anatomy of Melancholy*. *Review of English Studies*, 56: 524-549.
- Tomaselli, S. (1984) ‘The First Person: Descartes, Locke, and Mind-Body Dualism’. *History of Science* 22: 185-205.
- Tribble, E. (2005) ‘Distributing Cognition in the Globe’. *Shakespeare Quarterly* 56, 135-155.
- Tribble, E. and Keene, N. (2010). *Cognitive Ecologies and the History of Remembering: Religion and Education in Early Modern England*. London: Palgrave.
- Uzgalis, W. (2009) ‘John Locke’. *Stanford Encyclopedia of Philosophy (Fall 2008 Edition)*, Edward N. Zalta (ed.), URL = <http://plato.stanford.edu/archives/fall2009/entries/locke/>.

- Vermeir, K. (2008) 'Imagination between Physick and Philosophy: on the Central Role of the Imagination in the Work of Henry More'. *Intellectual History Review* 18: 119-137.
- Walker, D.P. (1985) *Music, Spirit, and Language in the Renaissance*. London: Variorum Reprints.
- Wear, A. (1995) 'Medicine in Early Modern Europe, 1500-1700', in L. Conrad et al, *The Western Medical Tradition*. Cambridge: Cambridge University Press, 215-361.
- West, R.H. (1969) *The Invisible World: a Study of Pneumatology in Elizabethan Drama*. 2nd edition, New York: Octagon Books.
- Wierzbicka, A. (1992) *Semantics, Culture, and Cognition: Universal Human Concepts in Culture-Specific Configurations*. Oxford: Oxford University Press.
- Wilkes, K.V. (1984) 'Is Consciousness Important?' *British Journal for the Philosophy of Science* 35: 223-243.
- Wilkes, K.V. (1988) '--, yishi, duh, um, and consciousness', in A. Marcel and E.J. Bisiach (eds), *Consciousness in Contemporary Science*. Oxford: Clarendon Press, 16-41.
- Willis, T. (1672) *De Anima Brutorum*. London.
- Wollock, J. (2002) 'John Bulwer (1606–1656) and the significance of gesture in 17th-century theories of language and cognition'. *Gesture* 2: 227-258.
- Wright, J.P. (1991) 'Locke, Willis, and the Seventeenth-Century Epicurean Soul', in M.J. Osler (ed), *Atoms, Pneuma, and Tranquillity: Epicurean and Stoic Themes in European Thought*. Cambridge: Cambridge University Press, 239-258.
- Wright, T. (1604/ 1986) *The Passions of the Mind in General*. Urbana: University of Illinois Press.
- Yolton, J.W. (1984a) *Perceptual Acquaintance from Descartes to Reid*. Minneapolis: Minnesota University Press.
- Yolton, J.W. (1984b) *Thinking Matter: Materialism in Eighteenth-Century Britain*. Oxford: Blackwell.
- Zimmer, C. (2004) *Soul Made Flesh: the Discovery of the Brain*. New York: Free Press.