

Materialists Are Not Merchants of Vanishing

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1. Early modern critics of materialism (and of associated doctrines like determinism and mechanism) sometimes employed a transcendental argument form. If materialism were true, then some valuable feature of reality could not exist; but that feature does exist; therefore materialism is false. Depending on current context and concerns, the valuable 'X' in question might be God, the soul, hell, objective morality, free will, conscience, truth, knowledge, social order, or justice and the law: all, in the critics' eyes, obvious and unchallengeable realities which materialism would, impossibly, extinguish.¹ As David Hawkes notes in his delightfully provocative essay, it is because Hell is so manifestly real, in both the play and its world, that Faustus manifestly refutes himself in telling Mephistopheles that it is a fable. The success of such transcendental arguments relies on the truth of both their premises: Hell really must exist, and Faustus's materialism must really be incompatible with its existence. Hawkes celebrates early modern moralists who focussed on the alleged worldly and carnal roots and consequences of 'philosophical materialism', who attacked its proponents as villainous, self-interested, and depraved (pp. 7-9).²

2. The rich moral history of materialism confirms again that psychology and politics are often more entangled than they seem. In science studies, social theory, and historicist cultural criticism, we have been shown many cases in which metaphysics was not morally innocent. But relations between doctrines about what is and doctrines about what ought to be are in general not a matter of strict entailment, and such links are often tacit, hard for both actors and theorists to identify and accept. Specific views in science do not *determine* any particular normative framework, nor the reverse: Hawkes demonstrates that a materialist psychology can in distinct cultural and intellectual contexts serve quite different political models and ideals. So as Hawkes rails at the lazily 'automatic' commitment to materialism of modern critics, we might recall that in contrast early modern materialists, from Pomponazzi to Hobbes and beyond, ran considerable risks in defending views constantly identified as atheist and often caricatured.³ Despite his awareness of the context-dependence and complexity of this moral history of materialism, Hawkes aligns himself firmly with the critics of these early modern materialists. This strategy amplifies his laments and complaints at the 'sentimental' orthodoxy of our contemporary materialists, who have (he argues) entered into a disastrous alliance with capitalist economics (pp. 25-28), to the surprising extent that 'materialism, in its twenty-first-century manifestations' does in fact bear its ideological weight *intrinsically*, to the extent that it is 'not . . . compatible with anti-capitalism' but simply 'is capitalism in philosophical form' (p. 28).⁴

3. So, in the modern context, Hawkes adopts a similarly transcendental argument style, taking the soul, subjectivity, ideas, the mind, qualia, consciousness, and the self as his unchallengeable realities rather than God or Hell. On other occasions we might query the first premise of such an argument form, wondering, for example, if the reified or abstract unified category of the 'mind' is not a category that is too historically and cross-culturally labile, too genealogically suspect, to be immune to revision.⁵ But here we challenge the second premise of Hawkes' argument, that materialism is really incompatible with these realities. If early modern materialists were dubious magicians or jugglers, allegedly conjuring manifest features of experience like God or Hell out of existence, so for Hawkes

contemporary materialists are also merchants of vanishing. Because materialists, on his interpretation, are committed to denying the reality of ideas and of subjectivity, they refute themselves whenever they think, whenever their selves and their experiences fail to disappear. Whatever the wishfully progressive politics of materialism's contemporary seers, Hawkes charges, its debunking magic, in reducing 'people to the status of objects', operates only in the service of the vast capitalist machine (p. 26).

4. These are, we argue, profound misunderstandings of the nature of materialism, and of its implications for literary and cultural criticism. These errors of theory in turn drive a disastrous error of policy, by which Hawkes recommends a renewed secession of the humanities from the sciences. We agree that this is a particularly crucial period in the development of interdisciplinary work, as the collection from which Hawkes' essay is drawn attests.⁶ How will the relationship between the humanities and the sciences be imagined? At one extreme, there is the 'consilience' model that Hawkes rightly attacks, and which seems to be embraced by the editors of that volume in singling out 'biology, neurology, and evolutionary psychology' as the key 'disciplines of hard science' and in citing approvingly both neuroimaging and nativist conceptions of modularity.⁷ In some of its 'literary Darwinist' forms, that model positions humanistic inquiry as subservient to and subsumed by scientific frameworks. While we share Hawkes' dismay at such approaches, we agree with Jonathan Kramnick that they are deeply incomplete, and do not underwrite 'the most interesting work across cognitive science and literary studies in recent years'.⁸ Yet the alternative Hawkes proposes -- rejection of 'the materialist assumptions of economics and the natural sciences' (p. 25) -- is, we argue, equally problematic. It is unnecessary for cultural and literary scholars to secede from science in general just because they reasonably resist the impoverishment of certain highly visible popularizations of controversial scientific ideas. Worse, it is dangerous to do so, because refusing to engage with science bars them from participation in full and robust debates both within the cognitive sciences, and between humanities, social sciences, and cognitive sciences: this strategy thus encloses the humanities again in an idealist ghetto.

5. We agree with Hawkes that psychological phenomena have been puzzlingly marginalized in some contemporary literary criticism and early modern cultural theory: but he misidentifies what's missing, and misdiagnoses the source of the absence. We first contest Hawkes' strategic treatment of materialism as a sufficiently coherent and unified doctrine to be worth attacking, before going on to dispute and complicate his understanding of its versions. We agree with Hawkes that contemporary materialism is 'capacious' and comes in many forms, its adherents having 'broken off into clusters', and thus that it's now often not clear what a 'materialist' theory is opposing (pp. 13-14). It is then curious that Hawkes continues to treat 'materialism' as a fruitful critical target. We are not sure whether his own preferred alternative is in the tradition of the dialecticians who treat 'ideas and matter as mutually determining' (p. 10), or in that of 'an idealist historicism' (p. 23): in either case, Hawkes takes an opposition between materialism and idealism as a worthwhile starting point.

6. In contrast, we would conclude that simply labelling a position as 'materialist' is in a contemporary context to solve little: all the interesting issues depend on what form of materialism one develops and defends. Asking whether or not we should accept or reject 'materialism' *in general* might be a worthy question if we are engaged in specifically religious or metaphysical debates concerning substance dualism, but although Hawkes does refer positively to the 'non-material subject', such debates do not appear to be his immediate concern.⁹ Seeking to pick out a sufficiently coherent conception of 'materialism' to attack,

he identifies three primary varieties: object-centred criticism, eliminative and evolutionary materialism, and cognitive or informational criticism. Despite Hawkes' attempts to identify shared doctrines across these disparate views at a sufficiently broad grain of analysis, they have little in common. Hawkes' selection of varieties of materialism is not only unhelpfully homogenized, but also impoverished: he omits key versions and leaves out a significant array of plausible forms of materialism, especially ones that clearly do not share the putative common core. Not all materialisms, for example, are neurocentric, locating cognition in the brain alone. Not all reify mind or are blind to process and becoming: even apart from the array of materialist cognitive theories discussed below which treat mental life as embodied, extended, or distributed, writers closer to cultural theory have defended forms of exuberantly animate, vital, or visceral materialism.¹⁰ To focus on Hawkes' core complaint, many central varieties of materialism, in philosophy, cultural theory, and cognitive science alike, do not 'reduce ideas to matter' (p.4), deny the reality of either the mind or the subject (p. 21), or reject the causal efficacy of thoughts and feelings. We discuss these omissions first with regard to philosophy and the cognitive sciences, because Hawkes' partial slice through the contemporary theoretical landscape occludes approaches which hold greater potential interest for literary and humanities scholars.

7. Hawkes sees materialism as necessarily reductive, identifying 'materialism' in general with *reductive* materialism. But in many or most of its forms materialism is compatible with pluralism. Hawkes, correspondingly, wrongly treats any *non-reductive* view of mind or subjectivity as a non- or anti-materialist view. These are mistakes because reduction is only one possible materialist account of relations between the mental and the physical, and (in the form that Hawkes construes it) a particularly controversial account at that. Hawkes takes reduction -- for example, the reduction 'of ideas to matter' (p. 4), or of 'subjectivity to the functions of the brain' (p. 20), or of 'the human self to matter' (p. 25) -- to entail that what is reduced isn't real: as he sees it, 'despite their differences', prominent materialisms 'all believe that the human subject, mind or soul is an illusion' (p. 21). When he adds the alleged 'collusion between materialist philosophy and capitalist economics' (p. 26), we have all the ingredients for Hawkes' troubling vision of materialists as merchants of vanishing.

8. Hawkes thus conflates reduction with elimination. But this is an error. Elimination is the *failure* of reduction, not its outcome. It's because animal spirits, phlogiston, luminiferous ether, and God, despite their many putative virtues, could *not* be reduced that they were eliminated from our best understandings of the world. The difference between reduction and elimination is clear, for example, even in the work of arch-eliminativist Patricia Churchland, who argues that reduction 'does not entail that the reduced theory will somehow cease to be, or that the phenomena it describes cease to be. . .'.¹¹ In any case, it is extraordinary for Hawkes to claim that 'by the end of the twentieth century, eliminative materialism had become the dominant approach to the study of mind' (p. 11): on his picture, eliminative materialism is materialism's natural and supreme form. But eliminative materialism, although widely misunderstood, has in contrast for 40 years now elicited just the kind of revulsion and moral panic among mainstream philosophers and cognitive scientists which we find in Hawkes: it has consistently been rejected as ludicrous and absurd.¹² In fact, few actual materialist theories of mind or self in philosophy or cognitive science, let alone in the social sciences, are in practice reductionist in anything like Hawkes' eliminative sense.¹³ Certainly, some are: there are, for example, 'ruthless reductionists' in philosophy and cognitive neuroscience who claim that remembering and thinking are in fact not really psychological processes at all, but *only* neural processes.¹⁴ If Hawkes restricted his critical attention to these views, we would have no quarrel. But these views are marginal in the cognitive sciences as a whole, despite the disproportionate media attention they sometimes

get in our neurocentric age. To attack the localizationism, individualism, and (eliminative) reductionism of such views, as we along with many others would want to do, is *not* to attack materialism.

9. In the second half of the twentieth century, a swathe of tools for and forms of non-reductive materialism were developed in cognitive science and philosophy of mind. Even though we do not accept many central claims developed in this orthodox conception, its history should be better known in the contemporary interdisciplinary environment.¹⁵ Both scientists and philosophers realized that it was unnecessarily chauvinistic to *identify* mental states with the physical states of human beings' idiosyncratic biological brains, and instead sought to characterize mental states *functionally*, by reference to what they *do* and the roles they typically play within an active cognitive system.¹⁶ While the resulting 'functionalist' philosophy of cognition comes in many distinct varieties, two things about it are clear: functionalism has for some 40 years provided the dominant orthodoxy in both cognitive science and philosophy, and it is defiantly anti-reductionist. Rather than either *reducing* ideas to matter or simply *identifying* ideas and matter, functionalists insist on the reality of both ideas and matter, and seek alternative, more precise ways of characterizing the relations between them. In principle, the same mental states -- memories, feelings, beliefs, and so on -- can be realized in quite different material systems, as long as the functional relationships and roles are preserved. On different occasions, across different individuals or different species or (in general) different thinkers or cognizers, particular thoughts or emotions or memories can be *constituted by* or *realized in* or *supervene on* whatever physical stuff is so appropriately organized as to ground or permit *those* particular (psychological) functional roles to be filled.¹⁷ This is the core of non-reductive materialism. In one sense, everything in our psychology is material, for in each distinct case the mental state is realized in some physical substrate or other. But equally, the mental state is clearly not reducible to *that* material substrate, or (we might say) it retains some autonomy from that material substrate, in that it can exist in the absence of that *particular* physical implementation or realization. I can have the same thought today and next year, without my body and brain having (implausibly) to be in *exactly* the same state; and although it is in virtue of our respective physical (neural and bodily) organization that my dog and I can both feel cold, and both feel pain, those feelings are not to be *reduced* to one peculiar shared material constitution.

10. There are many open difficulties with this functionalist orthodoxy, even apart from the ongoing technical challenges in spelling out just what the notions of realization or supervenience amount to.¹⁸ One might worry, for example, that in abstracting away from the details of material realization it does not take bodies of various kinds seriously *enough*, or that it remains in most of its guises wedded to a problematic, context-free individualism in locating the relevant functional roles inside the head. But, for better or worse, functionalism remains a far more influential driving vision of the nature of mind than the eliminative reductionism on which Hawkes focuses. To put the point another way, mainstream materialisms definitely do not accept 'that only matter exists' (p. 27), but in contrast are firmly pluralist in their ontologies. The special sciences -- including the human sciences, the social sciences, and the cognitive sciences -- are unambiguously seen in these forms of materialism as having significant autonomy. The states and capacities in which they traffic, including not just abstractions like 'mind' or 'self' but also memories, affects, beliefs, imaginings, dreams, decisions, and the whole array of psychological phenomena of interest to literary, cultural, and historical theorists, are in no way illusory. Pluralism is a perfectly reasonable and widespread philosophy of science for a materialist. Even if all the things that exist supervene on or are realized in matter, the materialist can still ascribe full-blown reality and causal powers to tables and trees, tendons and toenails, tangos and

tendencies.

11. This pluralism is compatible even with the 'promiscuous realism' of John Dupré, whose distinct critique of the universalizing claims made in some forms of evolutionary psychology is rightly cited with approval by Hawkes. Dupré carefully targets only excessively reductive versions of materialism, not materialism in general: he too does not 'believe that there are, in addition to the things that physicists theorize about, immaterial minds or deities'.¹⁹ Certainly, as Dupré claims, 'there are countless other things: atoms, molecules, bacteria, elephants, people and their minds, and even populations of elephants, bridge clubs, trades unions, and cultures'. Dupré and the non-reductive materialist *agree* both that everything these things are composed of is physical, and that 'the truth about physical stuff is very far from being the truth about everything'. In a related movement, among the most influential relevant work in philosophy of science and mind over the last ten years is the 'new mechanism', a range of theories which aim to show how higher-level organized wholes (such as complex mental states) can both have *emergent* powers which are not reducible to the properties of their isolated constituent parts, *and* through their complex organization actively *constrain* the operations of those component parts.²⁰

12. Working within the broad and mainstream framework of this pluralist functionalism, in which ideas are certainly real, contemporary materialists also develop an array of diverse approaches to mind, self, subjectivity, agency, and autonomy. There is nothing in philosophical cognitivism, or in the work of the literary and cultural critics most attuned to it, that must be 'committed to the reduction of subjectivity to the functions of the brain' (p. 20), or to treating it as an illusion or an epiphenomenon (p. 21). One might have distinct historicist, anti-essentialist, or anti-individualist reasons to be doubtful about the integrity and utility of some of these terms and categories in cognitive science, evolutionary psychology, or humanist scholarship alike: but these are nothing to do with materialism, which on its own is perfectly compatible with the 'dialectical' view which Hawkes favours, that ideas and matter are 'mutually determining' (p. 10). This is no particular victory for materialism, just another sign that it is not the key issue.

13. The varieties of contemporary materialism are so diverse, indeed, that they encompass not just Hawkes' eliminativists, nativists, and localizationist (mis-)interpretations of neuroimaging results, but also many distinctive positions on which the relevant bits of matter are not restricted to the brain. On the view we have been developing over some years, for example, what's important about mental processes -- remembering, decision-making, hoping, planning, communicating, and so on -- is not so much that they are realized in or carried by matter, as that the relevant parts of the material world are bodily, environmental, technological, and social as well as neural.²¹ Working from traditions in which cognition is seen as (material but also) embodied, situated, and extended or distributed, we argue that changing social, cultural, and historical artifacts and practices are not external supplements to the true mind inside the individual, but rather partly *constitute* mental life.²² This is still a materialist theory: it sees an understanding of the linked properties and coupled dynamics of many different interacting material systems in brain, body, and world as the key to understanding psychological processes. But on these views mind is neither identified with nor reduced to brain alone: the isolated human brain, in particular, which develops in such cognitive interdependence with other people and the other parts of a complex cognitive ecology, is not the sole basis of our psychological capacities.²³ From this point of view, a bare commitment to materialism is a thin and insufficiently embodied veneer which needs to be supplemented with concomitant attention to specific bodily, interpersonal, and historical dimensions of animate agency and self.²⁴ Methodologically, these distributed cognition and

cognitive ecology frameworks in no way exhibit the 'colonization of the human by the natural sciences' to which Hawkes attributes the dominance of materialism (p. 21): instead we have argued for a mutual coevolution of theoretical approaches, in that the in-principle acceptance within these cognitive theories of the partly historical and cultural nature of the mind needs to be tested against and put into scholarly practice in detailed case studies of historical cognitive science.²⁵

14. We agree with Hawkes that in some literary and cultural-historical contexts, historicist criticism has been more influential than materialism in driving anti-essentialist critical movements, successfully 'demonstrating the contingency of culture' (pp. 22-23). There is indeed ample work to do in continuing to contend 'that there is no fixed human nature or natural mode of social organization', and this is to be done in part by 'locating the objects of study within their contingent historical circumstances' (p. 23). Yet matter is the realm of change, of dynamics and movement. We reject Hawkes' suggestion that such critical political projects can be motivated by 'an idealist historicism' on its own, for two reasons -- one normative and one descriptive. Firstly, again, this is to hand science over entirely to capitalism, or at least to think wrongly that universalizing essentialist science is the only kind of science there is. It is to deny the humanist the chance to work critically with the vast array of alternative options within the sciences which do not fit or collude so neatly with capitalism, and which themselves reject the idea of a fixed human nature from *within*. Far from materialism being incompatible with anti-capitalist historicism, we argue that the power of historicism, and of its debunking claims about contingency of alleged universals, can only be enhanced and magnified if it is associated with the right kind of materialist framework. Secondly, we suggest that historicism *without* materialism too easily leaves us mute about the ordinary mental life of embodied human agents. Certainly, the mind has gone missing in some strands of criticism, with the complex experiential realm of thinking, feeling, remembering, and decision-making occasionally jettisoned entirely in favour of reference to the constitution of an illusory subjectivity by external tools of ideological domination.²⁶ But it is misdiagnosis to ascribe this to a generic materialist reduction of ideas to matter: rather, in overly hasty anti-essentialism, historicists who lack a cognitive theory may be tempted to neglect intelligent activities just because they wrongly think that the kind of 'autonomous non-material subject' which Hawkes appears to favour (p.3) is required for there to be ideas (or beliefs, hopes, memories, and so on). The means by which this unproductive impasse can be overcome, we suggest, is to engage fully with phenomenology-friendly cognitive theories and embodied materialisms.²⁷

15. Our own deviant brand of materialism, the idea of mental activities as essentially distributed across an extended cognitive ecology, clearly has particular affinities with the object-centred criticism for which Hawkes reserves particular skepticism. Indeed, the link between 'thing theory' and materialist cognitive theory is considerably more explicit in our work than in that of the critics considered by Hawkes such as Stallybrass, Korda, or Harris.²⁸ So we conclude by briefly responding to Hawkes' specific complaints about the 'quasi-magical attribution of agency to objects' and the 'category confusion between subject and object' (pp. 16-17) in recent object-oriented criticism. Critics of distributed cognition in philosophy of mind, likewise, characterize it as the view that artifacts -- notebooks, say, or pencils -- 'are' memory or 'have' minds on their own: one mocks the apparent implication 'that the black tie I wear at the funeral [is] doing my grieving for me'.²⁹ But again, this is a mistaken characterization of the materialist, in this case the object-centred material culture theorist, as one who inevitably makes the subject or the agent disappear.³⁰ We are not leveling all distinctions, perversely effacing politically indispensable lines between people and things. As Latour argues, 'in abandoning dualism our intent is not to throw everything

into the same pot, to efface the distinct features of the various parts within the collective. We want analytical clarity, too, but following different lines than the one drawn for the polemical tug of war between subjects and objects'.³¹ We are thus not arguing, as Hawkes suspects, that 'things abandon their objective nature altogether, and actually become subjective agents'.³² Where we do query pre-theoretic distinctions between inside and outside, this is not in service of a flattening homogeneity, by which everything can be treated alike simply because everything is ultimately material. Rather, in suggesting that the concept of agency is not transparent or simple, and that agency can take many forms, we seek to exchange distinctions for networks, reinstating both history and heterogeneity.

16. So the aim of object-centred criticism and of theories of distributed cognition alike is to point to richer, denser forms of interdependence between and across heterogeneous resources -- brains, bodies, and worlds -- in the performance of flexible, more-or-less intelligent activity. This is not to encourage an antiquarian or fetishistically *exclusive* focus on alluring, single material objects, which might drain them of their political meaning.³³ Rather, there are historically and culturally specific patterns of cooperation and coordination, and of failures of coordination, between mindful bodies, cognitive artifacts, and social institutions. So when certain things -- clothes, say, or table-books, or money -- do have a cognitive life, this does not arise by sorcery, in isolation, through the bypassing or elimination of human activity, as the early modern critics of idolatry feared. Where Hawkes celebrates 'the moralistic horror with which such agency [of objects] was generally portrayed in early modern Europe', we suggest that rich and historicized forms of materialism can precisely attend to distinctive and tangled forms of coupling between psychological, physical, and social process. This requires understanding the unique properties and formats of the peculiar kinds of things that people have used to think or remember with, all with their own histories and dynamics, changing at a range of different timescales. But of course it also requires understanding historically and culturally distinctive patterns of use, in multiply-embedded, situated routines and practices. Since materialists are not merchants of vanishing, who would extinguish all that animated, passionate, quizzical, embodied human agents hold dear, they must be humanists and cognitive theorists, neurophilosophers and cultural critics, historicists and ecologists all at once.³⁴

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Notes

¹ John Sutton, 'Religion and the Failures of Determinism', in S. Gaukroger (ed), *The Uses of*

Antiquity: the scientific revolution and the classical tradition (Dordrecht: Kluwer, 1991), pp. 25-51, especially pp. 37-43 on Webster, Mersenne, and Cudworth.

² Parenthetical page references are to the pdf version of 'Against Materialism' at <http://emc.eserver.org/1-9/Hawkes.pdf>.

³ Samuel I. Mintz, *The Hunting of Leviathan* (Cambridge: Cambridge University Press, 1962); Steven Shapin & Simon Schaffer, *Leviathan and the Air-Pump: Hobbes, Boyle, and the experimental life* (Princeton, NJ: Princeton University Press, 1985); Stephen Gaukroger, *The Emergence of a Scientific Culture: Science and the Shaping of Modernity, 1210-1685* (Oxford: Oxford University Press, 2006); Lorenzo Casini, 'The Renaissance Debate on the Immortality of the Soul: Pietro Pomponazzi and the plurality of substantial forms', in P.J.J.M. Bakker & J.M.M.H. Thijssen (eds), *Mind, Cognition and Representation: the tradition of commentaries on Aristotle's De Anima* (Aldershot: Ashgate, 2007), pp. 127-150.

⁴ Although Hawkes cites Douglas Bruster's essay 'The New Materialism in Early Modern Studies' approvingly, his unremittingly negative take on early modern materialisms here contrasts sharply with Bruster's hope that recent object-centred criticism can 'begin taking sixteenth- and seventeenth-century materialist thought seriously', forcing us to admit that many early modern authors 'theorized objects, and people's relationship to them, in quite complicated and compelling ways': Bruster, *Shakespeare and the Question of Culture* (London: Palgrave Macmillan, 2003), p. 204. Early modern materialist and mechanistic theories of human nature, we would argue, were by no means all flatly reductionist. In this short response, we focus more on theoretical than historical disagreements with Hawkes. But see John Sutton, *Philosophy and Memory Traces: Descartes to connectionism* (Cambridge: Cambridge University Press, 1998); Evelyn B. Tribble & Nicholas Keene, *Cognitive Ecologies and the History of Remembering: religion and education in early modern England* (London: Palgrave, 2011).

⁵ Anna Wierzbicka, *Semantics, Culture, and Cognition* (Oxford: Oxford University Press, 1992); Angeline S. Lillard, 'Ethnopsychologies: cultural variations in theories of mind', *Psychological Bulletin* 123 (1998), pp. 3-32; Paul S. MacDonald, *History of the Concept of Mind: speculations about soul, mind and spirit from Homer to Hume* (Aldershot: Ashgate, 2003).

⁶ Paul Cefalu & Bryan Reynolds (eds), *The Return of Theory in Early Modern English Studies: tarrying with the subjunctive* (London: Palgrave, 2011).

⁷ Cefalu & Reynolds, 'Tarrying with the Subjunctive: an introduction', 1-17, especially p.2 on neuroimaging as 'groundbreaking' cause of 'radically new' approaches to subjectivity, p. 4 and p. 7 on consilience and 'the hard science of cognition', and pp. 5-6 on massive modularity and the nativist critique of Geertz.

⁸ Jonathan Kramnick, 'Against Literary Darwinism', *Critical Inquiry* 37 (2011), 315-347, p.346 and *passim*.

⁹ Hawkes' essay does, however, raise intriguing questions about the history of dualism which we cannot address here. Among relevant treatments are Ruth Padel, *In and Out of the Mind* (Princeton: Princeton University Press, 1992); Timothy J. Reiss, *Mirages of the Self: patterns of personhood in ancient and early modern Europe* (Stanford: Stanford University Press, 2002); G.S. Rousseau (ed), *The Languages of Psyche: mind and body in*

Enlightenment thought (Berkeley: University of California Press, 1990); Sylvana Tomaselli, 'The First Person: Descartes, Locke and mind-body dualism', *History of Science* 22 (1984), pp. 185-205.

[10](#) Merlin Donald, *Origins of the Modern Mind* (Cambridge, MA: Harvard University Press, 1990); Daniel Tiffany, *Toy Medium: materialism and modern lyric* (Berkeley: University of California Press, 2000); William E. Connolly, *Neuropolitics: thinking, culture, speed* (University of Minnesota Press, 2002); Jane Bennett, *Vibrant Matter: a political ecology of things* (Duke University Press, 2009); Charles T. Wolfe, 'Forms of Materialist Embodiment', in M. Landers & B. Muñoz (eds), *Anatomy and the Organization of Knowledge, 1500-1850* (London: Pickering and Chatto, forthcoming 2012).

[11](#) Patricia S. Churchland, *Neurophilosophy* (Cambridge, MA: MIT Press, 1986), p. 296, arguing against the pervasive misgivings, which 'are really just bugbears', that what is successfully reduced and understood will vanish 'in disgrace': such misgivings are just those expressed by Hawkes. Compare Churchland, 'Psychology and the Study of the Mind-Brain', *Neuroscience* 13 (1984), p. 1402: 'On a co-evolutionary conception of the development of an integrated theory of the mind-brain, theories of all levels of organization are essential, and hence both psychology and neuroscience are part of a unified endeavor. A reduction is achieved when each level of organization is explained in terms of the level below it, but notice that this does not entail that theories of the higher levels are eliminated or are useless or wither away etc'. Many thanks to Kellie Williamson for picking out these quotations.

[12](#) In fact the unfortunately-named 'eliminative' aspect of the Churchlands' view involves denying only a mistakenly linguistic and classical model of belief (which they found both in mainstream cognitive science before the 1980s, and -- more controversially -- in certain strands of common-sense psychology): it does not eliminate ideas or consciousness or sensations, or even self. The Churchlands certainly accept a whole array of sensory qualities, and the causal efficacy of psychological states, which they do not see as analogous to 'elves and fairies' (Hawkes, p.11). See especially Patricia S. Churchland, 'Replies to Commentaries on *Neurophilosophy*', *Inquiry* 29 (1986), pp. 241-272; Paul M. Churchland, 'The Evolving Fortunes of Eliminative Materialism', in B.P. McLaughlin & J.D. Cohen (eds), *Contemporary Debates in Philosophy of Mind* (Oxford: Blackwell, 2007); also John Sutton, 'The Churchlands' Neuron Doctrine: both cognitive and reductionist', *Behavioral and Brain Sciences* 22 (1999), pp. 850-51; Sutton, 'No More Folk Tales', *Times Literary Supplement* 5029, 20 August 1999, p. 26 (<<http://www.johnsutton.net/Churchlands.htm>>). Finally, on the specific charge of self-refutation, see Patricia S. Churchland, 'Is Determinism Self-Refuting?', *Mind* 90 (1981), pp. 99-101, and William Ramsey, 'Eliminative Materialism', *The Stanford Encyclopedia of Philosophy* (Spring 2011 Edition), E.N. Zalta (ed.), URL = <<http://plato.stanford.edu/archives/spr2011/entries/materialism-eliminative/>>.

[13](#) Compare Dan Sperber, *Explaining Culture: a naturalistic approach* (Oxford: Blackwell, 1996), especially p.vi, pp. 59-60 on reductionism as a dream or a 'child in limbo' rather than a dire spectre.

[14](#) John Bickle, *Philosophy and Neuroscience: a ruthlessly reductive account* (Dordrecht: Kluwer, 2003). Bickle's position is closer to a genuine elimination of ideas, mind, subjectivity, and consciousness than the Churchlands' view has ever been. But his views are even less widely accepted than theirs in philosophy and cognitive science: for one balanced assessment see William Bechtel, 'Molecules, Systems, and Behavior: another view of memory consolidation', in J. Bickle (ed), *Oxford Handbook of Philosophy and Neuroscience*

(Oxford: Oxford University Press, 2009), pp. 13-40. Some of the allegedly 'hard science' of neurocentric and evolutionary-psychological consilience theorists does also invoke such 'ruthless' forms of reduction, though often at a more rhetorical and less detailed level than Bickle.

[15](#) For overviews, see for example Zenon Pylyshyn, *Computation and Cognition* (Cambridge, MA: MIT Press, 1984); Andy Clark, *Mindware: an introduction to the philosophy of cognitive science* (Oxford: Oxford University Press, 2001). For a wonderfully detailed historical treatment see Margaret Boden, *Mind as Machine: a history of cognitive science* (2 volumes, Oxford: Oxford University Press, 2006). For the best motivating account of the associated representational theory of mind, see Jerry A. Fodor, *Psychosemantics* (Cambridge, MA: MIT Press, 1987), preface and ch. 1.

[16](#) Janet Levin, 'Functionalism,' *The Stanford Encyclopedia of Philosophy* (Summer 2010 Edition), E.N. Zalta (ed.), URL = <<http://plato.stanford.edu/archives/sum2010/entries/functionalism/>>. Key early papers include the works by Putnam, Lewis, and Block found in Levin's bibliography. Although the claim is of course historically controversial, many philosophers have argued that Aristotle's hylomorphic account of the relation between soul and body is a recognizable form of functionalism: see Christopher Shields, 'The First Functionalist', in J.C. Smith (ed), *Historical Foundations of Cognitive Science* (Dordrecht: Kluwer, 1990), pp. 19-33.

[17](#) Ryan Wasserman (2009), 'Material Constitution' *The Stanford Encyclopedia of Philosophy* (Spring 2009 Edition), E.N. Zalta (ed.), URL = <<http://plato.stanford.edu/archives/spr2009/entries/material-constitution/>>; Robert A. Wilson & Carl F. Craver (2007), 'Realization', in P. Thagard (ed), *Handbook of the Philosophy of Psychology and Cognitive Science*. Elsevier, pp. 81-107; Brian McLaughlin & Karen Bennett (2010), 'Supervenience', *The Stanford Encyclopedia of Philosophy* (Summer 2010 Edition), E.N. Zalta (ed.), URL = <<http://plato.stanford.edu/archives/sum2010/entries/supervenience/>>.

[18](#) Daniel Stoljar, *Physicalism* (London: Routledge, 2010).

[19](#) John Dupré, *Human Nature and the Limits of Science* (Oxford: Oxford University Press, 2002), p. 5.

[20](#) Carl Craver, *Explaining the Brain: mechanisms and the mosaic unity of neuroscience* (Oxford: Oxford University Press, 2007); William Bechtel, *Mental Mechanisms: philosophical perspectives on cognitive neuroscience* (London: Routledge, 2008). For different arguments that reductionism, properly understood, is compatible with pluralism, see Daniel Steel, 'Can a Reductionist be a Pluralist?', *Biology and Philosophy* 19 (2004), pp. 55-73.

[21](#) John Sutton, 'Porous Memory and the Cognitive Life of Things', in D. Tofts, A. Cavallero, & A. Jonson (eds), *Prefiguring Cyberculture: an intellectual history* (Cambridge, MA & Sydney: MIT Press & Power Publications, 2002), pp. 130-141; Evelyn B. Tribble, 'Distributing Cognition in the Globe', *Shakespeare Quarterly* 56 (2005), pp. 135-155.

[22](#) Jean Lave, *Cognition in Practice* (Cambridge: Cambridge University Press, 1988); Edwin Hutchins, *Cognition in the Wild* (Cambridge, MA: MIT Press, 1995); Bruno Latour, 'Cogito ergo sumus! Or, psychology swept inside out by the fresh air of the upper deck: a review of

Ed Hutchins' *Cognition in the Wild*, *Mind, Culture, and Activity* 3 (1996): pp. 54-63; Andy Clark, *Being There: putting brain, body, and world together again* (Cambridge, MA: MIT Press, 1997), and Clark, *Supersizing the Mind* (Oxford: Oxford University Press, 2008); Mark Rowlands, *The Body in Mind: understanding cognitive processes* (Cambridge: Cambridge University Press, 1999).

[23](#) Edwin Hutchins, 'Cognitive Ecology', *Topics in Cognitive Science* 2 (2010), pp. 705-15; Evelyn B. Tribble & John Sutton, 'Cognitive Ecology as a Framework for Shakespearean Studies', *Shakespeare Studies* 39 (2011), pp. 94-103.

[24](#) Elizabeth A. Behnke, 'Ghost Gestures: phenomenological investigations of bodily micromovements and their intercorporeal implications', *Human Studies* 20 (1997), pp. 181-201; Maxine Sheets-Johnstone, *The Corporeal Turn* (Imprint Academic, 2009); S. Gallagher & D. Schmicking (eds), *Handbook of Phenomenology and Cognitive Science* (Berlin: Springer, 2010); Greg Downey, 'Practice without Theory: a neuroanthropological perspective on embodied learning', *Journal of the Royal Anthropological Institute* 16 (2010), S22-S40; Edwin Hutchins, 'Imagining the Cognitive Life of Things', in L. Malafouris & C. Renfrew (eds), *The Cognitive Life of Things* (Cambridge: McDonald Institute for Archaeological Research, 2010), pp. 91-101.

[25](#) John Sutton, 'Exograms and Interdisciplinarity: history, the extended mind, and the civilizing process', in R. Menary (ed), *The Extended Mind* (Cambridge, MA: MIT Press, 2010), pp. 189-225; Evelyn B. Tribble, *Cognition in the Globe: attention and memory in Shakespeare's theatre* (New York: Palgrave Macmillan, 2011).

[26](#) See Tribble, *Cognition in the Globe*, pp. 15-17.

[27](#) So, with the key proviso that we thus have to work hard to find the right variety of cognitive theory, we agree with Felipe Fernández-Armesto that 'cognitive scientists are doing startling work on memory and imagination, which historians need to take on board if they want to think about their subject with the freedom that mastery of relevant knowledge confers': 'Urania's Lessons for Clio', *Times Higher Education*, 17 February 2011.

[28](#) See especially Jonathan Gil Harris, *Untimely Matter in the Time of Shakespeare* (Philadelphia: University of Pennsylvania Press, 2009); also Peter Stallybrass, 'Worn Worlds: clothes, mourning, and the life of things', *Yale Review* 81 (1993), pp. 35-50; Ann Rosalind Jones & Peter Stallybrass, *Renaissance Clothing and the Materials of Memory* (Cambridge: Cambridge University Press, 2000); Stallybrass, Roger Chartier, J. Franklin Mowery, & Heather Wolfe, 'Hamlet's Tables and the Technologies of Writing in Renaissance England', *Shakespeare Quarterly* 55 (2004), pp. 379-419. We have attempted to integrate the history of material culture and object-centred criticism with distributed cognitive theory in John Sutton, 'Spongy Brains and Material Memories', in M. Floyd-Wilson & G. Sullivan (eds), *Environment and Embodiment in Early Modern England* (London: Palgrave, 2007), pp. 14-34; Tribble & Keene, *Cognitive Ecologies and the History of Remembering*. As Hawkes notes, critics like Harris draw more directly on actor-network theory and recent French materialisms than on the post-functionalist philosophy we have discussed in this essay. But recent work on distributed cognition cross-classifies and integrates these traditions: see Latour, '*Cogito ergo sumus!*'; Ronald L. Giere & Barton Moffatt, 'Distributed Cognition: where the cognitive and the social merge', *Social Studies of Science* 33 (2003), pp. 1-10; Andreas Røepstorff, 'Things to Think With: words and objects as material symbols', *Philosophical Transactions of the Royal Society B* 363 (2008), pp.

2049-54; John Sutton, 'Material Agency, Skills, and History: distributed cognition and the archaeology of memory', in L. Malafouris & C. Knappett (eds), *Material Agency: towards a non-anthropocentric approach* (Berlin: Springer, 2008), pp. 37-55.

[29](#) Roy Harris, 'Integrationism, Language, Mind and World', *Language Sciences* 26 (2004), pp. 727-39, at p. 729. For an example of the more general critique of distributed cognition and the extended mind, see Fred Adams & Ken Aizawa, *The Bounds of Cognition* (Oxford: Blackwell, 2009).

[30](#) For replies to the contemporary critics see for example John Sutton, 'Remembering', in P. Robbins & M. Aydede (eds), *The Cambridge Handbook of Situated Cognition* (Cambridge: Cambridge University Press, 2009), pp. 217-35; Sutton, 'Material Agency, Skills, and History'; Sutton, 'Exograms and Interdisciplinarity'; the essays by Andy Clark and Richard Menary in Menary (ed), *The Extended Mind*; and Mark Rowlands, *The New Science of the Mind: from extended mind to embodied phenomenology* (Cambridge, MA: MIT Press, 2010).

[31](#) Bruno Latour, 'A Collective of Humans and Nonhumans', in *Pandora's Hope: essays on the reality of science studies* (Cambridge, MA: Harvard University Press, 1999), pp. 174-215, at pp. 193-94. Compare John Haugeland, 'Mind Embodied and Embedded', in *Having thought: essays in the metaphysics of mind* (Cambridge, MA: Harvard University Press, 1998), pp. 207-37, especially pp. 228-30.

[32](#) David Hawkes, 'Materialism and Reification in Renaissance Studies', *Journal for Early Modern Cultural Studies* 4 (2004), pp. 114-129, discussing the work of Harris and Korda at p. 118. This trenchant review exhibits the same mistaken assumption that materialists must think that 'the realm of ideas is a vaguely pernicious delusion' (p. 115). Hawkes' critique of both contemporary and early modern ideas about the agency of objects can be usefully compared with the attack by Kerwin Lee Klein on the idea of memories existing outside the individual: Klein, 'On the Emergence of *Memory* in Historical Discourse', *Representations* 69 (2000), pp. 127-150.

[33](#) Evelyn Gajowski, 'Beyond Historicism: presentism, subjectivity, politics', *Literature Compass* 7/8 (2010), pp. 674-91, at p. 681, citing Hugh Grady.

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