

The Materiality of Research: 'Textual Autopoiesis: Extending Minds and Selves' by Miranda Anderson

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In this feature essay, **Miranda Anderson** reflects on how notions of the mind and the self, and the key role that embodiment and environment play in constituting them, vary across disciplinary and historical spans. Through a discussion of her past and present research projects, [The Renaissance Extended Mind](#) and [A History of Distributed Cognition](#), she examines the ethical dimensions of our extended selves and explores literary language as a catalyst for 'perceptual flights into and beyond the usual constraints of our own imaginations'.

This essay is part of a series examining the material cultures of academic research, reading and writing. If you would like to contribute to the series, please contact the Managing Editor of LSE Review of Books, Dr Rosemary Deller, at lsereviewofbooks@lse.ac.uk.

Textual Autopoiesis: Extending Minds and Selves

'A scholar is just a library's way of making another library', writes Daniel Dennett, as he sets about following the library's directions by producing another book. This turning of agency on its head may seem a light-hearted jest, but it gestures towards the extent to which we are all caught up in processes in the world, which, in the case of humans, includes language, society and culture. Postmodern accounts of language, such as Jacques Lacan's, go even further, putting the materiality of the world they conceptualise in question: 'It is the world of words which creates the world of things [...] Man speaks therefore, but it is because the symbol has made him man.' Human processors become the human processed.

Yet, a positive spin can be put on the extent to which we are shaped by resources in the world, through a more encompassing approach that allows for the fact that both general and specific material and sociocultural factors play a role. This perspective suggests that materiality, rather than being elided by language and epistemological structures, grounds them. In the words of Richard Gregory, language is a special kind of 'mind tool' whereby we can newly perceive and conceive the world around us and build from basic to more abstract ideas. Several decades ago [George Lakoff and Mark Johnson](#) first claimed that even our everyday language is metaphorical and grounded in physical experience in the world. For instance, that the description of a person as 'warm' is positive relates to our human physiological preference for this temperature range.

While initial discussions on the embodied nature of language tended to be overly universalising, these have developed over time with more attention now being given to the differences that may occur due to a spectrum of physical, linguistic and cultural variations. For example, [Daniel Casasanto](#) has carried out research that reveals that right-handed people unknowingly tend to draw animals given a positive valence on the right and left-handers on the left. But put an oven glove on the right hand of the right-hander, temporarily making their left hand dominate, and their moral preference switches to the left. Even seemingly abstract concepts, such as morality, are grounded in a combination of general and specific physical, linguistic and sociocultural factors.

The emergence of research on the predictive nature of the mind shows that much of how we perceive and conceive



Giuseppe Arcimboldo, The Librarian (1570)
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of the world is due to top-down hypotheses. This may seem to move us back into territory that emphasises the partialness and illusory nature of our grasp of the world, evident throughout history in notions such as brain-in-a-vat analogies, the Cartesian cogito, Plato's cave or the Sanskrit notion that we view the world only through a veil of illusion. Yet these top-down hypotheses are formed by our interactions with the array of physical regularities in the world as errors in our predictions cause the modification of hypotheses by incoming sensory data. Therefore, although our access to the world is not reliable or direct, the world nonetheless fundamentally shapes our minds. [Jakob Hohwy](#) describes this in terms that are just a step or two away from postmodern anxieties:

'Our experience of the world and our interactions with it, as well as our experience of ourselves and our actions, is both robustly anchored in the world and precariously hidden behind the veil of sensory input. We are but cogs in a causally structured world, eddies in the flow of information.'

Andy Clark goes for the more positive spin, seeing it as a means of explaining how intelligence can emerge from mere matter, allowing 'mobile, body-based brain-meat, immersed in the human social and environmental swirl, to know and engage in its world'. That we use some of the same predictive mechanisms to perceive and act in the world and to *imagine* perceiving and acting in the world also indicates why language, and particularly the vivid and detailed kind that is found in literary texts, can have such a powerful hold on minds. It is through our grounding in the material world, then, that our thoughts can be creatures of infinite span, as John Donne describes it, with the rich, detailed and kinesic language of literary works providing catalytic structures to propel imaginative flights.



Image Credit: North Beach, San Francisco ([torbakhopper](#))

Such anxieties and celebrations over whether and to what extent we are materially anchored in the world are not new. As with concerns that our sense of access to the world is illusory, these are simply the latest expressions of the notion that our minds are neither wholly brain-based nor immaterial entities. It was while reading William Shakespeare's works over a decade ago at the same time as reading ideas in the philosophy of mind that I first realised the parallels with Renaissance notions of the role that embodiment and environment play in enabling and even constituting minds and selves. Research on this (yet again) became a book, [The Renaissance Extended Mind](#), which explores some of these parallels (as well as the divergences) with current notions.

In the Renaissance, the body was believed to be composed of four humours that relate to the four elements of which the world is composed; variations in the balance of these humours through our interactions with the world alter one's character and disposition. A particularly fashionable humoral imbalance at the time was melancholy, caused by an overabundance of black bile. Jaques in Shakespeare's play *As You Like It* coolly describes his own particular case:

it is a melancholy of mine own, compounded of many simples, extracted from many objects, and, indeed, the sundry contemplation of my travels, which, by often rumination, wraps me in a most humorous sadness. (4.1.10-18)

Jaques claims for himself a melancholy which is uniquely composed from his environment and experiences, which then in turn fashions, informs and envelops his current phenomenological experience, mediating his self-knowledge and his knowledge of the world in a similar two-way feedback loop to distributed cognitive accounts, albeit expressed in terms of the belief structures of the time.

Nor was human constitution through external resources believed to be limited to the biological domain. As with current theories, tools and sociocultural resources, including language, were understood to similarly extend the mind and self into the world. For example, Shakespeare implores the young man in *Sonnet 77* that he write down the thoughts his leaky memory cannot contain in a book, for as he becomes reacquainted with them, this will profit both himself and the book in a circular process. This notion – what I call textual or literary autopoiesis (self-creation) – pervades Renaissance culture. For instance, Michel de Montaigne describes that he himself comes into being as he composes his book: there is a two-way dynamic between the writer and the written.

Our access today to these distant minds is another kind of way in which humans are able to extend our minds beyond our immediate environment, and one on which Francis Bacon wrote:

'For I hold that conjunction of minds and studies has a greater part in friendships than civil ties and offices of occasion [...] So I seem to have my conversation among the ancients more than among those with whom I live. And why should I not likewise converse rather with the absent than the present, and make my friendships by choice and election, rather than suffer them, as the manner is, to be settled by accident?'

Through writing we can mark features of salience in the world and in ourselves, as has happened with my writing this essay. Through reading, we can shift our perception of salience and of the affordances the world offers for action, as may (or may not) have happened while you were reading this essay. Literary works, particularly through their consciously-crafted imagery, provide especially catalytic means for perceptual flights into and beyond the usual constraints of our own imaginations.

The history of the book is an area of study that has long been keen to emphasise the cognitive repercussions of changes from orality to literacy, and from printing to digital production methods. Our move into the digital realm, however, tends to be held up as offering a new form of extendability that is fundamentally immaterial: with the cloud, for example, as a repository for our media-constructed selves. A useful counterpoint to this is Louis Henderson's 2014 film [All that is Solid](#), which exposes the materiality of digital technology by showing 'reverse neo-colonial mining' as old computers, shipped *en masse* to a West African wasteland, are burned to re-extract the precious minerals. The word digital itself comes from the word digit, of which we have five on our hands, as calculus derives from the word for pebble.

Acknowledgement of materiality can draw attention to the ethical dimensions of our extended minds and selves. N. Katherine Hayles, in analysing the proliferation of computational codes and digital media, reminds us that: "What

we make” and “what (we think) we are” coevolve together; emergence can operate as an ethical dynamic as well as a technological one.’ So while the current project I work on, [A History of Distributed Cognition](#), aims to explore the ways in which notions of distributed cognition are expressed (or suppressed) from the classical period to the mid-twentieth century, these notions of the significance of our materiality are ones that we still need to be reminded of today. Awareness of historical models also makes us aware of constraints in current ones. For example, while contemporary philosophical models tend to begin with the individual as the default, in earlier periods the coupled or group mind often took the dominant role. As John Donne describes: ‘All mankind is of one Author, and is one volume.’ The extent of our grounding in the material world, our textual extendability and our human interdependence implies the need to reconsider the basis of accepted beliefs, laws and institutions that structure our world. As Andy Clark describes: ‘human thought and reason is born out of these looping interactions between material brains, material bodies, and complex cultural and technological environments. We create these supportive environments, but they create us too.’

Miranda Anderson is the initiator of, and a research fellow on, the AHRC-funded History of Distributed Cognition Project, which is based at the University of Edinburgh. This project expands on research completed during her Leverhulme Early Career Fellowship which explores parallels (and contrasts) between recent philosophical theories on the extended mind and analogous ideas in literary, philosophical, and scientific texts circulating between the fifteenth and early-seventeenth century. A number of papers on this research have been published or are forthcoming and her book *The Renaissance Extended Mind* was published by Palgrave Macmillan’s New Directions in Philosophy and Cognitive Science series in July 2015. In general, she is interested in exploring notions of the mind and self across disciplinary and historical spans and can be contacted at: miranda.anderson@ed.ac.uk.

This article gives the views of the author, and not the position of the LSE Review of Books blog as an entity, or of the London School of Economics.

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