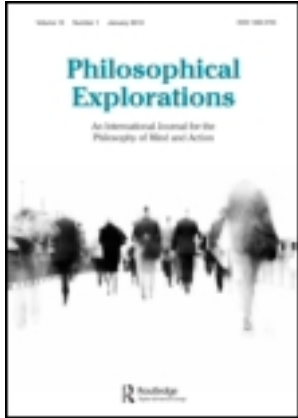


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Extended cognition and epistemology

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Introduction

Extended cognition and epistemology

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According to the thesis of extended cognition, cognitive processes do not need to be fully located inside the skin of the cognizing agent. Humans routinely engage their wider artificial environment to extend the capacities of their naked brain. They often rely extensively on external aids (notebooks, watches, and smartphones) and the latter may (under certain conditions) become a proper part of the cognizing mind.

The thesis of extended cognition has been influential in the philosophy of mind, cognitive science, linguistics, informatics, and ethics, but, surprisingly, not in contemporary epistemology. The discipline concerned with one of the most remarkable products of human cognition – viz., knowledge – has largely ignored the suggestion that its main object of study might be produced by cognitive processes outside the human skin. The purpose of this volume is therefore to examine the ramifications of extended cognition for epistemology – which, as it turns out, are quite profound.

The authors of the first five articles in the volume – Ken Aizawa, Fred Adams, Adam Green, Michael Kirchhoff & Will Newsome, and Tom Roberts – are all concerned principally with the relationship between extended cognition and contemporary virtue/credit theories of knowledge.

Ken Aizawa, in his paper ‘Distinguishing virtue epistemology and extended cognition’, engages with Pritchard’s (2010) suggestion that there is a ‘snug fit’ between the ability condition in virtue epistemology and extended cognition. Regarding the famous ‘Otto’ case put forward by Clark and Chalmers (1998), for instance, Pritchard argues that Otto’s systematic use and maintenance of his notebook represents a great deal of epistemic virtue on his part; in light of that, putative cases of extended cognition do not seem to threaten the intuitive link between ability/virtue and knowledge. Aizawa, now, offers two lines of thought to motivate the charge that Pritchard overestimates the fit between virtue epistemology and extended cognition: (i) two agents may be in the same epistemic situation, yet differ in the extendedness of their cognition, a fact which shows that epistemic matters are orthogonal to matters of the realization base of cognitive processes; (ii) the particular formulation of extended cognition Pritchard homes in on (namely that offered by Clark and Chalmers 1998) gives a misleading impression of the affinity between extended cognition and virtue epistemology.

Fred Adams argues in his article, ‘Extended cognition meets epistemology’, that extended cognition poses a problem for certain theories of knowledge (namely credit/

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ability theories of knowledge), but not others (namely tracking theories). In particular, Adams believes that to be able to properly accommodate cases of extended cognition, the virtue-theoretic epistemologies offered by Greco (2010) and Pritchard (2010) need to weaken the ability condition to the extent that it threatens to become vacuous. He further argues, in contrast, that tracking views – e.g. those put forward by Dretske (1971) and Nozick (1981) – are capable of properly diagnosing scenarios such as the Otto case and the ‘Sissi’ case put forward by Vaesen (2011).

Adam Green does essentially explain two things in his paper, ‘Extending the credit theory of knowledge’. First, he criticizes Goldberg’s (2010) extended process reliabilism, according to which, among other things, belief-forming processes may be extended interpersonally. Green’s charge is that Goldberg cannot live up to his ambition of rejecting the extendedness model for beliefs formed through reliance on a mere mechanism, such as a clock (but see Goldberg’s contribution to this volume, described below). Second, Green defends his alternative, namely an extended credit theory of knowledge. That alternative, according to Green, allows one to exclude clocks from counting as being part of one’s own belief-forming processes. Moreover, in genuine cases of cognitive extension (if any such exist), Green’s extended credit theory of knowledge would stand firm as well. Under these conditions, one must just analyze the extended abilities of the subject; there is nothing about the extended credit view of knowledge *per se* that demands processes to be performed only in the head.

In ‘Distributed Cognitive Agency in Virtue Epistemology’, Michael Kirchhoff and Will Newsome scrutinize an assumption which they claim is common to both virtue epistemology and extended cognition—*viz.*, that cognitive agency is an essentially individualistic phenomenon. In contrast, they argue for a distributed, and thus ‘decentralized’, conception of cognitive agency which can encompass socio-cultural practices, and they consider its implications for virtue epistemology.

While the first four papers in the volume are more concerned with the impact of extended cognition on virtue epistemology, Tom Roberts’ argument in ‘You Do the Maths: Rules, Extension, and Cognitive Responsibility’ examines the opposite direction of fit. That is, Roberts argues that virtue-theoretic accounts of knowledge may help us to solve one of the outstanding problems associated with the thesis of extended cognition, namely the problem of cognitive bloat. The virtue-theoretic notion of epistemic responsibility in particular is useful for setting a principled outer boundary on when and where cognitive extension can occur, namely: only when the subject takes epistemic responsibility for the contribution made by the non-neural external resource.

In ‘Cognitive practices and cognitive character’, Richard Menary defends what he calls ‘integrationist’ account of the extended nature of cognitive abilities and cognitive character. Drawing on earlier work (Menary 2007) and on Pritchard’s (2010) work on virtue epistemology and extended cognition, Menary argues that we should distinguish between two conceptions of what is going on in putative cases of extended cognition. The standard interpretation involves an artifact becoming integrated into a cognitive system (Clark and Chalmers 1998). This proposal has proved contentious, however, and Menary urges us to instead adopt a different interpretation of these cases such that they are instances of what he refers to as ‘enculturated cognition’, where this is when our cognitive abilities are transformed by a cognitive species of cultural practices.

Sanford Goldberg’s contribution to this volume, ‘Epistemic extendedness, testimony, and the epistemology of instrument-based belief’, builds on earlier work (especially Goldberg 2010) in which he argued that testimonial belief-forming processes can be interpersonally extended. While Goldberg allows for such extendedness in the case of

testimonial belief-forming process, he explicitly rejects offering an analogous account of beliefs formed via instruments. The goal of his present paper is to further defend his asymmetrical treatment of these two types of belief-forming processes. To this end, he argues that a crucial assumption of his argument for interpersonal extendedness in testimonial cases does not apply to beliefs formed through reliance on instruments.

The next two papers examine whether, if cognitive processes can extend, the same holds for cognitive states, such as knowing. Ronald Giere's answer is 'no'. His paper, 'Scientific cognition: human centered but not human bound', offers three reasons for accepting the idea that cognitive states can be usefully assigned only to the human components of a distributed cognitive system (rather than to the system as a whole). The first appeals to the spatial and temporal dimensions of distributed cognitive systems, the second appeals to the thought that only humans bear epistemic responsibility for claims to knowledge, and finally the third appeals to questions of agency.

Stephen Hetherington, in contrast, finds compelling the thought of extended knowing and, thereby, of extended knowers. In his paper, 'The extended knower', Hetherington argues for a view with respect to knowledge attributions he calls 'gradualism'. According to Hetherington, knowledge may be attributable to a subject to some or other extent, rather than fully. More specifically, knowledge may be attributable partly to a subject and, in line with the thesis of extended cognition, partly to aspects of the world she engages with. As such, knowing may be the province of something more extended-in-the-world than just of persons-and-only-persons.

In 'The epistemic/pragmatic distinction', Paul Loader reconsiders the relevance of the distinction between epistemic and pragmatic action that is drawn by David Kirsh and Paul Maglio in work that heavily influenced the development of the extended mind research program (see Kirsh and Maglio 1994). Loader argues that we need to re-think this distinction, particularly if we want to get a proper grip on the notion of epistemic action as it features in contemporary thinking about the extended mind.

Whereas Loader approaches the question of the epistemological ramifications of extended cognition from a cognitive science perspective, in his contribution to this volume ('Mentalism is not epistemic internalism') Evan Butts approaches this topic from the perspective of mainstream epistemology. A popular characterization of epistemic internalism in contemporary epistemology has been in terms of a thesis known as *mentalism* (see, e.g. Conee and Feldman 2004). Butts argues, however, that mentalism as it is usually understood is consistent with cognitive externalism, and that this undermines the idea that mentalism is the best way of formulating epistemic internalism.

Taken together, these papers give a flavor of the manifold ways in which the extended cognition research program intersects with contemporary epistemology. The present volume, then, has set the agenda for further work in this exciting direction.¹

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Note

1. We would like to briefly comment on the composition of this special issue, which is all-male. All three editors believe in the importance of promoting greater gender balance in philosophy, and thus we have actively tried to avoid this special issue being so imbalanced in this regard, albeit without success. The chief difficulty we had faced is that this in such a new field there

is a very small pool of scholars working on this topic (for example, at the time of going to press, according to our knowledge there were just two published papers which directly bear on the topic of this special issue). Since most of the articles in this special issue were going to be selected through open competition after a well-publicised call for papers, we thought that this would be the best route to attracting female authors to the volume. But while this call for papers generated a large number of submissions, unfortunately we received not a single submission from a female scholar, and by this point it was too late to commission further articles. On reflection, we think that it was a mistake to have depended on the call for papers in this way, and that it would have been better to have delayed the volume at the outset until we were confident that the final volume would have an appropriate gender balance. We regard this special issue as an ‘opening salvo’ in a debate that we think will be very important in the years to come, and we are planning to put together another edited collection on this topic once the debate has become more established. We will ensure that this future volume has a more diverse authorship.

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Andy Clark holds the Chair in Logic and Metaphysics at the University of Edinburgh. His principal research interest is in the philosophy of cognitive science. His books include *Being there: Putting brain, body and world together again* (MIT Press, 1997), *Natural Born Cyborgs* (Oxford University Press, 2003), and *Supersizing the mind* (Oxford University Press, 2008).

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