Where does Otto's notebook fit into the new philosophy of mind, 4EA?

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I shall start and end with a quotation from *The Magus*, by John Fowles*:*

> Nicholas asks Mr Conchis, "You ... travel to other worlds?"
> "Yes I travel to other worlds."
> "In the flesh?"
> "If you can tell me where the flesh ends and the mind begins, I will answer that."

I hope the relevance of that quotation will become clearer as I proceed.

The philosophy of mind that I suspect most of us have been raised on is the 20th century, analytical tradition of such philosophers as Place, Ayer, Quine, Armstrong, Block, Dretske, Fodor, Searle, Kripke, Putnam, Davidson, Chalmers - and lots of others of course. Theirs has now been dubbed the 'classicist, representationalist, computationalist tradition'. These are the dirty words of a new breed of investigators, and some would-be usurpers. Some of these are 'pure philosophers', renegades from the old school, like David Chalmers and Lynne Rudder Baker. Some are half breeds like Daniel Dennett, as much cognitive scientist as philosopher. Most come from a variety of psycho-scientific disciplines: neuro-scientists, cognitive scientists, psychologists, neuro-biologists, roboticists and exponents of artificial intelligence. These are the ones who, over the last twenty years or so, have foisted upon us their new approaches to cognition summarised in the acronym 4EA - that is four Es and an A.

In summary, and to give you a flavour of the new thinking, the 4EA initials stand for:
Embodied, meaning *partly made up of extra-neural bodily structures and processes*. It emphasises the living body - including but going beyond the brain - as the starting point for philosophical and psychological investigation of cognition.

Embedded, meaning *designed to function in tandem with the environment*. It refers to the claim that the neural system is embedded or nested within an organised body *and* the external environment, and can't be analysed independently of its behaviour within both a *physical environment* and a *social-cultural milieu*. Think symbiosis.

Enacted means *actually* ***constituted*** *in part by action*. It refers to the way action-control is not a matter of sensing-modelling-planning-acting, but rather regulating the intrinsic behavioural dynamics of emergent self-organisation, or *autopoiesis*, for effective utilisation of resources in the environment.

Extended refers to how the cognitive system can *extend into the environment*, where quite familiar human mental states can be realised by structures and processes located outside the human head. These 'vehicles' for cognition, such as a notepad used for external memory storage, are constitutive of some cognitive states or processes.

Affective refers to how the intrinsic behavioural dynamics of emergent self-organisation are driven by emotional *attunement* or *affectivity* that interprets stimuli in terms of good/bad, inviting/threatening etc. Antonio Damasio calls this affectivity 'background feelings', and psychologist, Matthew Ratcliffe, calls it 'feelings-of-being-in-the-world' or 'ways of finding oneself'.

The perhaps rather disparaging tone I have used to talk about the new philosophy, words like 'foisting' and 'usurping', probably reflects my initial reactions to learning about this movement some years ago from OUDCE lectures given by Rachel Paine. It seemed that, to the extent some of these newbies talked about replacing the traditional philosophy of mind, they were unjustly rubbishing the profound thought that had gone into the development of the philosophy of mind from the early behaviourism of Skinner and Ryle, through the materialism of U T Place, the insights of the functionalists and the development of folk psychology by such thinkers as Donald Davidson, still leaving unsolved, for example, the hard problem of consciousness posed by David Chalmers. Were these new people cold-heartedly abandoning a sinking ship, or cowardly allowing it to sink when pantheistic, or other possibly unlikely, rescue vessels were steaming towards its aid?

However, my research into 4AE, and particularly the Extended Mind and Embodied Mind, has revealed to me that, while some of the new school still reckon that their studies supersede and are displacing the old philosophy of mind, many of them revert to or build on the developments of twentieth century philosophy. But let me first quote from Wikipedia's article on Embodied Cognition:

> "Although ideas applied in the embodied cognition research program can be traced back to the seminal works of Heidegger, Piaget, Vygotsky, Merleau-Ponty and Dewey, the current thesis can be seen as a direct response and, in some cases, a proposed *alternative* to the cognitivist/classical view of the mind, which conceptualises cognitive functions in terms of a computer metaphor. The cognitivist/classical research program can be defined as a rule-based, information-processing model of cognition that
> 1) characterises problem-solving in terms of inputs and outputs,
> 2) assumes the existence of symbolic encoded representations which enable the system to devise a solution by means of computation, and
> 3) maintains that cognition can be understood by focusing primarily on an organism's internal cognitive processes (that is, specifically those involving computation and representation)."

Later we read that the most radical reactionaries to that kind of thinking "argue that the classicist/cognitivist thesis is incorrect, and any tools or theoretical mechanisms developed from its assumptions are flawed and must be completely replaced."

One commentator on, and member of, the new school, Richard Menary, explains that: "One reason the four Es are grouped together is that they are all held to reject or at least radically reconfigure traditional cognitivism."

And maybe that is true. It must be remembered that many of its proponents come from different scientific disciplines rather than philosophy, and therefore have a different perspective on the problems that their systems and models are addressing, problems more concerned with analysing the dynamics of behaviour and relating it to biological neural processes than with understanding mentality in the abstract, as it were. And we shall see that the more philosophically inclined proponents of 4EA do in fact tend to build on and even incorporate, rather than replace, aspects of the old philosophy. So, I am far more reconciled to 4EA than when I first encountered it.

To demonstrate this I am going to talk mainly about the Extended Mind thesis, first made explicit in the seminal paper by Andy Clark and David Chalmers entitled 'The Extended Mind', published in *Analysis* in 1998. But before expatiating on that paper let me put the Extended mind in context in relation to the Embodied Mind, noting that Andy Clark is a defender also of that concept of cognition. He approvingly quotes Esther Helen, who wrote that:

> "to say that cognition is embodied means that it arises from bodily interactions with the world. From this point of view, cognition depends on the kinds of experiences that come from having a body with particular motor capacities that are inseparably linked, and that together form a matrix within which memory, emotion, language, and all other aspects of life are meshed. The contemporary notion of embodied cognition stands in contrast to the prevailing cognitivist stance which sees the mind as a device to manipulate signals and is thus concerned with the formal rules and processes by which the symbols appropriately represent the world."

Think Jerry Fodor.

The extended mind thesis, of course, goes beyond embodiment in a way that isn't acceptable to some of the Embodied camp. So let us now consider the Clark-Chalmers paper, an understanding of which is helped by bearing in mind something that Andy Clark says in his 2011 book, *Supersizing the mind*, quoting Dennett:

> "The 'extended mind' hypothesis is really a hypothesis about extended vehicles - vehicles that may be extended across brain, body and world. We conflate vehicles and contents ... at our philosophical and scientific peril."[1]

1 Page 76, Andy Clark, *Supersizing the mind*, 2011, Oxford, UK: OUP.

A 'vehicle' is the substrate for, or carrier of, a cognitive process, that on which the cognition supervenes. Within the brain this could be the neurons effecting the cognition.

In a nutshell the EM thesis is, as David Chalmers puts it in his foreword to *Supersizing the mind*, that

> "when parts of the environment are coupled to the brain in the right way, they become parts of the mind."

Peter touched on this point in his talk. Having defined mind, which I have been calling 'cognition', as "the work of the mind", Peter said, "The major burden of coupling is the medium by which the mind expands." However, 'in the right way' is very important. So many critics of the EM thesis assume that any old 'coupling' is good enough to satisfy the theory, but the coupling must satisfy several constraints put upon the extended mind thesis by Clark and Chalmers. Various examples of this are given in their joint paper, most notably that of Otto and his notebook. This is best summarised in Clark's own words, taken from page 78 of *Supersizing the mind*:

> "Inga hears of an intriguing exhibition at the Museum of Modern Art ... in New York. She thinks, [and] recalls it's on 53rd Street and sets off. Otto suffers from a mild form of Alzheimer's, and as a result, he always carries a thick notebook. When Otto learns useful new information, he always writes it in the notebook. He hears of the exhibition at the MOMA, retrieves the address from his trusty notebook, and sets off. Just like Inga, we claimed, Otto walked to 53rdStreet because he *wanted* to go to the museum and *believed* (*even before consulting his notebook*) that it was on 53rd Street. The functional poise of the stored information was, in each case, sufficiently similar ... to warrant similarity of treatment. Otto's long-term beliefs just weren't all in his head."

Clark then allows that *conscious*, or *occurrent*, mental states might supervene only upon "local processes *inside the head*. But insofar as the scope of the mental is held to outrun that of conscious, occurrent contents (to include, e.g., long-term dispositional beliefs as well as numerous ongoing yet unconscious activities), there was no reason to restrict the physical vehicles of such *non*-conscious mental states to states of the brain or central nervous system."

Clark proceeds to anticipate and counter various possible objections to the thesis as exemplified in the Otto thought experiment. Some of these, particularly the objection that the contents of a notebook are so dissimilar to the organic nature of memory traces in the brain (or body!), that they cannot possibly count as being *cognitive*, have already been partly answered in the Parity Principle stated early in the Extended Mind paper. This states:

> "If, as we confront some task, a part of the world functions as a process which, *were it done in the head*, we should have no hesitation in recognizing as part of the cognitive process, then that part of the world *is* (so we claim) part of the cognitive process."

Note the *functionalism*!

In response to certain other possible objections, particularly the charge that *true* cognition is portable, instantly available and, even if it takes the form of a dispositional or non-occurrent belief, it must be consciously endorsed by the agent, Clark points out:

> "First, the notebook is a constant in Otto's life - in cases where the information in the notebook would be relevant, he will rarely take action without consulting it.
>
> Second, the information in the notebook is directly available without difficulty.
>
> Third, upon retrieving information from the notebook he automatically endorses it; and
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> Fourth, the information in the notebook has been consciously endorsed at some point in the past, and indeed is there as a consequence of this endorsement."

Remember what I said about the nature of the coupling.

I shall come back to other objections, some of them already anticipated and given preliminary answers in the original paper, some of them answered in much greater detail by Clark in *Supersizing the mind* and elsewhere, but also robustly rebuffed on his behalf by Mark Rowlands in his 2009 evaluation of *The Extended Mind*[2]. It is interesting that the greatest critics of the

Extended Mind thesis come from within the 4EA fraternity. Among these are Robert Rupert and the joint authors of *The Bounds of Cognition*[3], Fred Adams and Kenneth Aizawa, all defending hypotheses of the *Embodied* Mind that differ from each other and from Clark's version. But then friendly fire can be a lot more vicious than an enemy's bombardments.

Because Rowlands' critique of *The Extended Mind* identifies the main criticisms of Clark's and Chalmers' position, I shall follow him in itemising these and sharing his answers to them, even though his version of the Extended Mind thesis differs in some details from that of Clark and Chalmers.[4] Rowlands identifies four principle criticisms of the thesis, all of which he claims reduce to the fourth, concerning the 'mark of the cognitive'. I'll summarise the criticisms under the following heads:

The Differences Argument

This is an argument levelled by Rupert, who argues that "the external portions of extended 'memory' states ... differ so greatly from internal memories ... that they should be treated as distinct kinds."[5] In other words, he is rejecting the functionalist claim in the Principle of Parity by requiring significant generic similarity between neural memory and extended memory, rather than accepting the coarse functional identification of role. (Incidentally he also demands much finer grained functional identity than Clark and Chalmers think necessary.)

Rowlands' excellent counter argument is that one virtue of the vehicles of extended cognition is that by possessing different properties from their neural counterparts, "external processes can do things that internal processes cannot."[6] - like making occurrent Otto's lost dispositional beliefs.

However, Rowlands recognises that when the external processes are so very different from internal processes, it is valid to question whether "the former are really part of cognition rather than a merely external accompaniment to real, internal, cognitive processing. What reason," he asks, "is there for supposing that the external processes amount to anything more than a form of scaffolding in which real, internal, cognitive processes are embedded?"[7] His conclusion is that it all boils down to the mark of the cognitive. Remember again what I said about the 'right kind of coupling'.

The Coupling-Constitution Fallacy Objection

Adams and Aizawa level a slightly different form of this objection to Rupert's version. They see many supposed examples of the extended mind as no more than cases in which some external object or process is insufficiently integrated with or coupled to a cognitive agent to justify the claim that "the object or process constitutes part of the agent's cognitive apparatus or cognitive processing."[8] The distinction between an external object's merely coupling with an agent as a kind of extraneous scaffolding *causally* helpful to internal, cognitive processes, and its *constituting* part of that process again, says Rowlands, comes down to an adequate criterion of the cognitive by which to discriminate genuine from false examples of extended cognition.

The Cognitive Bloat Objection

This argument relates to Otto's notebook. It asks: if the sentences in Otto's notebook are to count as beliefs, why not the entries in his telephone directory, or everything posted on the Internet? Otto makes frequent use of both, often to look up things he can't remember. However, Clark and

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3 F Adams, K Aizawa, *The Bounds of Cognition*, 2008, UK: Blackwell Pub.

4 Rowlands accepts that "external structures can , when the right conditions are met, qualify as cognitive processes", but not as cognitive states. (Op cit page 632)

5 Rupert, R. 2004. "Some Problems for the Thesis of Extended Cognition." *Journal of Philosophy 101: 389-482*

6 Op cit page 636

7 Op cit page 637

8 Adams, Fred and Kenneth Aizawa. 2001. "The Bounds of Cognition." *Philosophical Psychology 14:43-64*

Chalmers have already given at least part of the answer in requiring Otto to have consciously endorsed his notebook entries. Rowlands adds an ownership criterion as a significant criterion of belief, one that qualifies Otto's notebook as a repository of *his* stored beliefs, but also claims the Cognitive Bloat Objection could also be rebutted by an adequate criterion of the cognitive. And so we come to ...

The Mark of the Cognitive

Catch 22 is that no-one has proposed a generally accepted such mark! Ho ho ho! Rowlands suggests that it is incumbent upon the proponents of the extended mind to "provide an adequate and properly motivated criterion of the cognitive",[9] and he does tell us he is working on it himself. He even offers "a flavor of the current works in progress."[9] You have his 'flavor' with the handout sheets [see Appendix, below], but I intend to skip it for the time being. I'd rather use the rest of my time to make some comments about my take on the stage the Extended Mind thesis has reached, starting with the 'mark of the cognitive'.

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I am reminded of that frequent situation in philosophical conceptual analysis where it appears that we are on an ontological hunt for the truth. What truly and really *is* knowledge, or free will, or, in this case, The Cognitive? By what indubitable signs can we know it? What are its necessary and sufficient conditions? I have a strong feeling that any answer about the Cognitive, irrespective of all the neuro-scientific research that may be undertaken, will be question-begging, that is begging the question in favour of the answer the proposer intuitively feels to be correct.

A neuro-psychologist like Robert Rupert will always want an answer that fits into his own programme of neuro-psychological research, and will exclude any answer that lies outside the body. That is why he insists on one of the many things I have failed to mention, that the cognitive must contain 'underived representations', no content that is imported from extrinsic sources.

However, if, like Clark and Chalmers, you are satisfied that if a part of the world functions as a process which, if it were done in the head, you would readily recognise as part of a cognitive process, then it is likely that for you the role played would characterise what you considered cognitive, almost irrespective of the physical medium in which the process was enacted or of its location.

I am reminded of a riddle attributed to Wittgenstein, possibly apocryphally. If a dog circumnavigates a cow, which turns round completely so that it is always facing the dog, has the dog gone round the cow? What is the correct, the *true*, answer: yes or no? Remember the dog has never got behind the cow. The answer is that, since we know exactly what occurred, it doesn't matter what we call it, so long as we know what happened. Which is not to say it is not worthwhile arguing (up to a point!) about which is 'correct', since the discussion itself is likely to be illuminating, even if it only identifies the cause of puzzlement. That seems to me true about so many instances of conceptual analysis, including that about the mark of the cognitive.

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And remember my starting quotation from John Fowles' *The Magus*:

> Nicholas asks Mr Conchis, "You ... travel to other worlds?"
> "Yes I travel to other worlds."
> "In the flesh?"
> "If you can tell me where the flesh ends and the mind begins, I will answer that."

Appendix:

Mark Rowlands on the Mark of the Cognitive[10]

9 Op cit page 639

10 *Zygon*, vol. 44, no. 3 (Sept 2009), 'The Extended Mind', pages 639-640

An adequate and properly motivated criterion of the cognitive, I argue, looks like this:

A process *P* is a cognitive process if and only if:

1. *P* involves information processing - the manipulation and transformation of information-bearing structures;
2. this information processing has the proper function of making available either to the subject or to subsequent processing operations information that was (or would have been), prior to (or without) this processing, unavailable;
3. this information is made available by way of the production, in the subject of *P*, of a representational state;
4. *P* is a process that belongs to the subject of that representational state.

This is a *sufficient* condition for a process to count as cognitive, not a *necessary* one. The criterion can be extracted with relative ease from examination of paradigmatically internalist accounts of cognitive processes - David Marr's (1979) theory of vision being an obvious example - so it can hardly be accused of being motivated with extended mind aforethought. It is also the criterion of the cognitive tacitly assumed in the arguments of *The Body in Mind*[11]. My arguments for extended perception, memory, reasoning, and so forth developed there were all predicated on this criterion of the cognitive.

Condition 4, the ownership condition, is the most difficult to explicate and defend. Doing so, however, is rewarding. Explaining ownership of cognitive processes ultimately requires us to properly understand the nature of intentionality. The account of intentionality I develop is not functionalist; but the thesis of the extended mind emerges from this account in a straightforward, indeed obvious, way. This account of intentionality therefore provides us with a way of motivating the extended mind without presupposing any contestable form of functionalism.

This is the outline, of course. The devil that is inevitably to be found in the details will have to be deferred until a later time.

11 Rowlands, Mark. 1999. *The Body in Mind: Understanding Cognitive Processes. Cambridge: CUP*