The socially extended mind

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Thinking, or knowledge getting, is far from being the armchair thing it is often supposed to be. The reason it is not an armchair thing is that it is not an event going on exclusively within the cortex.... Hands and feet, apparatus and appliances of all kinds are as much a part of it as changes within the brain. (John Dewey 1916, 13-14).

Clark and Chalmers (1998) introduced the concept of the extended mind, in part to move beyond the standard Cartesian idea that cognition is something that happens in a private mental space, “in the head.” In this paper I want to pursue a liberal interpretation of this idea, extending the mind to include processes that occur within social and cultural institutions. At the same time I want to address some concerns that have been raised about whether such processes actually constitute cognitive processes, so that we think of the mind as extended, or whether environmental and institutional factors are simply causal supports for cognition, which, essentially, continues to occur only in the head.\(^1\) I start with what Clark and Chalmers have called the parity principle.

If, as we confront some task, a part of the world functions as a process which, *were it to go on in the head*, we would 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. (Clark and Chalmers 1998, p. 8)

On a strict interpretation this principle appears to measure cognition in terms of the Cartesian gold standard of what goes on in the head. It suggests that a process outside of the head counts as cognitive only if in principle it could be accomplished in the head (or at least imagined to be so) – conforming to the

\(^1\) In this paper I draw on some material found in Gallagher and Crisafi (2009) and Crisafi and Gallagher (2009). In those papers we made reference to Hegel's idea of objective spirit and the externalization of the mind in social institutions. The idea can be explicated without reference to Hegel, and here I make no use of his philosophy.
(minimal) Cartesian concept of mental process as something that would normally happen in the head. Thus, we might think of some mental processes as happening "out there" in the world, yet still have a principled reason to limit mental processes to the kinds of things that fit a relatively standard model of the mind.

Clark (2008, p. 114) rejects this interpretation, insisting that the parity principle should not be interpreted as requiring any similarity between inner and outer processes. Wheeler (2006, 3) explains that the parity principle does not "fix the benchmarks for what it is to count as a proper part of a cognitive system by identifying all the details of the causal contribution made by (say) the brain [and then by looking] to see if any external elements meet those benchmarks." This reading is consistent with the functionalist account that both Clark and Wheeler embrace. The worry that comes along with this liberal interpretation is that the concept of mind gets overextended to include any process in the world (the "cognitive bloat" worry [see Rupert 2004]). Thus, even as he allows for the liberal interpretation of the parity principle, Clark starts to tighten it up again with a set of additional criteria that need to be met by external physical processes if they are to be included as part of an individual’s cognitive process. He lists three criteria.

1. That the external resource be reliably available and typically invoked.

2. That any information thus retrieved be more-or-less automatically endorsed. It should not usually be subject to critical scrutiny (unlike the opinions of other people, for example). It should be deemed about as trustworthy as something retrieved clearly from biological memory.

3. That information contained in the resource should be easily accessible as and when required. (Clark 2008, 79)

The parity principle plus these criteria rule over the primary and much discussed example of extended cognition provided by Clark and Chalmers: the example of Otto and Inga.

First, consider a normal case of belief embedded in memory. [Inga wants to go to MOMA, and remembers where it is].... It seems clear that Inga believes that the museum is on 53rd Street, and that she believed this even before she consulted her memory. It was not previously an occurrent belief, but then neither are most of our beliefs. The belief was somewhere in memory, waiting to be accessed. … Now consider Otto. Otto suffers from Alzheimer’s disease, and like many Alzheimer’s patients, he relies on information in the environment to help structure his life. Otto carries a notebook around with him everywhere he goes. When he learns new information, he writes it down. When he needs some old information, he looks it up. For Otto, his notebook plays the role
usually played by a biological memory. Today, Otto hears about the exhibition at the Museum of Modern Art, and decides to go see it. He consults the notebook, which says that the museum is on 53rd Street, so he walks to 53rd Street and goes into the museum. (Clark and Chalmers 1998, 12-13)

The notebook, for Otto, clearly plays the same role that memory plays for Inga. The belief, in Otto’s case, supervenes on processes that lie “beyond the skin” when in fact Otto engages with those non-neural processes. Alzheimer's disease aside, we all may use similar memory enhancing tricks as Otto. If we have poor memories for directions or addresses, then with paper and pencil we use technology to do something that we could do, with a little more effort, in our head. Or perhaps we enhance our cognitive performance with other technology. Imagine looking up directions on Google, downloading them into your phone, and then using your phone to find your way. We seemingly are able to store our memories, and activate beliefs about where things are located, using such instruments. I can’t remember where the restaurant is, but I, plus my technology, can.

One of the problems with this, and similar examples, as I see it, is that it starts with a concept of the mind that the extended mind hypothesis is really trying to challenge. Specifically, the three criteria are worked out in terms of how we might deal with beliefs or “beliefs embedded in memory.” Clark (2008) then generalizes the criteria to apply to all cognitive processes. The controlling conception of the mind that guides the application of the three criteria, then, is that the mind is constituted by beliefs, desires, and other propositional attitudes, as well as representations and informational states. But neither belief-desire psychology nor these criteria necessarily apply to all cognition, especially if one thinks of cognition in terms of enactive cognitive processes and activities, e.g., problem solving, interpreting, judging, rather than in terms of mental states, or contents, e.g., beliefs, information. In what follows I want to argue for a liberal, and specifically social, extension of the extended mind hypothesis, and I do so by first introducing an example that views cognitive processes as more like solving problems than like holding a belief.

**Mental institutions**

Certain social institutions (including social practices) are what we might call ‘mental institutions’ (Gallagher and Crisafi 2009), in the sense that they are institutions that help us to accomplish certain cognitive processes. Indeed, without them, specific classes of cognitive processes would simply not exist. They are at least enabling conditions, and on the most liberal reading, constitutive of those processes. Examples include things like legal systems, educational systems, cultural institutions, e.g., museums, and even the institution of science itself. In each case a mental institution

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1. includes cognitive practices that are produced in specific times and places, and
2. is activated in ways that extend our cognitive processes when we engage with them (that is, when we interact with, or are coupled to these systems in the right way).

Here I’ll consider the legal system as a good example. One way to think of the institution of law is to begin by thinking of people making claims on property, the appropriation and use of which immediately puts us in certain kinds of relations to others, relations which grow in complexity, and necessitate the use of contracts. A contract (as a legal agreement, not just the piece of paper) is in some real sense an expression of several minds externalized and extended into the world, instantiating in external memory an agreed-upon decision, adding to a system of rights and laws that transcend the particularities of any individual’s mind. Contracts are institutions that embody conceptual schemas that, in turn, contribute to and shape our cognitive processes. As such they are used as tools to accomplish certain aims, to reinforce certain behaviors, and to solve certain problems. Institutions of property, contract, rights, and law not only guide our thinking about social arrangements, for example, or about what we can and cannot do, but allow us to think in ways that were not possible without such institutions. Insofar as we cognitively engage with such tools and institutions we extend and transform our cognitive processes.

The legal system is constructed in part in these cognitive processes. Legal practices, the formation of legal judgments, the administration of justice, the application of law to particular cases, are, among other things, such as exercises of power, cognitive. They do not, however, happen simply in the individual brains of judge, jury, defense attorney, prosecutor, etc. Of course we usually think of judgments as happening in the privacy of one’s own head. But some judgments supervene on external practices and processes that guide them or that allow manipulation of a large amount of empirical information. In a court of law, for example, evidence and testimony are produced, and judgments are made following a set of rules that are established by the system. The process in which the judgments get made will depend on remaining cognitively engaged with a body of law, the relevant parts of which come to the fore because of the precise particulars of the case, as the proceedings develop.

Consider an example that involves three different scenarios.

1. Alexis is given a set of facts and is presented a collection of evidence and is asked to judge the legitimacy of a certain claim that is being made on the basis of her own subjective sense of fairness. To make her judgment Alexis must weigh the facts and consider the evidence entirely in her own head, without help or interference from others. In this process she draws up and considers three questions about the facts, tries to answer them the best she can, and in that way forms her judgment.
2. Alexis is given a set of facts and is presented a collection of evidence and is asked to judge the legitimacy of a certain claim that is being made. This time, however, she is given the three questions by a group of experts who provide a set of possible answers from which she may choose. She still has to figure out what principles to use in answering the questions and forming her judgment. She considers the three questions, tries to answer them the best she can, and in that way forms her judgment.

3. Alexis is given a set of facts and is presented a collection of evidence and is asked to judge the legitimacy of a certain claim that is being made. As in (2), she is asked to consider the same three questions from a group of experts who again provide a set of possible answers from which she may choose. This time they also provide a set of pre-established rules she must follow in answering the questions.

How much cognitive processing, or let’s say cognitive effort, is present in these cases? I think we should say that all three cases are similar in respect to cognitive effort. In the first case, however, Alexis does all of the work in her own head. In the second case, there may be less cognitive effort on her part since she did not have to draw up the questions, and the possible answers were already provided so she did not have to think them up. But overall, there seems to be an equal amount of cognitive effort going on, distributed across a number of participants – including the experts. Cognition is socially extended in the legal institutional practices. In the third case there may be even less cognitive effort going on in Alexis’ head -- she not only doesn’t have to draw up the questions and possible answers, she doesn’t have to produce the principles or rules required to make the judgment. Quite possibly there is less cognitive effort going on in the heads of the experts too, since they may be simply informing her of possible answers and rules that have been pre-established, e.g., in the legal system. The possible answers and rules have been instituted by previous practice and are made available for the juror. Indeed, we could say that such questions, possible answers, and rules create the tracks along which the cognitive process must run to keep it, literally, legitimate. The possible answers and rules are part of a system – stored in a system – with which these people become cognitively engaged – and the system is doing some of the work. Moreover, these elements of the system were previously established in some kind of process that we would certainly call cognitive. Over all, in a distributed sense, there is an equal amount (if not more) cognitive effort to be found in the third case.

Consider now a fourth scenario. Alex attended law school and has gained a certain expertise in legal matters. When faced with precisely the same situation as Alexis in (1) – i.e., left on his own resources to formulate a judgment about a certain state of affairs – his resources allow him to organize his judging process using precisely those questions, possible answers, and rules provided by the legal system to Alexis in (3). Even on the conservative reading of the parity principle, we would have to say that if we count as cognitive the kinds of processes going
on in Alex’s head (although quite possibly Alex uses a variety of media and technology that are part of a specific legal system in order to do what he does – so the processes aren’t done entirely in his head), then we would also have to count as cognitive the kind of process that Alexis is engaged with, even if some of the elements are instituted in the system and only available to her externally.

Judgments, then, are not necessarily confined to individual brains, or even to the many brains that constitute a particular court. They emerge in the workings of a large and complex institution. Yet these judgments and legal proceedings are cognitive processes that then contribute to the continued working of the system in the form of precedents. The practice of law, which is constituted by just such cognitive and communicative processes, is carried out via the cooperation of many people relying on external (and conventional) cognitive schemas and rules of evidence provided by the legal institution itself. A judgment made in such contexts is a form of cognition that supervenes on a large and complex system without which it could not happen. Indeed, it’s a cognitive practice that in principle could not happen just in the head. Even in the case of Alex, who seemingly does do it in his head, what he does depends not only on the fact that he has previously engaged in the workings of the legal system (receiving his training and tuning his cognitive abilities in the educational subsystem called law school), but on the ongoing workings of the legal system since what he engages in, i.e., the particular cognitive process of forming a legal judgment, is what it is only in that system. One could even imagine a specific kind of question that would never even come up if there were no legal system. The legal system in effect helps to generate certain cognitive events, sometimes creating perplexities and problems of a purely legal nature, and sometimes helping to resolve them. An individual required to make judgments about the legitimacy of certain arrangements thus interacts with the legal institution and forms a coupled system in a way that allows new cognitive processes to emerge – cognitive processes that would otherwise not be possible. Take away the external part of this cognitive process – take away the legal institution – and “the system's behavioural competence will drop, just as it would if we removed part of its brain” (Clark and Chalmers 1998, p. 9).

We create these institutions via our own (shared) mental processes, or we inherit them as products constituted in mental processes already accomplished by others. We then engage with these institutions – and in doing so, participate with others – to do further cognitive work. If we think of the mind not as a repository of propositional attitudes and information, or in terms of internal belief-desire psychology, but as a dynamic process involved in solving problems and controlling behavior and action – in dialectical, transformative relations with the environment – then we extend our cognitive reach by engaging with tools, technologies, but also with institutions. Such processes and practices are obviously social, since the socially established institutions facilitate, or sometimes impede, but in each case enable and shape our cognitive interactions with other people.

Such institutions allow us to engage in cognitive activities that we are unable to do purely in the head, or even in many heads. If we are justified in
saying that working with a notebook or a calculator is mind-extending, it seems equally right to say that working with the law, the use of the legal system in the practice of legal argumentation, deliberation and judgment, as well as the enforcement of law for purposes of controlling behavior is mind-extending too. This view pushes us beyond the strictly defined parity principle and extends the mind to a degree that even the liberal interpretation might have reservations about. Is the concept of mental institutions too large – an overextended mind – or is Clark and Chalmers’ concept of the extended mind not large enough?

**Following directions**

From here we could move in a number of directions. First, as just indicated, we could take this discussion back to the ongoing extended mind debates between Clark, Wheeler, Rowlands, et al. on one side, and Adams, Aizawa, Rupert, et al. on the other side. I’ve pursued this in several papers (Gallagher and Crisafi 2009; Gallagher 2011). For example, I’ve tried to show that Clark’s three criteria are wrong-headed. Take the second criteria: that for processes to count as cognitive, they should be automatically endorsed, not subject to critical scrutiny, and trustworthy (or at least as trustworthy as one’s own biological memory). But why should some process that would otherwise count as a cognitive process not count as a cognitive process because it requires critical scrutiny, which is itself a cognitive process? There are plenty of instances of taking a critical metacognitive perspective (which is, of course, a cognitive process) on other problem solving acts of cognition. Taking such a perspective is itself a cognitive process, and again, in certain instances, that process may necessitate an institution like the law. That is, some critical perspectives are clearly legal perspectives that supervene on a legal institution, and do so in a way that is even more “trustworthy,” i.e., reliable, than biological memory.

In this regard one could also defend this “larger,” socially extended concept of the mind from the various objections raised against the extended mind hypothesis. For example, to include mental institutions in the notion of extended mind seems to be a good example of the cognitive bloat that Rupert (2004) worries about, where cognition extends to all kinds of processes that seem at odds with the very notion (or the very traditional notion) of cognition. If my mind is extended by my use of Google to solve a problem, does that mean that cognitive processing is ongoing everywhere in cyberspace? Rowlands (2009), in response to the cognitive bloat argument, has suggested that part of what qualifies a process as cognitive is that it is owned by the agent. This notion of ownership, however, doesn’t seem to apply to mental institutions – no one owns the legal system, for example. Here, however, we might appeal to a Lockean notion of ownership – ownership is constituted by the work invested. More precisely, it is the fact that I am working and engaged in the right way with mental institutions that makes them a constituent part of my cognitive processes. Only so far as I am properly

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3 That’s why the comfortable armchair is ruled out. I may do my best thinking as I sit in my favorite armchair, and I may not be able to do my philosophical thinking at all without sitting...
engaged with these institutions (or with notebooks or pieces of technology), do they contribute to the constitution of my cognitive processes; and if I am not engaged with them (just as some neuronal processes in my brain may remain unactivated in specific circumstances) then they are not cognitively activated. Rupert (2009, 131) discusses “densely interactive processes” – “those in which the organism and environment affect each other in an ongoing way.” It seems clear that such densely interactive engagement or enactive coupling with those non-neural aspects would push out the defining limit for the concept of cognition. What constitutes the cognitive is tied to the specific kind of engagement that’s involved.

One attempt to answer the question of where cognition stops and something non-cognitive begins is to ask about “the mark of the mental” (see Adams and Aziawa 2009). Adams and Aizawa (2009) suggest that what marks the mental is non-derived content. But the concept of non-derived content is not on settled ground. As Shapiro (in press) notes, “there is today no received theory of how original content comes to be in the first place,” and this means that it might be possible to find a theory of non-derived content that is consistent with extended cognition. Others have appealed to intentionality (following Brentano’s idea) as that mark (e.g., Menary 2009). Again, however, there is a good deal of disagreement about intentionality. Surely, for example, the experience of pain is a mental experience, but is it intentional? (see, e.g., Crane 1998 for discussion). And some, including Husserl and Searle, have argued that not all mental experience is intentional. Furthermore, the problem this solution is meant to solve is simply repeated again if, as some claim, intentionality is purely internalistic (see, e.g., Horgan and Tienson 2002).

I suggest that we set such considerations aside because the question about the mark of the mental is not the right question, whatever the right answer might be to it. For two reasons. First, the way that Adams and Aizawa answer the question shifts the entire discussion to questions about content (derived vs. non-derived), when in fact the extended mind hypothesis is a version of vehicle externalism. If one accepts the content-vehicle distinction, as Adams and Aizawa and Clark do, then it’s not clear how deciding about the non-derived nature of content will necessarily allow us to decide what is and what is not a vehicle for cognition. This, of course, is tied to, second, the fact that the question about the mark of the mental is not a question that can be answered without first determining whether some cognitive processes are extended, otherwise it amounts to question begging. In other words, whether content is derived or non-derived will depend on how one answers the vehicle question. Phenomenologists (and perhaps pragmatists), for example, suggest that intentionality primarily (non-derivatively) embodied in action (the notion of operative or motor intentionality in Husserl and Merleau-Ponty) and is in that sense extended.

I think the basic strategy here is to show that most of the objections to the extended mind hypothesis are too closely tied to the conception of the mind that
the hypothesis is rejecting – or ought to be rejecting. That is, we need to conceive of the mind, not on a functionalist interpretation (pace Clark, Wheeler, and many others), but as enactively generated in the specific interactions of organism-environment (where environment is social as well as physical). The mind, not as a collection of propositional attitudes, representations, mental states, etc., all of which have supposedly intrinsic or non-derived content (Adams and Aizawa 2009), but the mind as an enactive and emotionally embedded engagement with the world through which we solve problems, control behavior, understand, judge, explain, and generally do certain kinds of things. On this conception, the mind is constituted primarily by just such activities, and anything that we might call propositional attitudes are derivative and are inexplicable except in reference to such activities. This conception of the mind can be explicated in a neo-pragmatist, operative conception of intentionality that highlights the important role of social-normative practices and emphasizes interactive processes in social cognition (Gallagher and Miyahara, in press).

This suggests a second direction to take, namely, to explore how the socially extended mind relates to issues of development and social cognition. Here, as hinted above, one can start with the idea that the family is ontogenetically the first institution, and ask how basic embodied processes of primary intersubjectivity pull the infant into cognitive habits that shape all further learning, and that become linguistic practices that are further educated in all other social institutions encountered by the child. Further, since cognition is meaning-producing or sense-making, we could explore how participatory sense-making (De Jaegher and Di Paolo 2007) works within specific institutions. As enactive approaches to cognition have suggested, sense-making processes involve a form of strong interaction that has a certain autonomy, that is, they are not necessarily under an individual agent’s complete control, but often transcend the agent’s subjective processes (De Jaegher, Di Paolo, and Gallagher 2010). Social interaction and participatory sense-making specifically involve patterns of engagement that can acquire their own form of self-organisation through mutual regulation. In the context of extended cognition, where we can speak of interaction with institutions as well as with tools, instruments, technologies, etc., the point is that cognition just is any interaction or engagement that produces meaning for the agent, but that the production of meaning is not just an individual enterprise. Participatory sense-making is always shaped by the super-individual processes of institutions.

A third direction is almost too obvious to mention. One would clearly have to extend the investigation of socially extended cognition itself in various ways. I’ve argued that the use of a legal system to solve a legal problem constitutes a case of complex “epistemic action,” and is an instance of extended cognition. The legal system, however, is just one example and we have only scratched the surface in our conceptual analysis of it as a mental institution. Clearly we could expand on this by taking into consideration empirical studies that show precisely how cognition is shaped by various practices found, not only in the legal system, but in various institutions – including educational, cultural, entertainment, military, corporate, religious, scientific, and so forth.
Finally, although there may be other directions to take such investigations, let me, in the remainder of this paper, point in the direction of critical theory and the task of taking a critical perspective in the context of the socially extended mind.

**Socially extended mind and critical theory**

It is important to note that the idea of the socially extended mind -- the social and institutional version of the extended mind hypothesis – motivates a critical normative perspective not usually taken up in the cognitive science literature on the extended mind. Institutional structures can shape the way that we use certain technologies, and can allow us to see certain possibilities even as they blind us to others. We should take a closer and critical look at how social and cultural practices either productively extend or, in some cases, curtail mental processes. We know that certain technologies and media, as they are strategically used for consciously determined objectives by specific institutions, offer possibilities, which at the same time carry our cognitive processes in particular directions. Such processes can have profound effects on us, and on our thinking. It is therefore important to ask what the mechanisms and institutions do to us as agents and as subjects of cognition. I think that these kinds of questions clearly fall into the concerns of critical social theory.

At least on one critical theory approach, the main task would be to expose the various epistemic actions and operations carried out by institutional practices that distort (or at least shape) our cognitive processes, in order to promote ethical or political reflection on such practices. Of course any critical theory worth its salt would then turn its critical reflective eye on the way we carry out those ethical and political (and inevitably ideological) reflections to further inquire about the instituted practices of such reflections. If this task is to be met by critical theory, then it needs to enlist the help or, or perhaps itself to become a kind of critical cognitive science. Here is one example in which cognitive science can become a critical science.

Studies of decision making show that even if one seems to be engaged in a solitary set of mental reflections in one’s head, decision making is really a matter of embodied, emotion-rich, environmentally modulated processes. Even if we are trained as hard-nosed rationalist philosophers, or no-nonsense business executives, or data-driven scientists, research has shown that our decisions are influenced by various institutional practices. The examples are too numerous to mention, but they include the spatial arrangement of supermarkets, the architectural design of churches, the rules of evidence and the structure of allowable questions in a courtroom trial, and a variety of rituals and practices designed to manipulate our emotions. Sometimes the effects are unintentional and are accidental features of the institutional environment; sometimes they are the result of strategic planning.

There are a lot of experiments that show the impact of placing subjects in certain bodily positions, or mentioning certain words or exposing subjects to certain images in order to manipulate their cognitive and/or emotional states and lead them to certain decisions. They range from Elizabeth Loftus’s research on
using particular words to prime perceptual judgments or manipulate memory (e.g., Loftus and Palmer 1974), to John Bargh’s work on the effects of unconscious priming effects on cognitive tasks (1989). Let me focus on one example from the research of Paul Slovic.

Slovic’s group has studied empathy and altruistic behavior and has shown that the kind of information provided to potential charitable donors will affect not only their decision to act altruistically by making a donation, but will determine the amount that they donate. It’s known, for example, that a higher number of victims involved in a major disaster or in genocide will not necessarily generate more altruistic behavior than a smaller number (Figure 1).

Figure 1: Graph A represents a normative utilitarian model that suggests that the larger loss of life will motivate a greater degree of altruism. Graph B represents something closer to actual behavior. The greater the loss of life the more abstract and emotion-less it becomes with only slight increases in altruistic behavior after the first few cases. (Figures from Slovic 2007).

When someone is presented with a set of statistics, the cold although convincing facts about the enormity of the problem to be addressed, they show less altruistic behavior (make less donations) than when they are presented with the image and or personal story of one individual.

Statistics on the extent of the suffering
- Food shortages in Malawi are affecting more than 3 million children.
- In Zambia, severe rainfall deficits have resulted in a 42% drop in maize production from 2000. As a result, an estimated 3 million Zambians face hunger.
- Four million Angolans — one third of the population — have been forced to flee their homes.
- More than 11 million people in Ethiopia need immediate food assistance.

Image and narrative about one individual
Rokia, a 7-year-old girl from Mali, Africa, is desperately poor and faces a threat of severe hunger or even starvation. Her life will be changed for the better as a result of your financial gift. With your support, and the support of other caring sponsors, Save the Children will work with Rokia's family and other members of the community to help feed her, provide her with education, as well as basic medical care and hygiene education.

When presented with the personal details concerning the suffering of another person, people experience a variety of emotional reactions. Charitable organizations capitalize on this fact to secure donations for humanitarian aid purposes (Small, Loewenstein & Slovic 2007). When information about others is presented in a way that elicits empathic responses, donations are greater in comparison to when this information is processed in a detached, abstract, or intangible way (Dickert & Slovic 2009).

This may be an obvious and relatively innocuous example of how different media enter into the cognitive process, and how institutions may use media to elicit certain behavior. I take this to be a case of socially extended cognition because the process of decision making changes, indeed is manipulated, when one set of external factors is introduced rather than another – that is, when images plus narrative are part of the process rather than statistical data – and the whole process is mediated by a certain institutional practice. The objective of the

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4 Even on the conservative interpretation of the parity principle, this would count as extended mind. Unassisted by any external factors I could remember the image of Rokia or could call up previously studied statistics from memory to facilitate my decision making. Instead, my decision making is facilitated by perceiving a photo, or by studying a collection of typed data. Language and visual media, are clearly examples of the kinds of things that can act as vehicles on which my thinking supervenes.
charitable organization that exploits these means for raising money may be noble, and the outcome, a certain amount of altruistic behavior, may be good for everyone, but one can easily think of other organizations, objectives, and outcomes that may not be so innocuous. The point is, however, faced with such institutional practices, we not only ought to understand, from an efficiency perspective, how precisely they improve (or impede, or distort) cognitive processes of decision making or problem solving, or how we can improve their efficiency (these seem to be tasks already addressed by various studies in cognitive science), but also, from a critical perspective, whether these processes improve (or impede, or distort) our communicative practices, our possibilities for action, our recognition of others, our shared and circumscribed freedoms, and so forth.

Cognitive science is already studying the kind of cognition that some theorists take to be socially extended cognition; the proposal here is that we give this kind of cognitive science a critical twist.

References


