

A conceptual and empirical framework for the social distribution of cognition: The case of memory

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Amanda J. Barnier^{a,*}, John Sutton^b, Celia B. Harris^a, Robert A. Wilson^c

^a Macquarie Centre for Cognitive Science, Macquarie University, Sydney, NSW 2109, Australia

^b Department of Philosophy, Macquarie University, Sydney, NSW 2109, Australia

^c University of Alberta, Edmonton, Canada

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Abstract

In this paper, we aim to show that the framework of embedded, distributed, or extended cognition offers new perspectives on social cognition by applying it to one specific domain: the psychology of memory. In making our case, first we specify some key social dimensions of cognitive distribution and some basic distinctions between memory cases, and then describe stronger and weaker versions of distributed remembering in the general distributed cognition framework. Next, we examine studies of social influences on memory in cognitive psychology, and identify the valuable concepts and methods to be extended and embedded in our framework; we focus in particular on three related paradigms: transactive memory, collaborative recall, and social contagion. Finally, we sketch our own early studies of individual and group memory developed within our framework of distributed cognition, on social contagion of autobiographical memories, collaborative flashbulb memories, and memories of high school at a high school reunion. We see two reciprocal benefits of this conceptual and empirical framework to social memory phenomena: that ideas about distributed cognition can be honed against and tested with the help of sophisticated methods in the social-cognitive psychology of memory; and conversely, that a range of social memory phenomena that are as yet poorly understood can be approached afresh with theoretically motivated extensions of existing empirical paradigms.

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1. Introduction

Paradigms in which human cognition is conceptualised as “embedded”, “distributed”, or “extended” have arisen in different areas of the cognitive sciences in the past 20 years. These paradigms share the idea that human cognitive processing is sometimes, perhaps even typically, *hybrid* in character: it spans not only the embodied brain and central nervous system, but also the environment with its social or technological resources (Clark, 1997, 2007; Haugeland, 1998; Hollan, Hutchins, & Kirsh, 2000; Hutch-

ins, 1995, 2006; Kirsh, 1996, 2000, 2006; Norman, 1993; Sutton, *in press-a*; Wilson, 1994). Such views of cognition share a scepticism about the adequacy of conceptualizing cognition as a process that begins and ends at the skull.

One motivation for adopting a perspective in which cognition is embedded, distributed, or extended begins with reflection on the fact that neural systems do not operate in causal isolation from their environments. Moreover, the nature and level of causal integration across the divide between individual and environment suggests that cognitive systems themselves often involve the coupling of neural, bodily, and external systems in complex webs of continuous reciprocal causation. Through evolution and ontogenetic development we have gained capacities skilfully

* Corresponding author.

E-mail address: abarnier@maccs.mq.edu.au (A.J. Barnier).

to hook up with or incorporate external physical and cultural resources that over time have themselves become apt for incorporation into more encompassing, extended cognitive systems. In this way, we form temporarily integrated larger cognitive units that incorporate distinct but complementary inner and outer components, often making “the world smart so that we can be dumb in peace” (Clark, 1997, p. 180). Embodied human minds extend into a vast and uneven world of things—artefacts, technologies, and institutions—which they have collectively constructed and maintained through cultural and individual history.

Often-cited examples of distributed cognition include studies of the instruments and procedures involved in navigation; the physical objects and epistemic tools used in processing orders in a café; the tangle of notes and records with which an academic paper is written; the way skilled bartenders employ unique glasses to remember cocktail orders; or the sketchpads without which abstract artists cannot iteratively re-imagine and create an artwork (Beach, 1988; Clark, 1997, 2001; Hutchins, 1995; Kirsh, 2006; van Leeuwen, Verstijnen, & Hekkert, 1999). Developing research programmes in distributed cognition and the extended mind are being tested and applied in disciplines ranging from science studies (Giere, 2002) to cognitive archaeology (Knappett, 2005), computer-supported cooperative work (Halverson, 2002), and Shakespeare studies (Tribble, 2005). Philosophical defenses of the extended mind (Clark & Chalmers, 1998; Rowlands, 1999; Wilson, 2004) have generated a robust, critical, ongoing debate about the conceptual foundations of the approach (Adams & Aizawa, 2001, 2007; Clark, *in press*; Menary, 2006; Rupert, 2004).

This literature on “the cognitive life of things” (Sutton, 2002a) has fuelled a rather technophilic style in distributed cognition research, occasionally resulting in a preoccupation with technology to the relative neglect of social systems (Clark, 2003; Clark & Chalmers, 1998). Yet in most complex real-world contexts, distributed cognitive processes involve the skilful interactive simultaneous coordination of things and people. One natural strategy to address the methodological challenges this poses is to seek insight from and integration with research traditions that focus on interpersonal interaction in cognition. This is to draw attention to the social aspects of distributed cognitive processes, to cases in which other people—rather than artefacts—are the more-or-less enduring partners in coupled or transactive distributed cognitive systems.

In this paper we thus aim to show that the distributed cognition framework offers new perspectives on social cognition by applying it to one specific domain: the psychology of memory (see also Tollefsen, 2006). In particular, we argue that independent lines of research on memory—about relations between individual memory and social groups—can be better understood and developed by reconceiving them within this theoretical framework. This focus on the social distribution of cognition is particularly appropriate in thinking about memory, since encoding, storage,

and retrieval in real-world contexts all frequently involve the cognitive activities of more than a single individual. This integrative project should have benefits both ways. On the one hand, ideas about distributed cognition can be honed against and tested with the help of sophisticated methods in the social-cognitive psychology of memory; conversely, a range of social memory phenomena that are as yet poorly understood can be approached afresh with theoretically motivated extensions of existing empirical paradigms.

The empirical work on transactive and collaborative remembering that we survey below covers just one of a number of fields to which the framework of distributed and extended cognition can be brought to bear: we could also refer to studies of multi-agent interaction in AI (Konig & Ling, 2003), small-group research in social psychology (Fiske & Goodwin, 1994), or (closer to our concern with memory) the flourishing social-interactionist tradition in the developmental psychology of autobiographical memory. In this last field, for example, 20 years of research has built up a rich picture of early personal memory capacities emerging from the dynamical interaction of distinct components in a social-cultural-cognitive-neural system (Nelson & Fivush, 2004), where the relative influence of multiple concurrent processes can vary across cases (Griffiths & Stotz, 2000; Reese, 2002; Smith & Thelen, 2003; Sutton, 2002b). Early joint attention to the past between carers and children slowly helps the child achieve a grasp of the causal significance of the order of events, of the availability of distinct perspectives on the same past time, of the uniqueness of actions, and of the affective and social significance of the sharing of memories (Campbell, *in press*; Hoerl & McCormack, 2005). Independent work on children’s explanatory knowledge, and particularly on their knowledge about the social division of cognitive labour (Lutz & Keil, 2002; Rozenblit & Keil, 2002; Wilson & Keil, 2000), is also relevant here. While we will not discuss this developmental work further in this paper, the picture of early personal memory as socially distributed clearly dovetails with the view of the cognitive psychology of memory that we offer below.

The conceptual and empirical benefits that flow from this exploration of the social distribution of memory might also include the forging of new multidisciplinary middle-ground for memory studies. While mainstream philosophy of mind has largely neglected social aspects of remembering, studies of “collective memory” and “cultural memory” abound in a burgeoning interdisciplinary field spanning sociology, anthropology, history, political theory, and media theory (Bloch, 1998; Kansteiner, 2002; Klein, 2000; Olick, 1999; Wertsch, 2002). We think that such social memory studies are potentially relevant for cognitive science and philosophy, and believe that both psychologists and humanities scholars can contribute directly to better understandings of the relations between broader studies of national or cultural memory and the typical individual or small-group focus of cognitive psychology with its

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