Part IV

Memory in Groups

9 Shared Remembering and Distributed Affect

Varieties of Psychological Interdependence

John Sutton

One significant feature of human life is our psychological interdependence. To greater or lesser extents, and across diverse cultural contexts, our cognitive and affective states are related to those of others around us. We act alongside and share experiences with partners, family members, friends, workmates, and other people with whom we are connected in our daily lives. And as a result, what each of us feels and remembers, what matters to each of us about the present and the past, and the way we imagine and plan for the future, can be influenced by what those others feel, remember, and care about. This occurs in the moment, when my emotions or moods, my decisions or thoughts, are modulated by the actions or reactions, judgments, or evaluations of someone close to me. But it also happens over time, and in many cases over years, decades, or lifetimes. Such interdependence does not mean that we think, remember, or feel the same way about things. In many cases, it matters greatly to me when the emotions or memories of someone I care about differ from my own. Our psychological lives can in certain circumstances be interdependent and mutually influencing, to different degrees and in different ways integrated with each other, whether or not the precise content or style of our thoughts, memories, and feelings happens to match.

This chapter integrates four recent trends in philosophy of memory and philosophy of cognitive science, all addressing such phenomena of psychological interdependence. First, the ways that remembering is typically integrated or entwined with other cognitive and affective processes, with imagining and feeling, are acknowledged and highlighted (Sutton, 2009; Keightley & Pickering, 2012; Goldie, 2012). Second, social aspects of memory are seen as potentially beneficial: other people are not only sources of error or misinformation, but can in certain circumstances support and collaboratively structure the form and content of recall (Campbell, 2008; Sutton, 2008). Third, memory is a test case for claims that cognition can be extended or (better) distributed across an array of heterogeneous cognitive ecologies, spanning neural, bodily, social, and environmental resources (Suttonet al., 2010; Tollefsen, Dale, & Paxton, 2013), and relatedly for ideas about collective intentionality (Michaelian & Sutton, 2017). Fourth, in a

more recent literature on which I focus, emotions too are seen as potentially distributed across body and world as well as brain (Colombetti & Krueger, 2015).

I aim to identify tight and underappreciated links between these four points, especially between the social nature of remembering and the distribution of affective phenomena. Because memory is often in use when it is not explicitly in question, theorists whose primary attention is on another domain may not see just how heavily it is implicated. Just as plausible accounts of decision-making in group agency place demands on mechanisms of group memory to keep track of and use history effectively (Sutton, 2008), so a range of interacting forms of remembering are involved in the phenomena of 'distributed affectivity' (Slaby, 2016). I make this case in Section 2 by picking out four relevant features of distributed affectivity. These are features of interest in their own right that collectively confirm the close links in these contexts between emotion and memory. I then home in, in Section 3, on a specific question about what exactly is shared in shared remembering, in such socially distributed systems: again considering emotion and memory together, I argue that complementary relations between different people are often more significant than convergence or synchrony across interacting individuals.

1 Distributed Affectivity

Some rather abstract philosophical discussions of the metaphysics of extended and distributed cognition risk losing sight of the real-world contexts that motivated these approaches (Hutchins, 1995; Clark, 1997; Michaelian & Sutton, 2013). In contrast, innovative recent work in the field arises from a shift to address *affective* phenomena—emotions, sentiments, moods, and the like—in specific personal and social contexts. If the processes of believing, remembering, and decision-making in certain circumstances spread across neural, bodily, and environmental resources, the same may hold for grieving, loving, and other kinds of feeling. This seems plausible, to many of us, both because emotional and cognitive processes are often tightly entangled, and in considering emotional lives in their own right, unfolding over multiple timescales. As theorists in this field suggest, a case can be made for the distributed nature of many affective phenomena, both occurrent and dispositional, from momentary emotion episodes to sentiments, temperaments, character traits, and moods (Colombetti & Roberts, 2015); I follow them in using the umbrella label 'distributed affectivity' to signal this broad scope (Slaby, 2016; Candiotto, 2016). My exposition of promising strands of recent work follows, in particular, lines of thought developed by Joel Krueger, Giovanna Colombetti, and their colleagues in powerful papers examining distributed affectivity in concrete settings—emotional interactions between parents and infants, depression and grief, music and dancing, and more (Krueger, 2014a, 2015; Varga & Krueger, 2013; Colombetti & Krueger, 2015; Krueger &

Szanto, 2016; Colombetti, 2015, 2017; Colombetti & Roberts, 2015; see also Griffiths & Scarantino, 2009; Stephan, Wilutzky, & Walter, 2014; Mühlhoff, 2015; Greenwood, 2013, 2015; Leon, Szanto, & Zahavi, 2017). After briefly characterizing the approach, I extract four features that together build my case that distributed affectivity also implicates memory, and in particular shared remembering, in surprisingly direct ways.

To make the case for distributed affectivity, Krueger and colleagues focus on the processes of *emotion regulation*. Krueger notes that accounts of emotion regulation in mainstream cognitive, clinical, and social psychology (e.g., Gross, 1998) acknowledge the diverse, often embodied ways in which we can—fallibly but often effectively—redeploy attention, modulate affective response, or shift our appraisal and our experience of emotionally salient events and situations. But over longer timescales we also engage in sustained 'ongoing manipulations' of our worlds that have specifically emotional functions, distributing the mechanisms of emotion regulation across our social, physical, and cultural environments. We design our homes and rooms, our offices or cars, our devices and our networks in part to carry, amplify, or adjust, our emotions. We habitually go to a specific park or café, choose particular clothes or accessories, listen to certain kinds of music, or speak to particular friends or family members, because through repeated, sedimented experience we have built strong affective habits and norms around these external resources (Colombetti & Krueger, 2015; Krueger, 2015). Over time, we thus construct, inhabit, and modify persisting integrated affective systems incorporating both social and environmental resources, involving the kinds of rich iterative coupling that signals genuinely distributed processes.

By offloading, manipulating, and otherwise regulating our emotional lives in these externally looped ways over time, we sometimes access emotions that are richer or subtler than we might otherwise experience, or at least find our affective worlds shaped or transformed differently as a result. Engaging deeply with music, for example, may for some people over time sculpt an 'expanded phenomenological repertoire' in that they thus "gain access to an expanded realm of feeling states and modes of expression largely inaccessible outside of a musical context . . . because music is constituted by expressive dynamics that are more agile, evocative, and nuanced than are their behavioral counterparts" (Krueger, 2014b, p. 209). Parallel affective transformations can develop in *socially* distributed forms of emotion regulation: sometimes we could not feel, or deal with, certain emotion experiences in the absence of particular significant others (Varga & Krueger, 2013).

These arguments for distributed affectivity emerge from and sit most naturally with one particular way of developing the distributed cognition approach. If distributed emotion regulation spans and incorporates neural, bodily, social, technological, and environmental resources, then there are many significant differences across the component parts of the relevant distributed systems. This heterogeneity, as Krueger notes, is a virtue

insofar as such disparate resources, wherever they happen to be located and whatever their formats and properties, have complementary features that in certain circumstances support a capacity to mesh or integrate into larger systems with novel or different properties (Krueger, 2014a, p. 538; cf Greenwood, 2013). I return to this point later: but for now, we have enough of a sketch in place to push on, fleshing out the approach by extracting four features of the phenomena of distributed affectivity.

2 Four Features of Distributed Affectivity

By identifying four key characteristics of distributed affectivity, I build up a richer picture of the phenomena, and demonstrate how thoroughly they involve memory in meeting the demands of keeping track of interactions across integrated affective systems over time.

2.1 Distributed Affectivity Involves Embodied Remembering

We engage in ongoing embodied emotion regulation at a number of levels. Emotion experience involves, and can often be affected by, modulation of the expressive and physiological dimensions of emotion, and by reshaping or just attending to posture or gesture, movement or breath (Krueger, 2015; and on moods Colombetti, 2017). These bodily dimensions of emotion experience, and our ongoing fallible and partial but genuine capacities to access and influence them, are sometimes coupled with environmental settings. It is the embodied feel or comfort of certain rooms or views, pieces of furniture or corners of familiar cafes, like the one in which I write these words, which grounds emotional ease. In contrast, negotiating unfamiliar places, devices, or situations often involves jarring bodily unease as well as, or as the basis of, unpleasant emotions and uncertain cognitions.

An initial sense in which distributed affectivity involves embodied remembering is shown by such patterns of bodily and affective responses over time. As phenomenological philosophers argue, the smooth or disrupted feel of being in the world, the fluent or dysfluent nature of embodied coping, or the interactional fit between body and setting all involve holistic, pre-reflective history-dependent processes implicating the bodily sedimentation of experience (Behnke, 1997; Casey, 2000; Fuchs, 2012). Such lived associations, intuitive responses, and affective habits of engagement with the world implicate forms of embodied remembering much more flexible and idiosyncratic than reflexes.

Although, as I will argue, the bodily dimensions of distributed affectivity are not restricted to these more tacit forms of embodied knowhow, we can already see that these distributed emotion systems are fundamentally diachronic, and that embodied memory is one key basis by which history animates emotion experience. The notions of 'embodied' and 'procedural' remembering cover a wide range of phenomena, and in using them we need

to avoid any implication that other forms of remembering are somehow *not* embodied (Sheets-Johnstone, 2009; Sutton & Williamson, 2014). Further, in noting the centrality of embodied remembering to distributed affectivity, I am not suggesting that specific past embodied and emotional experience is carried 'in' the body or 'stored' in discrete form. Its effects and influences are typically more cumulative and holistic, and (unlike at least core forms of personal or episodic remembering) need not be subjectively attributable *to* the past: from our embedded point of view, embodied emotion experience just takes the forms it does without directing us to or being *about* its sources in the past.

The embodied aspects of distributed affectivity, finally, are not exclusively individual or bounded. This is perhaps clearest in considering intimate relationships and close friendships, where touch, embodied copresence, and joint activity can mediate or constitute love or trust. But other small groups have characteristic bodily affective styles too (Slaby, 2016). The fact that people have engaged in certain practices *together* many times before can shape how it feels to do so together again. Again, socially as well as environmentally distributed remembering is tightly interanimated with embodied interaction and embodied memory.

2.2 Distributed Affectivity Involves Active Self-Scaffolding

Some of the processes of distributed affectivity operate pre-reflectively, forming a world of embodied emotional experience that can be taken for granted until it is disrupted. But these more tacit or sedimented characteristics by no means exhaust the phenomena. As Krueger and his colleagues argue, both individually and collectively we engage in regular and insistent *active* modification of affective infrastructures. We redesign our desks, repack our bags, rework our habits, reconsider our friendships, rethink our schedules. When we puzzle over, seek advice on, or google for new ways of doing things, we do so not merely for instrumental reasons and to improve efficiency or productivity, but also so that things will *feel* better when we turn on our devices, enter our favorite rooms, or fit an exercise session into our day. Adjusting daily practices and re-engineering features of our familiar environments are two central forms of the active self-scaffolding of distributed affect. Just as our first-order selection of certain artifacts or pieces of music or actions is a mundane means of emotional self-stimulation, as we select and manipulate situations 'to modulate our emotional phenomenology,' so we also engage over time in sustained second-order reworking of our environments that they "loop back onto us in complex ways and shape what we feel and how we feel it." By thus setting up features of our familiar inhabited world, we can use them over time "to grant access to kinds of experiences we couldn't otherwise have without their regulatory input" (Krueger, 2015, p. 266).

This kind of 'self-scaffolding' (Bickhard, 2005) has been plausibly identified as a key sign of extended or distributed cognition: Colombetti and

Roberts (2015), for example, base their case for fully distributed affectivity on cases in which "a system is coupled to an environmental item through which the system loops some kind of self-stimulating activity, and this self-stimulating activity in particular has been set in place and maintained over time" to play specific affective roles within the larger system (compare Clark, 2005). Such phenomena challenge any neat distinction between active and passive emotional experiences in the way that ideas of extended and distributed cognition should. On the one hand, our affective responses are elicited or transformed by interacting with certain features of our environments. On the other hand, we have often actively and iteratively created, modified, cared for, assessed, and reassessed just those features and just those interactions.

Such active self-scaffolding imposes further demands on memory. As individuals or in small groups, we must over time track the operations of our artifacts, routines, and social interactions, identifying and evaluating patterns of affective response. Given what we know of memory's constructive nature, it is just as well that such tracking need not be anything like complete: the point is that we are typically not starting from scratch in designing, or working out how to operate within our emotional worlds, and are thus leaning on our abilities to recall at least some prior relevant interactions. A number of forms of memory are involved: both personal and embodied remembering are often needed to make adjustments within a distributed affective system on the basis of past experience.

2.3 Distributed Affectivity Is Diachronic

The phenomena of distributed affectivity are typically temporally extended. The emotions or moods in question are not isolated token events existing only at or for a moment: they take time. This is true of occurrent, episode-like emotion events and experiences with a unique qualitative feel (Colombetti & Roberts, 2015, pp. 1256–1260), as well as of enduring emotional dispositions. In most cases at least, when grieving and despairing, being angry and being joyful are distributed across bodily, environmental, and social as well as neural resources, they are complex or systemic phenomena incorporating disparate states and processes that endure over time. And at longer timescales, the kind of iterative scaffolding of affective environments I described previously involves cycles of mutual modulation as embodied subjects adjust their emotional worlds and in turn dynamically attune to the worlds they thereby change.

In three respects, the point that distributed affectivity is diachronic could be pushed in more metaphysically ambitious directions. In each case, what I say here is compatible with the stronger view, but does not require it: the dialectical aim is to make the case for distributed affectivity as broadly acceptable as possible. First, I need not argue that there *cannot* be purely synchronic or momentary emotions, only that core cases of distributed affect

do not take that form. Second, I need not take such affective phenomena to be *essentially* diachronic, in the way that Peter Goldie treats grief as *essentially* a temporally extended process (2011, especially 125–6, 137). Finally, I need not adopt an exclusively diachronic approach to *all* extended and distributed cognition in general, as in Michael Kirchhoff's attack on the possibility of any merely synchronic cases of cognitive extension (Kirchhoff, 2015). Again, the point is just that the bulk of plausible cases that can be realistically seen as exemplifying distributed affectivity are temporally extended.

This suffices to give memory a key role in grounding and supporting the ways in which we design, coopt, lean on, and adjust our distributed emotion-regulation systems. Our bodily responses in affectively salient situations are forms of embodied remembering. The tracking of particular interactions is episodic remembering, typically embedded in the fuller life narratives or themes that structure autobiographical memory. Semantic memory in the form of our background knowledge, both general and personally relevant, informs our active self-scaffolding. Another pervasive form of distributed affectivity involves prospective remembering, in that emotions and moods are often relevant as we track and revise our intentions for future actions, as well as in thinking about the future more generally.

But crucially, distributed affectivity does not merely implicate all these distinct forms of memory separately. Past experiences typically shape emotional ecologies and responses in many ways at once. By first distinguishing among these forms of remembering, we can then focus inquiry on the many ways in which they interact or interanimate. When I feel pleasure or emotional comfort at returning to a much-loved place or room, for example, I may be remembering specific experiences there, feeling an embodied ease that derives from many repeated visits to the place, enjoying vivid flashes of sensory imagery or memory, and drawing on or updating the beliefs or general attitudes that have formed over years. Multiple and often multimodal forms of remembering, in other words, may overlap and entwine when my emotional experience loops out through the world in situations like this. History permeates the memory systems and processes of brain, body, and world in interlocking ways.

2.4 Distributed Affectivity Involves Shared Remembering

The final feature of distributed affectivity for consideration here falls naturally out of the discussion, and occupies the rest of this chapter. This is the core point that distributed affectivity is deeply entwined with memory: both individual memory in all of its forms, as in many of the cases discussed previously, and shared remembering, especially or in the strongest cases shared remembering of shared experiences or joint actions (Sutton, 2008). Another direct approach to this point can be drawn from Colombetti and Krueger's discussion (2015) of trust as one key interpersonal affective

scaffold. They note that in this realm trust in a resource (an artifact or another person) relates not to its reliability in telling the truth about the world, as Clark and Chalmers (1998) and Sterelny (2010) stress for the cognitive realm. Rather, trust is confidence in the reliability of certain effects on our affective states: we may have, for example, an "expectation that others will have a certain modulatory impact on our affective life" (2015, pp. 1162, 1166). Colombetti and Krueger continue:

> Part of the reason we experience intimacy with family and friends is because we know what sort of affective feedback we can expect from them. For example, based on previous interactions, we know which member of the family to turn to for the affirmation needed to elevate our mood, or which friend to call if we need a good laugh.
>
> (2015, p. 1167)

This catches some of the subtle ways we navigate the social world. Note how centrally memory is implicated: we carry, and act on the basis of, the history of these 'previous interactions.' Typically, this is all taken for granted: memory is in use though not explicitly in question, though when things change or expectations are thwarted we may recall the past events and experiences that gave rise to those expectations, perhaps re-evaluating them on the fly as we go. Again, a number of interacting timescales can be in play at once: long-established narratives about family members or friends, which can endure for and beyond individual lifetimes, both shape and are shaped by our affective assessments of exchanges operating over days and weeks, within the standard space of interpersonal reasons, which themselves are grounded in the faster processes of alignment and embodied interaction that may escape awareness (Bietti & Sutton, 2015).

Crucially, these are typically *mutual* relations: our family members or friends remember our own patterns of response and the shared history between us, just as we do ourselves: "we feel at home in these relationships because we have, to a certain extent, individualized them . . . we thus play an active role in shaping the way that our interpersonal relationships function as reliable affective scaffoldings" (Colombetti & Krueger, 2015, p. 1170). In small groups of this kind, each person tends to know what each other person typically feels and how they may respond in particular circumstances, and how those responses are in turn likely to affect others. This is the affective dimension of what Wegner (1987) called a 'transactive memory system,' in which through long experience and effective communication each member can map and access the distinctive memories of the other members as needed. Emotional interaction influences distributed memory processes, and shared remembering influences distributed affect. This opens up a range of fascinating and under-researched issues: the rest of this chapter takes some early steps.

3 Convergence or Complementarity? What Is Shared in Distributed Systems?

I have been discussing the distribution of emotions and memories over more than one person, and using the language of 'sharing' to describe the relation of group members to particular emotions or memories. But what does it mean to 'share' cognitive or affective states or processes in these contexts?

Just as there are different ways in which people can share material items, so psychological sharing comes in many forms. It is easier to get a grip on the notion of shared perceptual experiences. When two people are jointly attending to the same object, they can establish and maintain a perceptual common ground. Even though you and I now look at the candle on the table from different visuospatial perspectives, we are looking at it *together*, and each of us knows this: such experiences are joint in that they make knowledge available not only about the external world, but also about each other's epistemic state (Seemann, 2011, 2017). For different reasons, in memory and emotion the same kind of relation to present environmental affordances may be missing. Reminiscing or feeling 'jointly' are therefore likely to be less common phenomena, and to take considerably longer to become established developmentally (Hoerl & McCormack, 2005).

Here I critically consider one approach to these issues for a putative account of shared remembering and distributed affectivity. This is the idea, prevalent in some research on both memory and emotion, that the primary or most significant form of interdependence—the best 'mark' of genuinely shared remembering or feeling—is convergence or similarity across the members of the group in question. For memories or emotions to be genuinely distributed across two or more people, do these people need to be remembering or feeling the same things, in more or less the same ways? To put the issue another way, we want to know what has to be true of the individual members of a dyad or small group in which affectivity (or memory) is distributed. Or, what is likely to happen to those members as the distributed interactions continue?

The first approach I consider treats convergence as the central form of sharing in memory and emotion. Then I pan back to theoretical considerations from the debate on distributed and extended cognition, suggesting that reason to doubt convergence can be found in the independently plausible 'second-wave' approach that stresses the complementarity of heterogeneous resources in distributed cognitive systems. I put that line of thought to work in arguing that asymmetric forms of interdependence are more characteristic of and more important in shared remembering and distributed affectivity.

3.1 Convergence, Synchrony, and Merger

To take memory first, it is sometimes claimed that *convergence* is the signature of a genuinely collective process. For the larger-scale forms of

collective memory studied in the social sciences, a classic statement of this view is by Peter Novick. Aiming analytically "to separate ephemeral and relatively inconsequential memories from those that endure and shape consciousness," and contrasting memory sharply with historical consciousness, Novick writes that "collective memory simplifies; sees events from a single, committed perspective; is impatient with ambiguities of any kind; reduces events to mythic archetypes" (Novick, 1999, p. 4). In cognitive psychology, a powerful strand of the recent move to take collective and collaborative memory seriously treats convergence as a necessary condition: for Hirst and Manier, "a collective memory can only be said to form if a community *converges* on a shared rendering" of the past (2008, 193). When Hirst notes that a "common understanding of the past" can arise when social influences sculpt "our recollections so that we all remember the same details," this point is the only *beneficial* effect of social influences mentioned in a recent popular article on "ways that other people can warp your memory" (Robson, 2016). Hirst's flourishing research program studies "the emergence of shared mnemonic representations that preserve group membership and group identity," seeking to identify ways that "conversational remembering leads to increased mnemonic convergence" (Coman & Hirst, 2015; Yamashiro & Hirst, 2014).

Likewise, in considering again recent research on shared and distributed emotion, we find a focus on the construction and maintenance of affective *synchrony* across individuals. This is due in part to reliance on studies of coordinated joint actions, where synchronous movement or behavior, or the induction of *entrainment* across interacting individuals "on multiple levels from physiology to syntax," has repeatedly been shown to have systematic and often positive effects on cognition and emotion in groups (von Zimmerman & Richardson, 2016).

The concept of synchrony is used in a number of ways in these literatures. In a narrower usage, synchronic interactions are *contrasted* with cases of complementary interactions in which people realize a shared goal by each engaging in *different* actions (Dale et al., 2013; Skewes et al., 2015). In this usage, synchrony is defined as involving "the matching of actions in time with others" (Mogan, Fischer, & Bulbulia, 2017), and is "a specific case of coordination" in which interacting individuals "tend to exhibit the same behavior at the same time" (Paxton & Dale, 2017). Alternatively, a broader notion of synchrony can be invoked to encompass more diverse forms of coordination or interdependence. This is what the theorists of distributed affectivity have in mind, for example, when referring to phenomena of "early dyadic parent—infant affective coordination" that are "characterized by the core feature of *synchrony*" (Varga & Krueger, 2013, pp. 272–273). Arguing that effective or disrupted early synchronic interaction between infants and caregivers constitutes a form of "dyadically distributed emotion regulation" with long-lasting cognitive and affective results, Varga and Krueger suggest that "synchrony in distributed emotion regulation" is also found in some

adult relationships. Also citing research on joint action, they point to forms of bodily and emotional interactional synchrony both in relations between therapist and patient and in intimate romantic relationships (2013, 286–7).

As long as the full range of phenomena of interdependence across these domains is acknowledged, the choice of terminology for the different varieties need not cause conflict. My preference is to reserve 'synchrony' for cases closer to convergence, matching, or identity, and thus to see it as just one specific kind of coordination. We want to distinguish different forms of interdependence, and to treat them differently across the domains of action, emotion, and memory for example, to ask novel questions about relations between these distinct forms and across these domains. There are indeed cases in which people become more alike, at least in certain respects, in certain contexts. Whether converging on a shared rendering of the past, moving together in time, coregulating positive affect, or incorporating aspects of a lover's identity (cf Hofstadter, 2007, pp. 233–235), people experience powerful forms of togetherness. None of what follows is intended to deny or belittle such phenomena. But convergence or synchrony, understood in this narrower sense, is not the only or the most important way that either memories or emotions are shared. To prepare the specific point that there are other kinds of cognitive and affective interdependence in these domains, I first return briefly to the larger case for distributed cognition and affect.

3.2 Complementarity

I noted previously that theorists of distributed affectivity acknowledge the diversity of the resources that we incorporate into larger systems of mood-management and emotion-regulation. Music, clothes, rooms, cafes, habits, devices, and so on operate in ways unlike the neural processes that play their own unique and essential roles in our affective lives. The formats, mechanisms, and rates of change of these external system components differ dramatically from those of the in-skull components. Similarity between internal and external parts of the boundary-spanning affective system is not required: rather, what matters is that and how the *relations* and *interactions* between these *disparate* elements "yield integrated larger systems" (Clark, 1998, p. 99; 1997, p. 220; Sutton, 2010).

This stress on the *complementarity* of inner and outer resources is a different emphasis in or route toward distributed cognition and affect from the idea that we need to establish *parity* between inner and outer resources. What's important is not any intuition about similarities between our internal resources and relevant external systems, but the nature and intensity of integration across these heterogeneous resources: complementarity "thus subsumes and takes precedence over parity" (Sutton, 2010, p. 206; Sutton et al., 2010, pp. 524–527; cf Krueger, 2014a).

To assess *which* interactions between complementary and disparate internal and external resources might be signs of distributed remembering

or affectivity, we study the specific relations in each case. The relevant dimensions, depending on context and explanatory project, may include Clark and Chalmers' original criteria of trust and glue (1998), and perhaps additional dimensions relating to the intensity, uniqueness, and form of the interactive coupling in question (Wilson & Clark, 2009; Sterelny, 2010; Heersmink, 2015). Such dimensions are, crucially, matters of degree, which is just what we want. Both memory and affectivity are in practice *more* or *less* distributed: it depends. We want to construct a multidimensional space for enquiry into such more-or-less distributed systems, rather than seeking a sharp distinction: we want to examine, within the same framework, cases of more shielded or insulated memory and emotion as well as those that are more distributed (Sutton et al., 2010, 534–8).

When we are dealing not with relations between agents and artifacts, but as we have been throughout this chapter with cases of putatively *socially* distributed cognition or emotion, we might wonder if a tweaked "social parity principle" might operate, as suggested in productive work by Tollefsen and others (Tollefsen, 2006; Theiner, 2013; cf Gallagher & Crisafi, 2009). The point would be that when the relevant 'external resource' is another person rather than an artifact, there are no deep differences of kind, mechanism, and process between the parts of the distributed system: my partner and my therapist are, fortunately, more like me in relevant respects than my smartphone or my handbag. This might then seem to support the idea that convergence, synchrony, or even merger is the right model for distributed affectivity and shared remembering.

I think that is not the right lesson to take, and that even in the case of socially distributed cognition, complementarity rather than parity is the right route, the more perfect wave. Looking in turn at action, affect, and memory, I can make the case that convergence is only one form of or model for cognitive-affective interdependence, and in many ways not the most relevant or interesting one. The general response is not original. In the case of emotion, for example, Rainer Mühlhoff argues in developing the notion of 'affective resonance' that in rich face-to-face social interaction "the interactants' behaviors and affective experiences may not necessarily resemble each other, but yet they are a jointly created dynamic, shaped within the relational interplay" (2015, 2): instead, as he puts it, resonance "is less about similarity in behavior than about co-constitution of (potentially even divergent) behavior within a joint dynamic interplay" (2015, 14). I want to underline and extend just this line of thought to the range of domains we have been considering.

3.3 Mesh and Asymmetric Interdependence

Many joint actions require different contributions from the people working together. Just as a smooth and flowing conversation can occur with participants taking different roles and contributing quite different numbers and

lengths of conversational turns, so many physical activities and cultural practices involve different behavior from each participant across extended temporal sequences (Böckler, Knoblich, & Sebanz, 2010; Dale et al., 2013). In most genres of music and sport, successful or interesting performance arises when band or team members do their own thing—exercise their own skill set—in ways that best complement what everyone else is doing (Sutton & Tribble, 2014; Williamson & Sutton, 2014). At higher levels there is much that the participants share—performance goals, aesthetic or strategic plans and visions, for example—but in many complex actions the way that individuals' subplans will best 'mesh,' as Michael Bratman puts it, will *not* involve them doing the same things as each other (Bratman, 2013; Pacherie, 2014). Synchrony does not exhaust the forms of coordination in joint action. Nor do kinds of entrainment and alignment in which some formally specifiable dynamic drives the interlocking actions of two or more participants. Especially when we look at connections across distinctive timescales of joint action, we find a range of richly collaborative processes that do not involve such simple or literal forms of coordination (Bietti & Sutton, 2015).

Turning from action to affect, likewise, there is no reason to think that the social distribution of emotion must involve similarity, synchrony, or symmetry across interacting participants. As Krueger himself underlines elsewhere, rich affective interdependence between infant and caregiver may in fact rest on the *differences* between the two. Even when their actions are entrained within or across modalities in more simple ways, the adult participant's emotional states and processes complement or mesh with, rather than matching or converging with those of the infant (Krueger, 2013; Greenwood, 2013). Likewise in psychotherapy: Varga and Krueger are aware that capacity in the therapeutic situation or system for "dyadically distributed emotional regulation and interactive repair" (2013, 287) may depend precisely on the therapist's ability to maintain and manage quite *different* affective states and processes from those of the patient. Even when the therapist deploys certain forms of synchronous behavioral matching and nonverbal convergence as part of the process, she is simultaneously reflecting on and working with bodily, affective, and cognitive responses that may diverge dramatically (for a striking example see Straker 2007). Yes, the therapist must be richly and subtly responsive to the patient, maintaining an intense kind of cognitive-affective interdependence or coupling in which what each party says, does, and feels makes an ongoing and dynamically sensitive difference to what the other says, does, and feels. But the medium of such interdependence need not be convergence.

We can make the next link, from emotion to memory again, by considering intimate relations between friends or lovers. Douglas Hofstadter considers the utility of thinking of a close couple as "a higher-order individual made of two ordinary individuals" (2007, 222), and points to the iterative, intensifying, ongoing ways in which each partner can come to 'think with' some of the other's attitudes, tastes, beliefs, and values, and even adopt some of

the other's memories vicariously as their own. But he is not suggesting that this involves merger, or denying the residual and irretrievable differences or gulfs between two embodied selves. Of course some relationships involve more codependence than others: but this can take many different forms. There is an unresolved empirical debate in work on life satisfaction in couples between 'emotional convergence theory,' which suggests that similarity between partners predicts long-term satisfaction, and approaches based on 'complementarity,' which "suggest that the longer partners are together, the more dissimilar they become" (Schade et al., 2016). The kinds of 'high dependency' or 'merger' in relationships that some clinical psychologists see as one risk factor for 'complicated' grief after bereavement (Johnson et al., 2007) are sometimes seen as polar opposites of 'independence' (Maccallum & Bryant, 2013, p. 719). But cognitive and affective interdependence does not have to be merger, and need not exclude substantial independence. We can see this by returning to the notion of transactive memory (Wegner, 1987; Gupta & Hollingshead, 2010).

Different close relationships, whether among intimate partners or in experienced work teams, can involve quite different patterns or distributions of information. In the case of memories, sometimes this first-order spread will involve high differentiation or specialization. In some couples, one partner remembers all about the car or all the events that happened on holiday, while the other remembers everything important about the house, or about the grandchildren; in others, there are no particular areas of separate expertise and the whole shared history is more equally sampled by both partners. In some work teams, a division of labor is rigorously enforced so that there is no doubling-up or redundancy: in others, overlapping expertise is encouraged, and it is easier for members to fill in for each other. What matters—what makes either kind of system a genuinely *transactive* memory system—is not the particular way in which the first-order memories are distributed, but rather the shared understanding among all parties of that pattern of distribution, supporting mutual access to relevant information as required.

Significant similarity, overlap, or convergence in memory is therefore only one limiting case of transactive or shared memory. More differentiated memory systems are both common and effective. As Wegner stresses, there is an intrinsic instability or volatility to differentiated or specialized organizations of memory: if the right kinds of labelling, accessing, and retrieval systems are in place, some information that was once held by only one party will as required be made available to all, in the processes driving the dynamics of remembering in the group. But relatively differentiated categories and skills can remain in place, if for example the dyad or group has a clear shared identity and shared goals, engages in a range of collaborative actions, and when the members are aware of the group's range and internal heterogeneity.

There will be definite limits to this heterogeneity, in both memory and emotion. If there is extreme disagreement about the nature of certain past events, for example, or about their emotional significance, it is unlikely that

we are dealing with an ongoing group in which the notions of distributed memory or affectivity really get a grip. But within those limits, there is no reason to accept that either *convergence* or *agreement* is essential. An intimate and flourishing romantic couple may have differing accounts of their first meetings and of the emotionally significant features of their early days together: but as long as they share higher-order understanding and commitment, the fact that their renderings of the salient past are not precisely shared in terms of content need not matter. Likewise at larger levels, a group can encompass and tolerate—within limits—a range of distinct attitudes to past events, with neither simplification nor convergence essential for the continuing existence of the broader collective or distributed memory system.

In human beings, socially distributed cognitive and affective systems are typically not cases of 'swarm intelligence,' in which the aggregative interaction of more or less homogeneous component elements, each following relatively simple procedures, produces emergent larger-scale outcomes (Sutton & Tribble, 2014). First, the members of such human groups are quite different from each other in psychologically relevant respects, bringing distinctive properties, capacities, and skills to the interactive situation. Second, what the individual members do in their groups is very often considerably more complicated and differentiated, and more directly reliant on shared history, than the typically implicit responses of undifferentiated flocking or swarming units. Third, some of the interactive processes in question can be more mindful, open to personal and interpersonal influence, sometimes explicitly involving active and self-reflective consideration and reconsideration of the nature of the group and its strategies, memories, and affective evaluations.

I have argued, first, that distributed affectivity involves shared remembering in a number of forms and for a number of reasons. In going on to assess what exactly is 'shared' in each case, I have suggested that what is 'shared' can remain at a level higher than that of either process or content. Rich cognitive and affective interdependence can take the form of asymmetric coregulation without similarity or symmetry. Doing, feeling, thinking, or remembering the same thing as each other is only one of many ways in which we mutually influence each other. Shared strategies may specifically leave these differences in place, or even encourage and exacerbate them: effective, successful, pleasurable interdependence between partners, friends, or colleagues may often involve the complementary meshing of asymmetric capacities, skills, memories, and emotions. In this chapter I hope to have pointed to some issues about the relations between cognitive and affective interdependence, and about the range of ways in which we can share memories and emotions, which are worth further theoretical, experimental, and ethnographic investigation.

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References

Behnke, E. A. (1997). Ghost gestures: Phenomenological investigations of bodily micromovements and their intercorporeal implications. *Human Studies*, *20*(2), 181–201.

Bickhard, M. H. (2005). Functional scaffolding and self-scaffolding. *New Ideas in Psychology*, *23*, 166–173.

Bietti, L. M., & Sutton, J. (2015). Interacting to remember at multiple timescales: Coordination, collaboration, cooperation and culture in joint remembering. *Interaction Studies*, *16*(3), 419–450.

Böckler, A., Knoblich, G., & Sebanz, N. (2010). Socializing cognition. In B. Glatzeder (Ed.), *Towards a theory of thinking* (pp. 233–250). Springer: Berlin.

Bratman, M. E. (2013). *Shared agency: A planning theory of acting together*. Oxford: Oxford University Press.

Campbell, S. (2008). The second voice. *Memory Studies*, *1*(1), 41–48.

Candiotto, L. (2016). Extended affectivity as the cognition of primary intersubjectivity. *Phenomenology and Mind*, *11*, 232–241.

Casey, E. (2000). The ghost of embodiment: On bodily habitudes and schemata. In D. Welton (Ed.), *Body and flesh* (pp. 207–225). Oxford: Blackwell.

Clark, A. (1997). *Being there: Putting brain, body, and world together again*. Cambridge, MA: MIT Press.

Clark, A. (1998). Author's response: Review symposium on being there. *Metascience*, *7*, 95–103.

Clark, A. (2005). Word, niche, and super-niche: How language makes minds matter more. *Theoria*, *20*(3), 255–268.

Clark, A., & Chalmers, D. (1998). The extended mind. *Analysis*, *58*(1), 7–19.

Colombetti, G. (2015). Enactive affectivity, extended. *Topoi*, *36*(3), 1–11.

Colombetti, G. (2017). The embodied and situated nature of moods. *Philosophia*, 1–15.

Colombetti, G., & Krueger, J. (2015). Scaffoldings of the affective mind. *Philosophical Psychology*, *28*(8), 1157–1176.

Colombetti, G., & Roberts, T. (2015). Extending the extended mind: The case for extended affectivity. *Philosophical Studies*, *172*(5), 1243–1263.

Coman, A., & Hirst, W. (2015). Social identity and socially shared retrieval-induced forgetting: The effects of group membership. *Journal of Experimental Psychology: General*, *144*(4), 717–722.

Dale, R., Fusaroli, R., Håkonsson, D. D., Healey, P., Mønster, D., . . . Tylén, K. (2013). Beyond synchrony: Complementarity and asynchrony in joint action. *Proceedings of the 35th Annual Meeting of the Cognitive Science Society*, 79–80.

Fuchs, T. (2012). The phenomenology of body memory. In S. C. Koch, T. Fuchs, M. Summa, & C. Müller (Eds.), *Body memory, metaphor and movement* (pp. 9–22). Amsterdam: John Benjamins.

Gallagher, S., & Crisafi, A. (2009). Mental institutions. *Topoi*, *28*(1), 45–51.

Goldie, P. (2011). Grief: A narrative account. *Ratio*, *24*(2), 119–137.

Goldie, P. (2012). *The mess inside: Narrative, emotion, and the human mind*. Oxford: Oxford University Press.

Greenwood, J. (2013). Contingent transcranialism and deep functional cognitive integration: The case of human emotional ontogenesis. *Philosophical Psychology*, *26*(3), 420–436.

Greenwood, J. (2015). *Becoming human: The ontogenesis, metaphysics, and expression of human emotionality*. Cambridge, MA: MIT Press.

Griffiths, P., & Scarantino, A. (2009). Emotions in the wild. In M. Aydede & P. Robbins (Eds.), *The Cambridge handbook of situated cognition* (pp. 437–453). Cambridge: Cambridge University Press.

Gross, J. J. (1998). The emerging field of emotion regulation: An integrative review. *Review of General Psychology*, *2*(3), 271–299.

Gupta, N., & Hollingshead, A. B. (2010). Differentiated versus integrated transactive memory effectiveness: It depends on the task. *Group Dynamics: Theory, Research, and Practice*, *14*(4), 384–398.

Heersmink, R. (2015). Dimensions of integration in embedded and extended cognitive systems. *Phenomenology and the Cognitive Sciences*, *14*(3), 577–598.

Hirst, W., & Manier, D. (2008). Towards a psychology of collective memory. *Memory*, *16*(3), 183–200.

Hoerl, C., & McCormack, T. (2005). Joint reminiscing as joint attention to the past. In N. Eilan, C. Hoerl, T. McCormack, & J. Roessler (Eds.), *Joint attention, communication, and other minds: Issues in philosophy and psychology* (pp. 260–286). Oxford: Oxford University Press.

Hofstadter, D. (2007). *I am a strange loop*. New York: Basic Books.

Hutchins, E. (1995). *Cognition in the wild*. Cambridge, MA: MIT Press.

Johnson, J. G., Zhang, B., Greer, J. A., & Prigerson, H. G. (2007). Parental control, partner dependency, and complicated grief among widowed adults in the community. *Journal of Nervous and Mental Disease*, *195*(1), 26–30.

Keightley, E., & Pickering, M. (2012). *The mnemonic imagination*. London: Palgrave Macmillan.

Kirchhoff, M. D. (2015). Extended cognition and the causal-constitutive fallacy: In search for a diachronic and dynamical conception of constitution. *Philosophy and Phenomenological Research*, *90*(2), 320–360.

Krueger, J. (2013). Ontogenesis of the socially extended mind. *Cognitive Systems Research*, *25–26*, 40–46.

Krueger, J. (2014a). Varieties of extended emotions. *Phenomenology and the Cognitive Sciences*, *13*(4), 533–555.

Krueger, J. (2014b). Musical manipulations and the emotionally extended mind. *Empirical Musicology Review*, *9*(3–4), 208–212.

Krueger, J. (2015). The affective "we": Self-regulation and shared emotions. In S. Thomas & M. Dermot (Eds.), *The phenomenology of sociality: Discovering the "We"* (pp. 263–280). London: Routledge.

Krueger, J., & Szanto, T. (2016). Extended emotions. *Philosophy Compass*, *11*(12), 863–878.

Leon, F., Szanto, T., & Zahavi, D. (2017). Emotional sharing and the extended mind. *Synthese*.

Maccallum, F., &. Bryant, R. A. (2013). A cognitive attachment model of prolonged grief: Integrating attachments, memory, and identity. *Clinical Psychology Review*, *33*(6), 713–727.

Michaelian, K., & Sutton, J. (2013). Distributed cognition and memory research: History and current directions. *Review of Philosophy and Psychology*, *4*(1), 1–24.

Michaelian, K., & Sutton, J. (2017). Collective memory. In K. Ludwig & M. Jankovic (Eds.), *The Routledge handbook of collective intentionality* (pp. 140–150). London: Routledge.

Mogan, R., Fischer, R., & Bulbulia, J. A. (2017). To be in synchrony or not? A meta-analysis of synchrony's effects on behavior, perception, cognition and affect. *Journal of Experimental Social Psychology*, *72*, 13–20.

Mühlhoff, R. (2015). Affective resonance and social interaction. *Phenomenology and the Cognitive Sciences*, *14*(4), 1001–1019.

Novick, P. (1999). *The Holocaust in American life*. New York: Houghton Mifflin Harcourt.

Pacherie, E. (2014). How does it feel to act together? *Phenomenology and the Cognitive Sciences*, *13*(1), 25–46.

Paxton, A., & Dale, R. (2017). Interpersonal movement synchrony responds to high- and low-level conversational constraints. *Frontiers in Psychology*, *8*(1135).

Robson, D. (2016, September 20). Four ways that other people can warp your memory. *BBC Future*. Retrieved from www.bbc.com/future/story/20160920-four-ways-that-other-people-can-warp-your-memory

Schade, H. M., Hülür, G., Infurna, F. J., Hoppmann, C. A., & Gerstorf, D. (2016). Partner dissimilarity in life satisfaction: Stability and change, correlates, and outcomes. *Psychology and Aging*, *31*(4), 327–339.

Seemann, A. (2011). The role of joint experience in historical narratives. *Journal of the Philosophy of History*, *5*(2), 201–229.

Seemann, A. (2017). Reminiscing together: Joint experiences, epistemic groups, and sense of self. *Synthese*, 1–16.

Sheets-Johnstone, M. (2009). Animation: The fundamental, essential, and properly descriptive concept. *Continental Philosophy Review*, *42*, 375–400.

Skewes, J. C., Skewes, L., Michael, J., & Konvalinka, I. (2015). Synchronised and complementary coordination mechanisms in an asymmetric joint aiming task. *Experimental Brain Research*, *233*, 551–565.

Slaby, J. (2016). Mind invasion: Situated affectivity and the corporate life hack. *Frontiers in Psychology*, *7*.

Stephan, A., Walter, S., & Wilutzky, W. (2014). Emotions beyond brain and body. *Philosophical Psychology*, *27*(1), 65–81.

Sterelny, K. (2010). Minds: Extended or scaffolded*? Phenomenology and the Cognitive Sciences*, *9*(4), 465–481.

Straker, G. (2007). A crisis in the subjectivity of the analyst: The trauma of morality. *Psychoanalytic Dialogues*, *17*(2), 153–164.

Sutton, J. (2008). Between individual and collective memory: Coordination, interaction, distribution. *Social Research*, *75*(1), 23–48.

Sutton, J. (2009). Looking beyond memory studies: Comparisons and integrations. *Memory Studies*, *2*(3), 299–302.

Sutton, J. (2010). Exograms and interdisciplinarity: History, the extended mind, and the civilizing process. In M. Richard (Ed.), *The extended mind* (pp. 189–225). Cambridge, MA: MIT Press.

Sutton, J., Harris, C. B., Keil, Paul, G., & Barnier, A. J. (2010). The psychology of memory, extended cognition, and socially distributed remembering. *Phenomenology and the Cognitive Sciences*, *9*(4), 521–560.

Sutton, J., & Tribble, E. B. (2014). The creation of space: Narrative strategies, group agency, and skill in Lloyd Jones's *The Book of Fame*. In C. Danta & H. Groth (Eds.), *Mindful aesthetics: Literature and the sciences of mind* (pp. 141–160). London: Bloomsbury/ Continuum.

Sutton, J., & Williamson, K. (2014). Embodied remembering. In L. Shapiro (Ed.), *The Routledge handbook of embodied cognition* (pp. 315–325). London: Routledge.

Theiner, G. (2013). Onwards and upwards with the extended mind: From scaffolding individual cognition to scaffolded group cognition. In L. Caporael, J. Griesemer, & W. Wimsatt (Eds.), *Developing scaffolds in evolution, culture, and cognition* (pp. 191–208). Cambridge, MA: MIT Press.

Tollefsen, D. P. (2006). From extended mind to collective mind. *Cognitive Systems Research*, *7*(2), 140–150.

Tollefsen, D. P., Dale, R., & Paxton, A. (2013). Alignment, transactive memory, and collective cognitive systems. *Review of Philosophy and Psychology*, *4*(1), 49–64.

Varga, S., & Krueger, J. (2013). Background emotions, proximity and distributed emotion regulation. *Review of Philosophy and Psychology*, *4*(2), 271–292.

von Zimmermann, J., & Richardson, D. C. (2016). Verbal synchrony and action dynamics in large groups. *Frontiers in Psychology*, *7*.

Wegner, D. M. (1987). Transactive memory: A contemporary analysis of the group mind. In B. Mullen & G. R. Goethals (Eds.), *Theories of group behavior* (pp. 185–208). New York: Springer.

Williamson, K., & Sutton, J. (2014). Embodied collaboration in small groups. In C. T. Wolfe (Ed.), *Brain theory: Essays in critical neurophilosophy* (pp. 107–133). London: Palgrave Macmillan.

Wilson, R. A., & Clark, A. (2009). How to situate cognition: Letting nature take its course. In P. Robbins & M. Aydede (Eds.), *The Cambridge handbook of situated cognition* (pp. 55–77). Cambridge: Cambridge University Press.

Yamashiro, J. K., & Hirst, W. (2014). Mnemonic convergence in a social network: Collective memory and extended influence. *Journal of Applied Research in Memory and Cognition*, *3*(4), 272–279.