# Memory in the wild: Life space, setting-specificity and ecologies of experience

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Ecological thinking forms a subterranean current within the history of psychology, which arises at key moments. One comparatively recent example is with Ed Hutchin's Cognition in the Wild, which offers an account of mediation and situated action that provides for a sociocultural reformulation of psychological processes. From the perspective of the psychology of memory, the challenge of this ecological thinking is to draw our attention to complex relations between practices of remembering and the settings in which they are enacted. In this paper we return to earlier examples of ecological approaches, such as Kurt Lewin's *Principles of Topological Psychology* and JJ Gibson's *The Ecological Approach to Visual Perception*, to develop a conceptual framework of 'life space' which emphasises the relational and material grounding of acts of remembering. We argue for the analysis of remembering in relation to 'setting specificity', where what and how we remember is interdependent with the relational meshwork of the setting where it occurs. We exemplify this approach with a range of examples from recent empirical work in social welfare and mental health care practices. The cultural and historical dimensions of memory can then be situated within a broader account of 'experience-ecologies'. We conclude with some reflections on the ethico-practical obligations that structure our professional engagement with these ecologies.
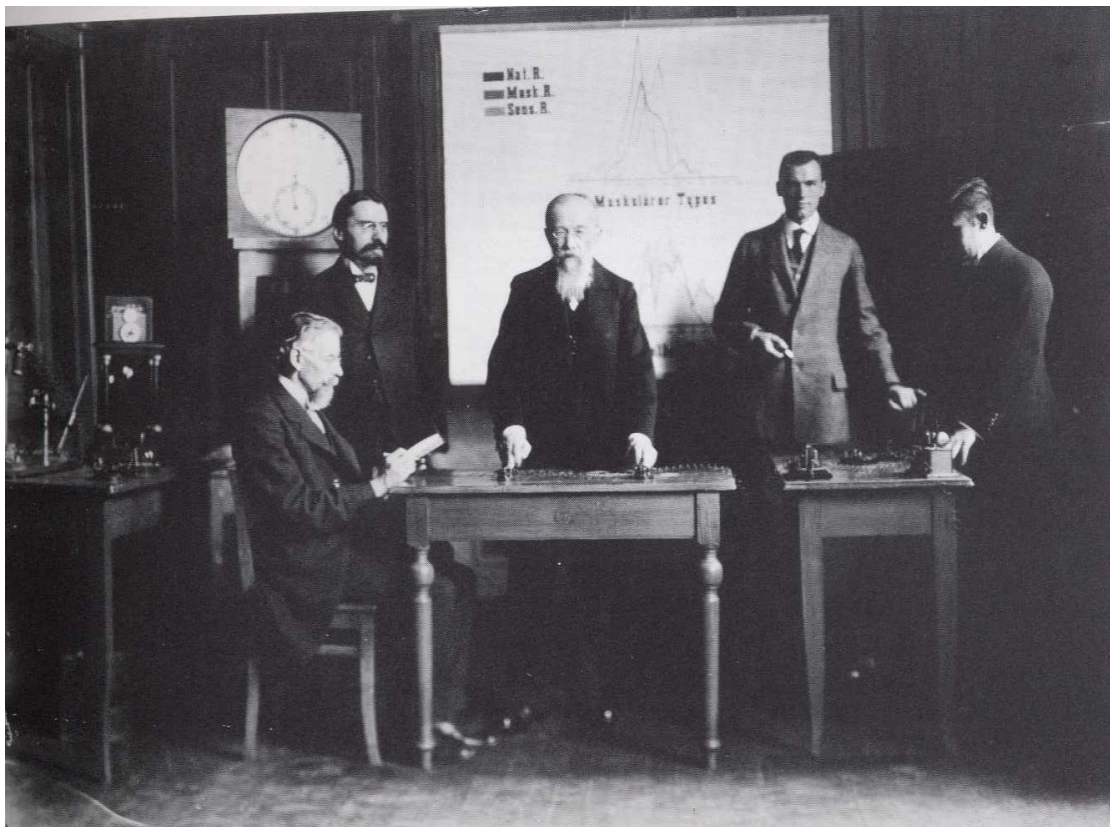
Introduction

There is a well-known picture of Wilhelm Wundt standing with his research colleagues in his Leipzig Psychological Laboratory. Wundt stares directly into the camera lens, his hands placed symmetrically either side of two response switches, surrounded by the attentive assistants. He is clearly the 'subject' of an experiment about to begin, but also, equally clearly, the 'head' of the group, placed at the very centre of the image, with his body framed against the contrasting white backdrop of a large graph of data. To the left of Wundt in the picture are the older members of the group, taking notes and carefully observing proceedings. To the right are the younger members, poised over the control switches, skilled in the operation of the technical apparatus that fills the room. Moving from the left to right, the viewer is confronted with a new synthesis in knowledge of the psychological – the fusion of the tradition of philosophical empiricism with emerging scientific technics.

Wundt's position here is paradoxical. He is the eminent Professor, master of the laboratory. And yet he also seems trapped, as though plugged into a machine that he can no longer control. The old man stands at the threshold of a new science, one that he will be widely credited for having inaugurated, but which will ultimately fail to deliver on his passions and ambitions. Wundt's expression, his direct holding of the camera's gaze is inscrutable – both commanding and also weary, his eyes half shut behind his glasses. Framed either side of him are the past, the downcast eyes of the senior philosophers, and the future, the young technicians, one of whom, the tallest figure in the room, standing bolt upright, mimics Wundt in staring out of the frame, confronting the viewer, his face beautifully bisected with shadow, his hand ready to thrust down on the lever. Finally, descending properly into darkness on the far right is Friedrich Sander, who in the years after the photograph is taken will come to embody the fall of German Psychology.

What cannot be doubted about this photograph is its declaration that, going forward, the laboratory shall come to be the locus for the production of psychological knowledge. It is in the space of the laboratory that the great discoveries of the discipline will be made. If something is worth knowing, then it is here that it will first begin to be articulated. The brass instruments and the staff will change, the subjects – no longer the great Professor, but instead legions of young students eager for course credits – will pass through in their hundreds of thousands, but what shall remain unaltered, without gainsay, is this scene of discovery, the laboratory as the 'truth machine' for the interrogation of the deepest workings of mind.

Both of us vividly recall our encounters with laboratory based psychology experiments as undergraduate students. For Steve, this involved completing endless number and letter string recall tests whilst sat in small rooms in a converted former tuberculosis hospital, then housing the University of Reading Department of Psychology. Whilst these experiments seemed to have all the trapping of 'science', such as computer screens and standardized instructions, it was difficult to feel that this redecorated ward space was a place where great truths were in the process of emerging. Later both of us would discover other

methodologies and ways of researching which would take us out of our respective Departments and into fascinating and challenging conversations with people in organization, hospitals and communities about their lives and psychological worlds.

That passage away from the laboratory and towards research encounters 'in the field' is one shared by a great many of the scholars who have gravitated towards sociocultural psychology and critical psychology, in its many variants. But rather than see this as a comparatively recent phenomenon, which parallels the growing concern with the use of laboratory methods in Psychology, we can also view it as ongoing feature of the history of the discipline itself. Flowing alongside the 'main current' of laboratory-based experimentation are all manner of other research practices. It is not simply that there are other 'truths' to be found than those that emerge from testing booths, but rather that the kind of knowledge assembled through psychological experimentation is weak by itself, unable to connect to a broader world without the considerable assistance provided by practices of rhetoric, exemplification, mediatisation, thick descriptions of 'the real world' and so on.

The emergence of laboratory based methods then seems to require a parallel set of practices that are able to articulate experimental findings within a broader context. We see this clearly in Wundt's later *Volkerpsychologie*, but also in the oscillation between technical and lay accounts of psychological phenomenon that characterizes multiple streams of research activity in the discipline. As Frances Cherry (1994) has shown in the case of Social Psychology, what happens within the laboratory is significantly mediated through a series of acts of 'making public' (e.g. press commentary, textbooks, public speaking) that attach experimentation to everyday 'matters of concern' (cf. Latour, 2005). Ashmore et al (2005) refer to these acts as 'demonstrations' that do not simply disseminate experimental findings but rather seek to render the world in the image of the laboratory, such that the epistemics of experimentation are treated as the means to speak directly for the psychological on all relevant matters.

So rather than stress the opposition between sociocultural and experimental psychology – as many authors, including ourselves, have often done in setting out their intellectual position – it seems a better starting point to acknowledge the structural interdependency of the laboratory and the 'real world'. Take, for instance, the emergence of what came to be called the study of 'everyday memory'. A founding statement for this approach came from a notorious conference address given by Ulric Neisser in 1978, where he declared that 'If X is an interesting or socially important aspect of memory, then psychologists have hardly ever studied X' (Neisser, 1978). Following this provocation, his own work turned to the study of 'remembering in natural contexts' (see Neisser, 1982), including the noted study of John Dean's Watergate testimony (Neisser, 1981). However, Neisser never properly wavered from a commitment to experimental methods, as his commentary on Edwards et al's (1992) formulation of a discursive approach to remembering demonstrates:

> They are classical behaviourists, trusting in nothing except overt action … Describing the structure of discourse is just no substitute for the study of how normal people remember – and misremember – real event (Neisser, 1992: 451)

It seems that Neisser, much like the image of Wundt in the laboratory, was a figure caught in the paradoxical situation of standing between two worlds, holding together the past and the future of the discipline, but apparently not entirely comfortable with either. It is common to draw upon the popularization of Kuhn's (1962) philosophy of science in speaking of 'revolutions' in psychology, of which Neisser's earlier landmark text *Cognitive Psychology* is typically held as an exemplar. But in truth, the 'cognitive revolution' was nothing of the sort, but rather the drawing together of a range of existing threads, including cybernetic modeling, information theory, constructivism, informal behaviourism and physicalism (Dupuy, 2000). By the same token, we might add, the 'second cognitive revolution' once proposed by Rom Harré (Harre & Gillett, 1994) seems to have amounted to not a whole lot more than the blending of ethnomethodology, Wittgenstein, Conversation Analysis and observational methods. Perhaps we are, in the end, a discipline of reformers rather than revolutionaries.

That said, the ending of Neisser's (1992) commentary bears attention. He invokes J.J. Gibson's (1979) ecological analysis of perception as marking a way out of the impasse of 'the shifting boundary between the physical and the social sciences [wherein] psychology is often attacked from both sides' (Neisser, 1992: 451). Much of Neisser's later work sought to tease out the implications of an 'ecological' perspective for studying memory (see Neisser, 1992). In an interview in 1997, Neisser, who had been a colleague of both James and Eleanor Gibson, described his encounter with Gibsonian 'ecological psychology' in the following way:

> I had conversations with Jimmy in which he would maintain that information was in the light and that perception was direct and the rest of those things. On the first account of these views I really thought he was going crazy … After a while I began to think to myself that Gibson is right. Information is in the light. It has to be in the light. How could it be elsewhere? … [A]nd so after a while I began, you might say, waking up in the middle of the night in a cold sweat saying: He's right, what am I going to do now? Gibson is right! … Ed Reed said something in his biography on Jimmy that I found very insightful: that in the 17th century a bargain was struck such that the real world belonged to the physicists and the mental world belonged to the psychologists, loosely speaking, of course. They didn't have those titles in those days. Psychologists have kept to that bargain and they've been told over and over again: "You have got to distinguish the physical from the psychological. It's the psychological you're interested in!" We were supposed to study what's inside and the physicists what's outside. Of course you see the mess the physicists have made of that: they tell us, that what's outside is a lot of empty space with electrical charges in it. What I learned from Ed Reed was that Gibson

broke that compact. He wouldn't abide the terms of that treaty, insisted on talking about the outside as well, about the outside world. (http://www.psychspace.com/psych/viewnews-10647)

Here Gibson is positioned as railing against the foundations of the discipline itself, the separation of mind from nature. For Neisser, 'ecological psychology' begins with the recognition that the psychological cannot be contained 'within', but overspills into the 'outside' space that cannot be theorized using classical physics. However, Neisser is also clear on what the costs are such a move, recalling that the common view of Gibson was as 'some kind of kook' and the response to his own gravitation towards ecological psychology being met with the reponse "Well, now Neisser is going crazy, too. There's two of them crazy out there!".

The 'craziness' here can be attributed to the force with which Gibson defended his central thesis – that it was not necessary to provide a detailed description of the processing of information by the cognitive system, since all the information required for perception was contained 'directly' within the act of perception itself (Gibson, 1979). As the person moves through the environment, shifts in the perceptual array contain invariant information (the 'non-change that persists during change') that can be 'read off' immediately, without need for further transformation. Thus, as Neisser puts it 'the information is in the light', Invariant information ranges from that which is relatively 'low grade', such as texture gradients, to comparatively 'higher-order' invariants which Gibson termed 'affordances' (Gibson, 1979). An affordance is an 'action-possibility' offered by the environment – open water offers the possibility of swimming or drinking, a stick invites the hand to pick it up and use it as either a tool or a weapon. The ability to perceive or 'pick up' these higher-grade invariants depends on the structure and complexity of the organism as it interacts with the environment. To this Gibson adds that, for humans, their vastly temporally expanded capacity for perception allows them to pick up invariants that are not physically present but which nevertheless structure current possibilities for action.

The ecological approach then shifts the psychological beyond the confines of the subject and into the relations between persons and environments. It further demands that space itself be rethought as not a neutral backdrop, but rather an information-rich configuration of 'action-possibilities'. But, as befits an approach developed within the psychology of perception, Gibsonian ecological psychology has a limited grammar. As we have seen, what would usually be called 'memory', can only be thought of as a temporal expansion of attention. Moreover, the language of affordances alone does not immediately capture the dynamic interrelationship between persons.

On this point we must turn towards a second ecological thinker, Kurt Lewin. His 'topological psychology' describes psychological life as fundamentally relational, derived from a set of interdependent 'co-existing facts' that 'have the character of a dynamic field in so far as the state of any part of this field depends on every other part of the field' (Lewin, 2010). These facts emerge from the interplay of a series of relational forces that structure the possibilities for action within the

field. Taken together they constitute what Lewin (1936) calls 'life space'. This is a relational nexus that at any given moment constitutes the psychological as a 'manifold' of potential actions. Life space is not equivalent to the immediate perceptual environment, since there may be relational forces at work that are either spatially or temporally remote, but nevertheless active in the shaping of the current actions. For example, the walls of a prison may prevent immediate physical movement, but they are rendered porous by outside relations (media, visitors, sanctions, forms of communication) that shape the lives of prisoners from the inside, allowing for movements in thought, feeling and action, despite their apparent remote origins (Moran, 2015).

Life space, as Lewin conceptualizes it, has a topological structure. This means that it is to be primarily described with reference to invariant qualities of relationships as they pass through spatial and temporal transformations. In this way, spatial or chronological distance may be irrelevant to an understanding of the relations that are 'in play' in a given psychological situation. The challenge that Lewin poses is to think outside of commonsense mechanical notions of cause and effect, and instead to attempt to map unfolding dynamic relations and the possibilities for action that they enable or restrict. In his later work, Lewin (1943) would expand this to a consideration of the 'political atmospheres' that emerged from particular configurations of forces, although this was subsequently narrowly translated into the concept of 'leadership styles' (Lezaun & Calvillo, 2013). This reductive adoption of Lewin's work is unsurprising given the tendency in his analyses for forces to be seen as provided 'non-psychological contexts' for personal relationships (e.g. parent-child; instructor-pupil etc) occluding a concern with a broader ecology of forces – non-humans, material, 'natural' etc.

Here, Gregory Bateson provides a useful corrective. Although an anthropologist by training, Bateson's varied intellectual projects, summarized in *Steps to an Ecology of Mind*, offer a genuinely ecological account of 'mind' as that which emerges out of a web of broadly distributed relations. To illustrate Bateson's vision, his famous illustration of the blind man is worthy of note:

> Suppose I am a blind man, and I use a stick. I go tap, tap, tap. Where do I start? Is my mental system bounded at the handle of the stick? Is it bounded by my skin? Does it start halfway of the tip of the stick? But these are nonsense questions. The stick is a pathway along which transforms of difference are being transmitted. The way to delineate the system is to draw the limiting line in such a way that you do not cut any of these pathways in ways which leave things inexplicable. If what you are trying to explain is a given piece of behavior, such as the locomotion of the blind man, then for this purpose, you will need the street, the stick, the man, the street, the stick, and so on, round and round. (Bateson, 1972: 434)

Bateson, like Gibson, considers that the environment is 'information rich'. It is constituted by a myriad of 'differences'. Every facet of the environment differs from that against which it is set – flowers from trees from animals from stars and

so on ad infinitum. Many parts of the environment also differ from themselves over time, through movement, erosion or self-action. Living creatures are constitutional attuned to difference, but attend only to those differences that have an immediate implication for their own actions. These specific differences Bateson calls 'differences which make difference', or more simply 'information'. In this way, ecologically embedded differences give rise to changes of further differences through interaction with the creatures that are sensitive to them. This chain of differences that circulate through lived relations is, Bateson argues, 'an elementary idea' (p. 429). Mind is then a name for an emergent relational circuit that transforms difference. It makes little sense to try to draw the boundaries of this circuit at the skin or skull, since an adequate explanation will require all ecological components of the circuit – such as stick, man and street bound in reciprocal relations in the example above. The broader implication here is that a historical account of the transformations in thought will need to grasp how ideas emerge from these ecological relationships rather through an abstract epistemology.

Taken together, these three thinkers demonstrate the disruptive power of ecological thinking. Small wonder then that despite their renown, each is something of a marginal figure within Psychology, whose influence failed to give rise to a wholesale transformation in the discipline. In this sense they might be considered as instances of what Deleuze & Guattari (1986) termed 'minoritarian' figures – thinkers who managed to combine an 'minor' language within a dominant tradition to constitute a distinct way of speaking of their own. However, between them they share a concern to move away from a carving up of perception, thinking and human action into entitative segments, without understanding how each really 'work' 'move' and 'flow' *together* in an ecological context. In their own way, each has emphasized the importance of *relations* rather than entities, *movements and flow*, rather than storehouses, regions or static locations, and have led us to think of the psychological as emerging out of networks of physical and social settings or environments.

However, we cannot read these thinkers through the traditions and assumptions that were in operation at the time they were developed. We propose that recent work in the reception of what can inelegantly be termed 'process philosophy' – e.g. the work of Henri Bergson, A.N. Whitehead, Gilles Deleuze etc – provides exactly the kind of ontological and epistemological grounds that these thinkers, in their various ways, were seeking to move towards. Thus one reason why ecological thinking failed to gain traction within Psychology is because the philosophical 'groundwork' that would render it as tractable was not available at the time. We will then be seeking to read 'ecological' versions of psychology through the philosophical standpoint of process philosophy, rather than the operant philosophical positions that were available for debate at the time many of the texts we will be considering were written.

In this essay we will seek to follow the 'subterranean current' along which these ideas flow within Psychology to think of memory as a distributed, expanded system, which has different forms of logic and practices (Brown & Reavey, 2015). In particular, this exploration invites us to move beyond the populist obsession

with thinking memory through time only, and diverts us to the environmental and spatial configurations of remembering, and the settings and environmental systems from which they emerge. It is this dispersal of experience across a broad field that we find helpful in thinking through how remembering emerges as a cognitive property, and constitutes a further layer in making use of these ecological principles.

Thinking Ecologically About Memory

In common with a number of our peers, we have maintained a morotorium on the use of term 'cognition' throughout the majority of our respective careers. For Steve, the roots of this peculiar self-imposed proscription can be traced back to undergraduate studies. He remembers introductory courses in Cognitive Science that described an approach to social action and being human that seemed wildly implausible and in thrall to a metaphor of computation stretched to its limits. For Paula, courses in phenomenology and an early exposure to the work of Satre and Merleau-Ponty already provided a solid basis for considering the social foundations of thought. It has taken quite a while for both of us to recognise that we were formed intellectually during the period of a stark polarisation within British Psychology, where competing schools of thought offered up a choice: an individualist ontology or a social ontology; knowledge of law-like regularities or interpretation of human action; quantitative or qualitative methods, and so on.

To give but one example, Edwards & Potter's (1992) landmark paper on a discursive approach to memory sets out the options fairly starkly. One either studies 'mind' as a thing-in-itself, whose operation can be discerned in the phenomenon through which it is expressed (e.g. remembering, forgetting), or else one treats 'mind' as shorthand for those expressions themselves, as naming those worldly activities through which persons are engaged with one another:

> Mind can be studied as intrinsically social and contextualised; it makes sense to begin with no a priori separation of person/mind from its embodiment in communicative practices. It is both possible and fruitful to pursue the study of action itself – accounts, versions, constructions – as discursive activity. Rather than offering us a window upon the workings of something else called 'mind', discourse can be examined for how speakers orient themselves to notions of mind, using these as resources in conversation (such as in framing accounts of truth and falsity, accomplishing blamings and excuses, mitigations and accusations, explanations of why people do what they do, and so on). Our recommendation is to let go of a commitment to mind as a pre-existing, independently knowable explanation of talk and action. (Edwards and Potter, 1992: 211)

In retrospect, the bold invitation made by Edwards and Potter to cognitive scientists to 'let go' or give up on the foundational construct that organised their field of studies – mind as an independent 'thing' defined by cognition – was unlikely to ever be heard as anything other than a battle cry. And indeed the relationship between the 'Loughborough School' of Discursive Psychology that arose from this work and 'mainstream' experimental traditions of social and cognitive psychology, came to be marked by a deep suspicion and antagonism,

which culminated in attempts at exclusion from institutions and the national funding landscape.

As we have argued elsewhere (Brown & Reavey, 2015b; 2016), this retrenchment towards philosophical or methodological differences has masked the extent to which, within the psychology of memory at least, there is an emergent convergence on a range of key concerns. These include issues around function, accessibility, accuracy and life-storytelling (see Brown & Reavey, 2017). We will return to some of these issues as we proceed. It also enables a forgetting of some of the common roots of the approaches. As Brady Wagoner (2017) has so brilliantly demonstrated recently, the 'long shadow' cast by Frederic Bartlett over the (social) psychology of memory has ensured that notions of context and culture have never really been ignored, even if they have proved difficult to operationalise adequately. Similarly, Jerome Bruner's work is a recurrent touchstone which has provided inspiration to both cognitive and discursive work in equal measures.

The area where this convergence and shared history is most apparent is in the study of Autobiographical Memory (AM). This field emerged from an earlier paradigm of 'everyday memory', which itself arose from the debates initiated by Ulric Neisser on the limits of experimental studies of remembering and the need to explore memory in 'everyday contexts'. The focus of this work was on episodic memory – recollection of events – rather than the broader structure of the memory system as a whole. Martin Conway (Conway & Pleydell-Pearce, 2000) sought to identify how memories of personally experienced events – 'autobiographical memories' were constructed by drawing upon an ever-expanding base of event-specific knowledge organised into various discrete and broader autobiographical periods. Drawing on a mixture of experimental work and clinical case studies, Conway theoretically modelled a set of cognitive processes dubbed the 'Self-Memory System' (SMS) as the locus where autobiographical memories are pulled together as 'transient constructs' through cue activation and retrieval.

What is particularly of note here, from a sociocultural perspective, is that this approach accords a central role to questions of identity and culture. Conway argues that event-specific knowledge which is congruent with both current goals and mood is relatively more accessible than other non-congruent equivalent knowledge. In other words, who and what we think we are at any given point – our 'working self' – drives our sense of our own personal history. Moreover, in recent work, Conway has advanced the view that the organisation of event-specific memory draws upon culturally derived 'themes' and 'life-stories'. In this way, cultural narratives enter into the process of drawing together event-specific knowledge into autobiographical memories.

From this it appears that there is a resonance between this tradition within the psychology of memory and sociocultural work. However, as Katherine Nelson and Robyn Fivush (2004) have argued, Conway's approach is overly wedded to a modelling of fully formed cognitive systems, and is lacking in both a

developmental framework and an account of how 'self' arises through socio-linguistic interaction:

> rather than viewing the self in this construction as an autonomous construction of the mind or the brain, we view it as a product of innumerable social experiences in cultural space that provide for the developmental differentiation of the sense of a unique self from that of undifferentiated personal experience (Nelson & Fivush, 2004: 507)

Shifting the focus outward from cognition per se to the role of parent/carer-child conversations in scaffolding the narrative construction of autobiographical memory allows Nelson & Fivush to discern a range of gendered and cultural differences in personal remembering. Context then appears to be crucial in shaping how we tell our personal histories, and as a consequence how 'self' emerges as a complex construction through this work of narration.

Our own work is greatly informed by this notion that we are as persons both the products and also the producers of a contextually grounded work of self-narration. Our particular concern has been with how 'difficult' or 'problematic' personally (and vicariously) experienced events – 'vital memories' – are managed within this work. We describe vital memories as a subset of autobiographical memory to indicate that, contra to some of the debates around trauma and experience, a difficult past need not necessarily be seen as corrosive of self and identity (Brown & Reavey, 2015). Indeed the vast majority of the participants we have worked with in the studies we have done have developed robust techniques for turning around on the problematic aspects of their personal histories in productive ways. But vital memories have their own specificity which arises from their irreversible nature. Memories of child sexual abuse, for example, come with a range of significant implications regarding past and present agency that are difficult to contain in a single narrative. Difficult events have an affective power that stretches across the life course in complex ways. One cannot simply find 'the right story' to tell about a problematic past, but instead must seek to find ways to 'feel' that past differently.

What we have observed across the studies we have been involved with is that the ability to manage a difficult past rarely lies solely with the person concerned alone. The event in question may be a matter of record that is shared across a number of different practices, where there may be diverse concerns and ways of representing the event. The early life of children placed for adoption, for instance, is known and of relevance to social services, educationalists, adoptive parents, biological parents and siblings. The child sits within a web of actors and practices who speak about and act upon their past in ways that are often in tension with one another. At times, some of these actors come together to negotiate a shared version of the past, such as in 'life story book' projects, but even here the child is unlikely to be the primary author of this important account of their own experiences. Later on, we will discuss these kinds of practices that aim at securing a cohesive account of past experience in terms of what we call the 'setting specificity' of memory.

Moreover, the work of remembering is not purely an intersubjective matter. It takes place in a particular 'lived' spatial environment which acts to both constrain and shape the event that is being recollected. For example, remembering as it unfolds in a court of law differs from remembering in a therapeutic space. The spatial features present at the time of the original event are also significant, since they become resources around which critical features of the recollected event become reconstructed. Memories of child sexual abuse, for example, can sometimes focus on specific aspects of the environment at the time – doors, furniture, rooms, houses, roads – as 'hooks' upon which substantive issues around agency and responsibility are addressed. Objects and other materials can then be seen as 'participants' in both the event itself, and as the mediational means through which the past is extended into the present (Reavey & Brown, 2009).

To return to the psychology of memory, we can now see that if there is a 'system' organising the construction of autobiographical memories, like Conway's Self-Memory System, then it is unlikely to be based solely within the cognitive architecture of the individual. That system will include, as constitutive parts, the others with whom we interact closely (e.g. carers, partners, professionals), the practices which have a concern or stake in our personal histories (e.g. social welfare services, medical services, employers), the settings in which our past is made relevant (e.g. courts of law, therapeutic settings) and the material resources which participate in the work of remembering by way of their propensies and affordances (e.g. diaries, social media profiles, photographs etc).

The call to address remembering at the level of a distributed system is now being made from a range of different directions, including philosophy, through the work of John Sutton (2010) and Andy Clark (2012), cognitive psychology, from Amanda Barnier and colleagues (Barnier et al 2012) and organizational memory studies. The impetus for much of this work is the classic study of navigation by Ed Hutchins, *Cognition in the Wild*. In this taughtly argued and thoroughly well-evidenced work, Hutchins makes the bold claim that what is called 'cognition' refers to a distributed work of computation that binds together persons, representational practices and artefacts into functional systems. The cognitive properties of these systems – that is, their ability to co-ordinate representations to accomplish actions – differs from those of the individuals who partly compose the system.

The computational process of navigating a ship involves the entrainment of experienced sailors, charts and devices which 'pre-compute' and restructure some aspects of the process, a social organization of persons, routines and materials and so on. Whilst Hutchins at no point seeks to deny that individual 'under the skull' cognitive processes are involved in navigation, he argues that it is the 'social organization of distributed cognition' (p.226) that makes up the cognitive architecture of the practice:

> Clearly, a good deal of the expertise in the system is in the artifacts (both the external implements and the internal strategies) – not in the sense

that the artifacts are themselves intelligent or expert agents, or because the act of getting into coordination with the artifacts constitutes an expert performance by the person; rather, the system of person-in-interaction-with-technology exhibits expertise. These tools permit the people using them to do the tasks that need to be done while doing the kinds of things the people are good at: recognizing patterns, modeling simple dynamics of the world, and manipulating objects in the environment. (Hutchins, 1995: 155)

These latter 'kinds of things', which would be the starting point for much experimental psychology, are not of particular interest to Hutchins because it is difficult to establish what individual cognitive properties, beyond some basic capacities, will be required when cognition is studied 'in the wild'. He observes that early on in its history, cognitive science took practical activities of symbolic manipulation as its core interest, but neglected, or deliberately chose to not analyse, how these practical activities were socially and culturally structed. In this way assumptions were made about the cognitive architecture of the person that failed to grasp that much of this architecture resided in the 'outside' of material culture. Hutchins then calls for the term 'cognition' to be reclaimed as referring to the sociocultural structuring of computation, understood as the 'propogation of representational states' through diverse cultural and material 'representational media'.

This approach to studying cogniton, which is, of course, partly indebted to the work of Michael Cole, Jean Lave and Sylvia Scribner, is almost enough to convince us to give up our self-proscribed avoidance of the term. But there is one crucial issue that gives us pause. Hutchins proposes that cognition is, in essence, a distributed work of computation built around the fundamental operation of co-ordinating representations. In this way, Hutchins remains within a version of the founding 'compact' invoked by Neisser. Whilst Hutchins very clearly overcomes the distinctions between the 'inside' and 'outside' of the subject, by rendering the main aspects of cognition as system-level properties, he retains the Kantian notion that our ways of knowing are distinct from the things that are known (the *noumenon* or things-in-themselves). The representational states which are propgated through systems are descriptions *about the world* rather than traces *of the world itself*.

Take, for example, Hutchins' discussion of the navigation device known as an *astrolabe*. This is a mechanical device on which the movements of stars can be both plotted and simulated. For Hutchins this is an early 'anolog computer' which acts as both an 'externalised memory' of star positions and a means of calculating the effects of latitude, time etc. He describes it as 'an early example of a general trend toward the representation and solution of computational problems via physical manipulations of carefully constructed artifacts' (1995: 99). These kinds of artifacts reduce the cognitive load on the user (who does not have to commit astronomical positions to memory), but more importantly demonstrate that cultural-historical knowledge can be 'designed-in' to material devices in such a way that there is a prior externalised symbolic structure already present before any given act of cognition.

Contrast this with the way that the philosopher Michel Serres speaks of the *gnomon*, a stationary shaft which is the key element in a sundial, an early forerunner of the astrolabe. For Serres, the placing of the gnomon, as recounted in the story of Thales seeking to measure the height of the pyramids, is not an act of representation by a subject seeking to describe the world. Rather, the gnomon acts directly within the ecological context in which it is set such that it can be said that 'the gnomon knew, discerned, distinguished, intercepted the light from the sun, left lines on the sand as if it were writing on a blank page and, yes, understood' (Serres, 1995: 80). This is not anthropomorphism on Serres' part. He is not claiming that the gnomon is a kind of 'subject', but rather that the device acts directly on the world in which it placed and *translates* properties of that world from one form to another – in this case from light to patterns on the sand which can be responded to as a kind of writing. The gnomon 'knows' not through representation, or symbolic encoding, but through the creation of possibilities for action that arise from the translation of properties of the world as a consequence of its fortuitous relational placing. 'Knowing' here is a shorthand for the propensities of the gnomon:

> The gnomon is not a tool in the sense of a stick held by a monkey which extends its grip, nor in the sense of the magnifying glass which enlarges the lens and enhances the performance of the eye. The artifice does not refer to a subject who directs it, but remains an object amongst objects, between the Sun and the ground, a thing made intelligent by its position in a specific place in the world which passes through it to be reflected by itself. Through the gnomon the Universe thinks αυτο καθ αυτο (auto kath'auto), and knows itself by means of itself. (Serres, 1995: 86-7)

Hutchins and Serres are close in their attribution of 'knowing' or 'cognition' to the system as a whole rather than subjects who participate in the system. But Serres makes the further step of arguing that the things the system seeks to know also become participants in the system, through the direct translation of their properties and actions. The gnomon provides a means for the universe to 'think itself', in the same way that the astrolabe or the alidade aboard the US navy ship *Palau*, afford the means for a part of the world to be folded together relationally such that it can 'know itself' in a way we might characterise as 'non-representational'.

Serres' work has provided much of the bedrock for what is commonly referred to as *Actor-Network Theory* (Latour, 2005; Law, 1994). Space precludes a thorough discussion of the relevance of the approach here, beyond noting that substituting the idea of 'translation' for that of 'representation' extends the boundaries of the cognitive system beyond the immediate human and technical elements to encompass the things that the system seeks to know – in the case of navigation, this would include landmarks, waves, wind, and stars. Interestingly, Hutchins does approvingly cite John Law's study of Portuguese 15th centrury imperial navigation without acknowledging the very different ontological standpoint that Law's argument is based upon. When Law proposes that changes to the technical and adminstrative organization of the Portguese fleet enabled the navigational

context to 'include the very heavens, heavens that stayed with the navigator wherever he might go' (Law, 1986), this is to be read almost literally. The stars are part of the 'network' built by Portuguese expansion, not mere representations. However, they can only be brought within the network through a particular material-semiotic configuration of elements that translates something of their properties – 'this borrowing from the heavens was achieved by means of a judicious juxtaposition of data, instruments, and rules for the guidance of mariners' (Law, 1986).

We can now draw together some of the challenges to thinking 'memory in the wild'. An ecologically grounded approach to remembering will need to begin with a 'system-level' analysis that cuts across the distinction between inside and outside, subject and object, knower and tool. As Bateson argues, the system is composed of all the elements that are involved in the act of knowing, and a premature partioning of the relations between elements risks 'leaving things inexplicable'. Remembering can then be seen as an accomplishment of the system itself, rather than any component element. Following Hutchins, we can see that this accomplishment depends upon a work of co-ordinating diverse operations. Whilst some of these operations may indeed be occurring 'under the skull', it is likely that these will be of marginal interest to understanding the emergent cognitive properties of the system as a whole.

Adopting a process-philosophy approach raises some questions about the extent to which remembering is best described in terms of representation or as relational translation. Here Gibson's notions of direct perception and affordance take on a renewed character. Clearly it is one thing to see spatially remote elements, such as stars, as being directly present in a network, and quite another to see temporally remote persons and places as somehow 'a part of' current actions. Doing so requires some significant rethinking of time and space from a psychological perspective.

With regard to time, Henri Bergson's (1991; 2001) notion of 'duration' as the indivisible unfolding of experience, offers a useful way into the problem. Through a reading of Zeno of Elea's arguments, Bergson arrives at the contrary notion that movement and change are primary qualities. That is to say, that the world is composed of mobilities which are subsequently 'cut out' in the form of stable things and identities through perception in order to provide a 'foothold' for the organism in a changeable world. Time itself – i.e. duration – does not divide neatly into portions, since this would create the incoherent notion that change would be reducible to the progression of individual moments – an idea that has a limited place in modern science. Time can only be rendered into parts secondarily by importing spatial categories to imagine time as a progression through metric or Euclidean space. From this it follows that the past remains connected to the present, it has not properly 'passed', in the same way that the opening of a melody is contained within its musical progression as a piece of music unfolds. However, the past of itself lacks the same efficacy of action as the data of immediate experience, a quality that Bergson notes with the phrase 'the past is that which does not act'. Memory, for Bergson, is then a reorganisation of duration such that some aspect of the past is drawn closer to current actions

(note that since at no point has the past actually gone anywhere or 'passed', this is not a question of retrieval or even of reconstruction). Bergson sometimes illustrates this operation with the following diagram:
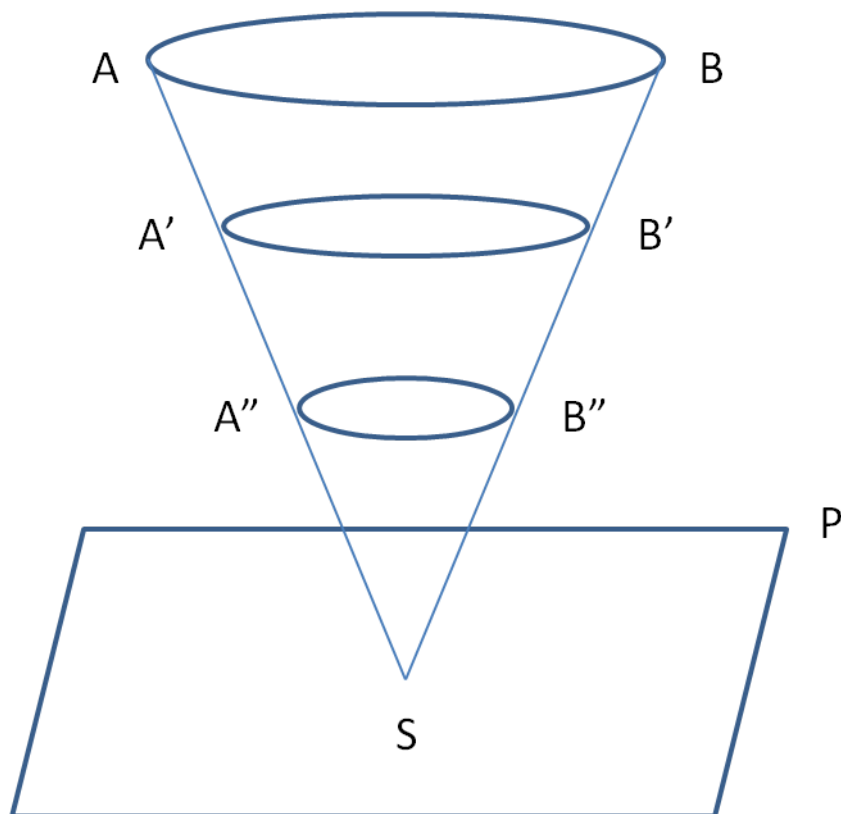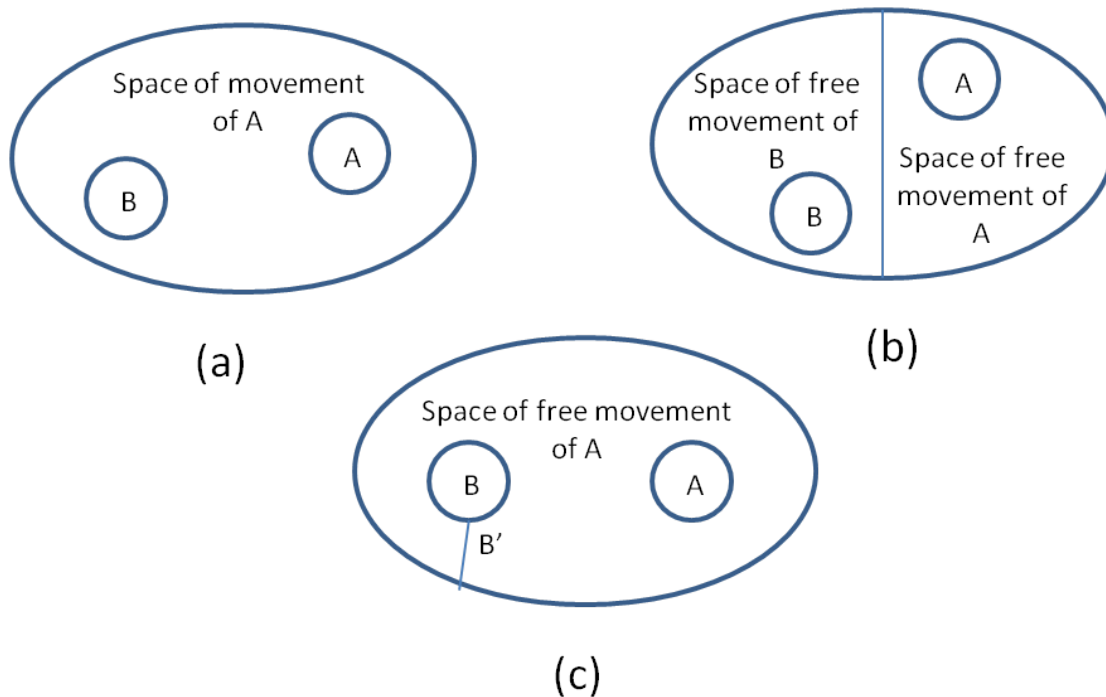

Here P is the immediate 'plane of action' and S is the point where duration is inserted into the plane. We might think of this as the akin the immediate psychological moment. At every point, this moment is informed by the entireity of past experience, organised in terms of a multiplicity of levels (A; B; C; etc). The process of remembering involves a reorganisation of these levels, such that any one can be 'rotated and contracted' and pushed towards the tip of the cone. In this way, the past becomes, for all practical purposes, part of current actions. Whilst this account may seem somewhat anachronous to the language of contemporary cognitive science, what it does demonstrate is that it is possible to think of memory without invoking 'representation' as the key operation. For Bergson, the past is restored to the present, but in doing so it becomes different to what it was, since it is now enmeshed with current actions – i.e. the past is reconstructed rather than reproduced. Repeated iterations of this process create exactly the kind of malleability in memory that cognitive and social scientists alike now assume to be fundamental.

We have used Bergson's notion of duration to envisage a 'flow of experience', such that we think of our relationship to the past in terms of 'upstream' and 'downstream':
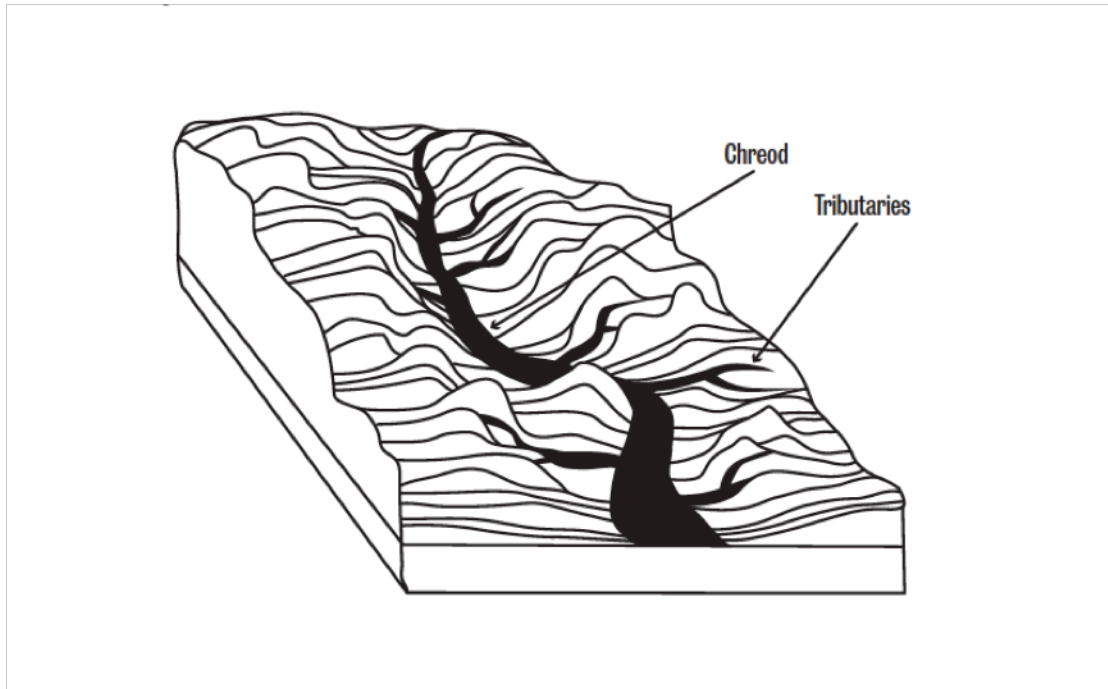
Autobiographical remembering here is the attempt to move upstream, to re-engage aspects of the past with current actions. However this is complicated by the way that past contingencies push us in certain directions (or 'tendencies'). Over time, these collect together to carve out a direction or 'chreod', rather like a river basin, that has implications for how the flow can move. Thus we cannot simply 'go back' and reinvent ourselves as we wish, since the unfolding of experience creates its own specific patterns of movement. Thinking experience in this way stresses the irreversibility of time, an issue which has a great many ramifications for the study of autobiographical memory.

Turning now to space, the challenge is to how to analyse the relationship between proximal and distal elements within a distributed cognitive system. As we have seen, Hutchins' approach works very well as long as it bounded within the immediate activity (although, as we will consider later, he has an important perspective on the historical development of practices). If, following Serres and Actor-Network Theory, we now say that remote entities can exert effects directly on current operations in a way that is predominantly non-representational, then this inevitably changes how we conceive of space. Kurt Lewin indicates a way forward by proposing a 'topological' mapping of the space of action. Lewin (1936) offers the example of two children in a bathtub, which he diagrams in the following way:

Space of movement
of A

A

B

(a)

Space of free
movement of
B

A

Space of free
movement of
A

B

(b)

Space of free movement
of A

B

A

B′

(c)

In each of the diagrams, the children A and B are within a space bounded by a complete Jordan curve. If what we want to understand is the composition of the shared activity of 'taking a bath together', then in principle where A and B are in relation to one another, as shown in diagram (a) is irrelevant, so long as both remain within the region formed by the simple closed curve (which may correspond to the limits of the bath itself or some other boundary which defines the reach of the activity). In diagrams (b) and (c) we see the effects of the children drawing further boundaries, defining their respective spaces. Again, where the children are in relation to each other is not meaningful – all that matters is whether or not a boundary has been crossed. If we now extend this basic topology of positions within a region and a boundary, we can see that the actual space can be, in principle, extended or transformed in multiple ways and yet still retain the same psychological properties so long as the relationships remain invariant (i.e. no boundaries are crossed).

What Lewin is proposing here is that relational properties are more important than spatial positions in accounting for psychological phenomenon. Relations define the 'action-possibilities' that are available to us at each moment, irrespective of whether the entities concerned are distal or proximal. Clearly the plausibility of this proposition turns on whether those relationships can be 'felt' in some way. This would mean expanding the notion of perception greatly beyond the kinds of circumstances that concerned Gibson, towards a vastly more mediated account of how persons interact with one another in ways that collapse distance.

The route to 'memory in the wild' then involves, for us, a reappraisal of ecological thinking from the perspective of process philosophy. But it also, crucially, turns on the extent to which these ideas together deliver a workable empirical programme. In what follows we will develop three concepts – *life*

space, *setting-specificity* and *experience-ecology* that taken together enable us to begin to describe some of the features and issues of 'wild remembering' as oppose to memory enacted under laboratory conditions.

Life Space
Kurt Lewin's work is rightly celebrated within and outside the discipline for having combined elaborate conceptual innovation with practical, applied interventions. Such is the wide-ranging nature of his work that there are several different 'Lewins' who are held in esteem by distinct communities of scholars – the founding figure of 'action research', the progenitor of 'leadership studies', the driving force in 'experimental social psychology' and so on. This makes any attempt at pulling out one aspect of his work difficult, especially given the myriad terms he used to describe it during his career, including, but not limited to, 'topological psychology', 'vector psychology', 'dynamical psychology' and 'field theory'. These problems notwithstanding, the 'Lewin' that interests us is the author of the term 'psychological ecology'. This appears in a piece from 1943 where the following programme is outlined:

> Any type of group life occurs in a setting of certain limitations to what is and what is not possible, what might or might not happen. The nonpsychological factors of climate, of the law of the country or the organization are a frequent part of these 'outside limitations'. The first analysis of the field is done from the point of view of 'psychological ecology': the psychologist studies 'nonpsychological' data to find the boundary conditions of the life of the individual or group. Only after these data are known can the psychological study itself be begun to investigate the factors which determine the actions of the group or the individual in those situations which have been shown to be significant (Lewin, 1997: 289)

Psychological ecology is defined here, somewhat confusingly, as the broader contexts in which psychological life is given shape. For Lewin, these contexts can be described as a 'constellation of forces' which act together to create 'quasi-stationary' psychological and cultural patterns, such as 'habits' or 'preferences'. Lewin developed the concept as part of series of wartime studies on food consumption at the Child Welfare Research Station at the State University of Iowa. The research took a novel approach to exploring changing food preferences by seeing eating habits as structured by the 'social channels' through which food ends up on a plate, rather than seeking an explanation with reference to 'in the head' cognitive processes – 'food behaviour is determined by the dynamics of the food situation which include the channels through which food comes to the table, the gatekeeper governing the channels at various points, and the food ideology of the gatekeeper' (1997: 299).

The relevant social channels here go far beyond the individual and the home. They extend through the spaces of consumption and production, and are subject to multiple sets of forces which together create stable patterns of movement that ultimately crystallise in a tendency to eat particular kinds of food. From this it follows that the psychological is an outcome of pattern of movements that are, in

Lewin's terms, 'non-psychological'. The broader implication is that if we wish to change a psychological process, such as stereotyping or in-group favouritism, we must first identify the forces that work together to 'stabilise' such phenomenon:

> Thus if we think of trying to reduce discrimination within a factory, a school system or any other organized institution, we should consider the social life there as something which flows through certain channels (1997: 300).

Movement is then central to Lewin's analysis. As persons, our lives are structured within fields of intersecting forces that impel us towards certain goals, creating pathways within social channels. Inevitably these 'force fields' overlap with one another, resulting in conflicts with competing tendencies for movement. Behaviour, for Lewin, is then to be understood as a 'dynamic' construct which has a certain 'psychological direction and velocity' (p. 206) – that is 'meaning' – which is produced by the joint action of forces over time. These become stable, and hence to a certain degree predictable, when the psychological ecology draws firm boundaries around a particular activity.

To exemplify this, we will draw upon material that we have gathered across a programme of studies around the experiences of mental health services users in secure forensic psychiatric care. In the UK, as in most of Europe, secure psychiatric care involves the person being temporarily deprived of their liberty, with or without their consent, for a period of treatment for mental issues in a secure (i.e. locked) hospital environment. Forensic psychiatric care refers to treatment provided when the service user is also engaged with the criminal justice system, either as a convicted offender or as standing accused of a crime (known as an 'index offence').

In one of the first studies we conducted (Brown et al, 2013), we became aware that many of the service users we talked to were unable to articulate what it was that had resulted in their being placed on a 'section' of mental health act that had resulted in them being committed to secure care (commonly known as 'being sectioned'). They were, however, typically able to describe their time within the secure unit in terms of a process of 'recovery', from being 'unwell' to 'relatively well'. This self-described movement demonstrates the forces at work in structuring the experiences of service users. Literal movement through the secure psychiatric system, from committal to discharge, depends upon a service user satisfying medical staff that she or he has acquired a sufficient level of 'insight' into her or his own mental health issues such that they no longer pose a risk to themselves or a risk to others, and are therefore able to continue their recovery back within the community. The language of the service is one of 'illness' and 'stabilisation' rather than 'cure'. Mental health is often spoken of as akin to diabetes – a lifelong condition that can be better or less well managed, but never fully ameliorated. All of the service users that we spoke to strongly desired to return to the community, and many were very aware that this goal could only be realised by persauding staff that they understood they had been ill on arrival, and were now engaged with the process of becoming healthy. If the

unit is considered as a social channel, then flowing 'out' of its boundaries requires compliance with the language of 'becoming well'.

Whilst Lewin proposed that analysis begin with psychological ecology, he had a second term to describe the movements that constitute 'lived experience': *life space*. In *Principles of Topological Psychology*, Lewin defines life space as 'the totality of facts which determine the behaviour of the individual at a certain moment' (1936: 12). What is meant by 'fact' here is perhaps better rendered as a behavioral option or 'possibility for action'. Anything that offers the possibility for movement is, psychologically speaking, 'real'. If lifespace is represented diagrammatically, as in the figures in the previous section, then it displays what kinds of movement are possible given the series of relations that are currently in play and the boundaries around the activity. However, unlike Lewin's treatment of psychological ecology, the relations that constitute life space are topologically, rather than topographically defined, meaning that distance is of less importance than the nature of the relations themselves.

Life space further differs from psychological ecology in that literal, physical locomotion is not the sole kind of movement that is important. Lewin also points to 'psychological locomotion' as a 'quasi-conceptual' movement of thought within a bounded region. Since Lewin defines 'reality' as 'what has effects' (p. 19), then the capacity to be affected through a relationship to some other person or thing is relevant to the structure of life space, irrespective of whether that other is physically present or not. Life space is then a relationally structured field of possibilities organised according to topological principles, such as invariance through transformation. Our unfolding experience is of the behavioural options afforded by the world to which we are immediately spatially present and the broader relations that conceptually inhere in that world.

Consider the following image, which was taken by a service user as part of a photo-production study in a large secure forensic mental health unit in Greater London:

This photograph depicts the outside areas adjacent to one of the wards on the unit. The most striking feature of the image is the large fence surrounding the area, which is designed to meet the standard 'anti-climb' specifications found in prisons of a similar security level. The fence seems to act as a boundary, separating the inside of the unit from the outside world. However, whilst the fence does indeed prevent physical locomotion, it does not divide the unit in terms of life space. The boundaries of the unit are actually reasonably porous. They are crossed by people (e.g. nursing staff, visitors, patients with leave to walk in the surrounding grounds), things (e.g. food, medication, patients' possessions, contraband items), and, most importantly, by mediated relationships (e.g. television, telephone calls, contact with the community etc). The boundaries of life space are then not co-extensive with physical boundaries. Psychological reality – the capacity to be affected – travels with the relationships that define who and what we are.

At this point it is worth raising the question of whether, from a process philosophy perspective, Lewin's distinction between psychological ecology and life space is sustainable. Although Lewin's use of topology blurs some distinctions between inside and outside, a form of dualism between the conceptual and the material does seem to be retained. Such a dualism is not required if, following AN Whitehead (2004), we refuse to make a clear division between 'nature' and 'thought'. For Whitehead, the fundamental unit that is often taken to demarcate analytic logic from the world to which it (supposedly) refers is the *proposition*. This is typically thought of as a conceptual statement that exists in either a purely conceptual or a psychological universe, standing outside of the world of material, causal effects. But Whitehead argues that a proposition

is, in fact, an emergent property of a 'nexus' of elements which form a 'relational indicative system'. The proposition is not *about* the world, it is *of* the world. For instance, it is possible for propositions to refer to 'imaginary' or 'unknowable' states of affairs, such as whether or not Brutus intended to murder Julius Ceaser. Yet, in order for this proposition to emerge, there must be a series of material resources – plays, poems, relics, archaeological artifacts – which act as the basis out of which this proposition is derived, and through which she or he who he chooses to engage with the proposition may find the means to 'falsify' or 'affirm' it. The proposition is, Whitehead would argue, emergent within these materials themselves.

To give another example, Hutchins (1995) describes at considerable length how the navigation team abord the *Palau* searched for a solution to the emergency problem of plotting the ship's position following an engine failure. Their search lead them through a variety of technical procedures and shifting forms of social organization. What they sought – the proposition 'The Palau is at position x' – was neither 'in their heads' nor in some purely ideational world. It was precisely within the nexus of calculations, tools, practices and joint actions, awaiting 'actualisation' through their joint action. The conceptual is an immanent part of the world that becomes available to persons through their actions. In a sense it 'calls out' to a subject who is capable of thinking it:

> A proposition ... is a datum for feeling, awaiting a subject feeling it. Its relevance to the actual world by means of its logical subjects makes it a lure for feeling. In fact many subjects may feel it with diverse sorts of feelings (Whitehead, 1978: 239)

Propositions arise through a relational configuration of diverse elements. As psychologists, we are entirely comfortable with the idea that perception 'constructs' the environment to some extent. But Whitehead argues, to the contrary, that we come into being as subjects through embracing propositions that are latent within the world itself, and which become manifest when we are able to constitute our experience – to literally assemble ourselves – around the proposition (a process Whitehead calls 'concescence').

On this basis, we argue that rather than see life space as bounded by psychological ecology, it is instead the case that the life space which constitutes our ongoing experience is at every moment assembled out of a diverse range of topologically organised relationships, which provide both material and conceptual affordances and constraints. Our capacity to think and to act arises from the same nexus of relationships we have to the world – and indeed, are so intertwined that there is often little to distinguish them. The 'non-psychological forces' that Lewin describes are, on this account, invariant relations that persist through the continuous re-organisation of life space. For example, whilst the service user may expand their life space far beyond the unit through building broader relationships, the causal powers of the fence to prevent physical movement remain unchanged.

How then can we locate memory within life space? Lewin offers an important clarification in his assertion that:

> It is important to realize that the psychological past and the psychological future are simultaneous parts of the psychological field existing at given time t. The time perspective is continually changing. According to field theory, any type of behaviour depends upon the total field, including the time perspective at that time, but not, in addition, upon any past or future field and its time perspective. (Lewin, 1997: 207)

If life space is a field of possibilities, then these have a relationship to a relevant past and a potential future in at least two ways. First of all, if we follow Gibson's notion of 'affordance', then acting upon the possibilities offered by the environment commits us to a certain trajectory which has implications for how we relate to both past and future. For instance, the service user who opts to sit beside the wall, using it as shade and support whilst reading a book, is placing themselves on a trajectory where they can attract the attribution from others as 'in recovery', whilst the service user who treats the wall as a surface to express their frustration by banging and shouting, risks being treated as failing to progress and sinking deeper into their 'ill health'. Second, our relationship to the past facilitates a sensitivity to affordance. Mobilising the past within the present can qualitatively expand on the field of immediate possibilities. The 'total field' of the present is then informed by our capacity to engage with the past, which shows up in terms of realisable futures.

We can visualise this by combining two different diagrams:
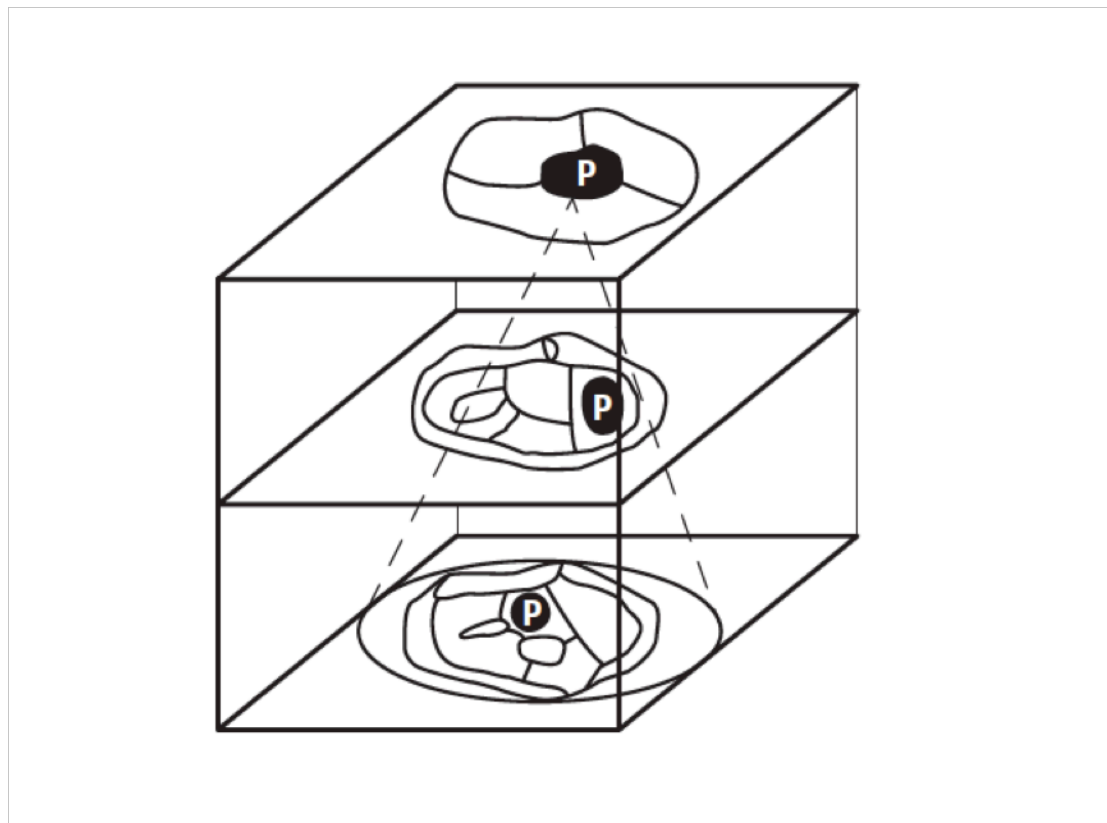
The three inner closed curves are taken from Lewin's (1936) depiction of life space. P stands for Person, with each line marking out a boundary within the immediate life space. The successive levels then show different 'expansions' of life space. Within each expansion, the relationships present in the previous remain invariant, but become complexified with the addition of new boundaries and regions. Superimposed on the levels is an inverted image of Bergson's cone diagram. This refers to Bergson's key notion that the past can be reorganised to be brought into a new relationship with the present. Each level then corresponds to an expanded version of the current field as it becomes combined with a different aspect of the past. In this way, there is a dynamic relationship between life space and memory. Remembering can expand life space through attaching it to different aspects of the past, thereby increasing sensitivity to what is afforded by the present.

We think of life space as having a diastolic and systolic character. Life space is pulled together at every moment in the unfolding of experience. It expands through our capacity to be sensitive to the affordances around us, which is in turn enhanced through memory. There are also invariances which are temporally remote, but which nevertheless structure the field of action. But at the same time, through our actions, we focus and contract the possibilities of life space, carve out and place ourselves on particular trajectories. It is this dynamic movement of expansion and contraction, accomplished through the insertion of the past into the present that characterises life space.

The following example demonstrates this ongoing transformation of life space through remembering. In extract 1, a service user describes his aspirations for the future as revolving around rebuilding his relationship with his family, beginning with his two children:

Extract 1

P: Yeah. I just want to get out there and see my son and my daughter...

I: Yeah.

P: ...really, really badly. Um, I've got it in mind to get, um, these people here to write up a visit, I can send a letter to my son and my daughter and say, "Look, here's a date and a time...

I: Hmm.

P: ...can you come visit me?" But, you know, I don't want to get upset. I hate it with my heart and I cry, I just don't want to do that again cos I've done that so many times in the street, you know, and I just don't – it ain't going to happen again, and I won't let it happen again. But if I see my son and my daughter, um, if it does – if I do get emotional – I'm not an emotional sort of person. If I do get emotional I probably will cry when I see my son and my daughter when I ain't seen 'em for a long time. Well, it's very emotional. I'll probably be like, "Hello, are you all right? How you doing?" (Laughs) You know, and—

I: Yeah.

P: Give my daughter a big hug and kiss on the cheek.

```
I:      Yeah.
P:      And, um, my son, give him a big hug and...
I:      Hmm.
P:      ...reunite with 'em and live my life again.
I:      Yeah.
P:      And going to the seaside, Hastings, and live down there.
I:      Yeah.
P:      And have them come down there and have a nice flat in where my
        dad used to live, have somewhere like that, in a nice quiet street,
        hear the seagulls and...
I:      Yeah, lovely.
P:      ...the sea front just down the road. You know, a bit of money in the
        bank and, you know. You know, and stuff, and just survive. And
        that's, that's all I want really. That's all I want. I just want to see my
        father in my life, you know, I want to see me nan and me uncle and
        all me family, you know. Yeah.
```

In the opening section of the extract, the service user describes his principle desire as that of leaving the unit to reunite with his son and daughter. This expansion of current life space is accomplished by pointing to the possibilities of establishing contact through letters and visits. So although there is, at present, no actual contact with his children, the route to a future reconciliation makes this relationship a conceptual 'reality' within his life space. But the opening up of this future also constructs a problematic relationship to the past. If he is to see his children, he will have to find the means to manage his emotions, which has clearly been an issue for him – 'I've done that so many times in the street, you know, and I just don't – it ain't going to happen again'. It is notable that his subsequent description of how he imagines their meeting is shorn of any reference to emotion, focussing solely on the physical acts of hugging and greeting. This then leads to a description of his aspirations for future living arrangements, which are framed mainly in terms of a return to stable relationships with his broader family. Across the extract, we then read a movement of expansion, followed by that of contraction, and finally a desire to render the future as a repetition of the past, but one where any potential emotional or psychological issues are rendered absent.

The participant in this extract had been detained in secure care for a long time, without understanding the reasons for being so. This is not an uncommon state of affairs; many of the participants in our studies described how they were unaware of why had they had been detained for so long (since they did not believe their index offence was related to the length of detention), and what the future held for them and their families. Many participants expressed a desire to 'return' to a past place, where they had once belonged, and to restore relationships with relatives, who they had often lost contact with. In this sense, their current life space depended considerably on a 'conceptual' relationship to absent others. But this relationship relied upon a notion of things not having moved on. It was as though their past had become frozen in time, such that they were unable to separate the past from the future – i.e. where people from the past would be the same in a future time, when they would meet them again. The

future would thus involve a 'return' to a past that had not altered over the course of many years. Ultimately, this results in a contraction of life space, where the future can only offer an echo of a lost past.

Setting Specificity
Autobiographical remembering is no less a distributed and co-ordinated activity than naval navigation. Although, as a form of memory, we might be tempted to see it as a property of individual cognitive architecture, exploring how persons engage in giving accounts of their past rapidly engages with the diversity of interactions and materials that are required to accomplish such acts. In a study of 'reminiscence museum' in the Netherlands (Bendien et al, 2010; Brown & Reavey, 2015), we analysed how older adult visitors drew upon their engagement with the exhibits in the museum to restructure both their interactions with their adult children, and to connect past and current personal qualities (such as autonomy or vulnerability) in complex and nuanced ways, with implications for their present status in the care setting. Such acts of remembering may engage relatively 'low grade' individual cognitive properties, but, as Hutchins shows, the emergent cognitive properties of persons-interacting-together-with objects-in-museum-space differ enormously from any constituent components.

The capacity to co-produce autobiographical memories is clearly not a 'natural' or 'untutored' cognitive property, such as object permanence or ability to sustain attention. Fivush et al (2014) estimate that autobiographical remembering emerges around the age of 4, and typically involves considerable scaffolding through interaction with care-givers. Autobiographical remembering would then be an instance of the sort of 'higher order' cognitive properties that concerned Vygotsky (1962), which have the quality of being rehearsed interactionally or publically before they are privatised within internal cognitive architecture. However, with Hutchins, we would argue that internalisation is misleading here because it occludes the extent to which telling personal stories is always a interactional process that mobilises considerable amounts of 'external' cognitive resources, from photographs and diaries, to cultural narratives and modes of valorisation. Our concern is then with this work of co-ordination that entrains persons with one another, and with an array of 'intra-psychic' cognitive resources. In fact, we would make the stronger claim that autobiographical remembering is a system-level accomplishment that displays a level of *setting-specificity*. That is to say that what we can do in relation to 'our' memories is entirely dependent on the settings where they are co-produced.

Properly speaking, it is then the setting itself that is the 'unit' that does the remembering. This perplexing claim can be clarified a little by following Bateson's argument against an opposition of 'mind' and 'nature':

> [W]e can assert that any ongoing ensemble of events and objects which have the appropriate complexity of causal circuits and the appropriate energy relations will surely show mental characteristics. It will *compare*, that is, be responsive to *difference* (in addition to being affected by ordinary physical 'causes' such as impact or force). (Bateson, 1973: 286)

As we have seen earlier, Bateson asserts that what is meant by an 'idea' is the capacity to respond to difference, thereby setting up a chain of further differences. Any system or 'ensemble of events and objects' which can collectively have the property of being sensitive to difference, through the capacity to compare, is then deserving of the attribution of 'mind'. But clearly there are 'minds', in Bateson's sense, that operate at different levels of complexity and which have more varied emergent cognitive properties. The collective properties of the crew-and-tools aboard the *Palau* differ qualitatively from a colony of ants, or a flock of birds in flight. Autobiographical remembering is a relatively 'high grade' emergent cognitive property, which marshals particular kinds of relationships between persons and the memorial environment. But if it is the setting itself that, for analytic purposes at least, does the remembering, then there is a secondary process whereby what is remembered is reattributed (or 'reterritorialised) with to the person who is the purported subject of the memory, with specific implications.

For example, during the admission process, service users may be asked by clinicians to provide various details about their life experiences as part of the process of preparing a treatment plan. This is known as 'formulation'. The purpose of this activity is not to 'get to know' the person, but rather to establish matters such as the level of risk involved in their case, likely adherence to medication, adaption to the hospital environment and so on. So the autobiographical remembering which is done here is shaped and steered around categories that have medical relevance. Yet at the end of formulation, the service users is placed in the position of having to 'own' a story about themselves that is really the product of the setting itself.

What then is a 'setting'? At one level what we are seeking to describe is a set of constraints and affordances that restructure life space. Significant events such as entering hospital or attending a court hearing would be instances of engaging with such limiting or facilitating relationships, but so too would routine events such as creating a social media profile or receiving educational test results. What we want to point to here are instances where there is a relational shift in life space with implications for the accounts that can be offered about one's past. Settings are then also, typically, defined by the operation of one or more practices operating in concert, such as schools, hospitals, or, indeed naval vessels. As Hutchins shows, a set of co-ordinated practices serves as a 'cognitive ecology' – an environment for distributed cognitive activity that draws upon historically and culturally embedded procedures (see also Hutchins, 2010 for a slightly different usage).

It is important not to allow the material infrastructure in and through which a practice is apparently enacted to define the limits of analysis. Much of *Cognition in the Wild* is set aboard the *Palau*, as though it served as a kind mobile 'natural laboratory' for Hutchins' investigations. By contrast, the secure forensic psychiatric units we have studied are only one 'site' within the practice. Service users remain within the practice long after they have left the unit, as they transition to low-secure care (i.e. hostels) and eventually back to receiving care

in the community. The practice is itself a distributed activity that can be difficult to localize geographically, since it extends across a multiplicity of interactions and occasions.

Perhaps the best approximation we can give of 'setting' is the term *assemblage* developed by Deleuze & Guattari (1988). This is often misunderstood as referring to a place or a situated activity. What Deleuze & Guattari describe is, by contrast, a process of arranging diverse materials that has its own specific 'logic' (or 'program'), along with procedures for constituting semiotic and practical-embodied relations (or 'regimes of signs' and 'pragmatic systems' in Deleuze speak). The assemblage of forensic psychiatric care, for example, would be driven by a logic of making psychological diversity visible through procedures for attaching bodies to discourses of risk and care. It would, from a Deleuzian perspective, be seen to do this through recruiting spaces into the process of assembling 'mental health' as a vastly distributed activity.

Settings also have complex relations to one another. Isabelle Stengers' (2005) concept of an 'ecology of practices' is useful here. As a philosopher of science, Stengers' longstanding concern has been with understanding how rival epistemic practices communicate and interact with one another in the historical evolution of western science. Stengers argues that practices have a degree of incommensurability with one another. Each creates for itself a specific 'cosmology', where scales of value and distinctions between what is and what is not 'adequate knowledge' are established. Moreover, certain kinds of entities can only be accorded a form of existence within a specific practice. For example, a 'schizophrenic' can only exist as such within a mental health practice that adheres to a particular diagnostic-nosological system. Stengers (2011) argues that practices do not exist in glorious isolation from one another, but rather enter into predator-prey relationships, where one practice actively seeks to dominate or consume the other – hence the recurrence of disputes between science, social science, business, Politics and faith (or 'science wars').

The antagonistic relationship between settings then creates tensions within the emergence of cognitive properties. The so-called 'memory wars' that emerged in the USA and Europe in the 1980s/1990s are a prime instance. As Sue Campbell (2003) describes, a debate over the authenticity of 'recovered memories' of childhood sexual abuse became a full blown dispute when psychologists and therapists joined with activists on either side to make claims and counter-claims about the status of autobiographical memories of traumatic events that emerged at some remove from the reported events themselves. The dispute can be seen as clash between rival epistemics – notably between the kind of knowledge produced in experimental psychology and that emerging from clinical and therapeutic practice. These different kinds of knowledge are, to some degree, incommensurable in that the foundational commitments of the rival practices necessarily exclude one another (see Ashmore et al, 2005). For experimental psychologists, any knowledge that does not meet the criterion of laboratory based controlled experimentation can only be 'opinion', whereas for clinicians, effects on memory produced within the laboratory are artificial and lacking in any ecological validity. Despite this, at the centre of the dispute are a significant

number of people struggling to make sense of what they think they remember, along with clinicians and parents who have been accused of malpractice and crimes which they deny. The real crisis, we might say, is in the cognitive ecology that is being placed under tension by the clash of practices, and amongst the persons who inhabit that ecology and need it to understand the complex and distressing nature of their personal circumstances.

We have argued (Brown & Reavey, 2017) in relation to the debate around false and recovered memory that it is important not to disqualify the claims made by adults who present memories of childhood sexual abuse on the basis that there are inconsistencies between the accounts they give in one setting (i.e. courts of law) and another (i.e. therapy). If autobiographical remembering is a setting-level accomplishment, then it is to be expected that recollections of the 'same' event that are co-ordinated within different settings will inevitably diverge, because what is being compared differs at the levels of the settings themselves rather than the individual who moves between them. Experimental psychologists such as Martin Conway have little trouble with the notion that an autobiographical memory is a 'transient construction' produced through a complex work of co-ordination in a cognitive system (Conway & Loveday, 2015). Where we think they are misdirected is in locating that cognitive system within the individual, rather than in the setting where the memory is actually produced. However, recognition of setting-specificity does not obviate the need to make legal judgments about testimony based on such recollections. Here we would observe that it is important to acknowledge the actual reference class of possible cases. The number of court cases where a distinction between 'true' and 'false' memory in relation to childhood sexual abuse is the decisive matter are infinitesimal in relation to the number of potential legal cases concerning abuse that are either not brought for prosecution or not even reported to legal authorities, based on longstanding statistical estimates (Brown & Reavey, 2017). In these small number of cases, saying what is remembered is a co-production of the cognitive ecology of the courtroom and associated socio-legal practices does not make it impossible to make judgments, since there are 'more credible' and 'less credible' co-productions which should be evaluated with reference to standard legal procedures. In fact, as Johanna Motzkau (2009) has shown, many judges are intensely aware of the co-produced nature of testimony involving distant autobiographical memory, particular in relation to child witnesses.

The pressing question for us in relation to setting-specificity is around how a given cognitive ecology fosters or transforms self-understanding in relation to autobiographical memory. As we have described, service users are often asked to give an account of themselves when they enter into secure care, which shapes the planning of their subsequent treatment. It also marks the point where they become 'patients' whose lives are understood within the setting as specific 'cases' that are on a trajectory of predicted recovery. In this sense, their lives up until the point of their admission are only relevant insofar as they inform the nature of their particular case. It can be surprising to learn that in the majority of secure psychiatric care (and particularly in forensic psychiatric care), the patient's biography is not a matter of great concern. Whilst most services provide some access to psychological therapies, the majority of the care is a combination of

pharmacological and behavioural management of the patient's condition. The aim here is to stabilize mental health to the point where the patient is judged to be able to self-manage their mental health issues. Present thoughts and behaviour are of concern, not past experiences. The anthropologist Mary Douglas once observed that institutions have a tendency to 'take charge' of the memory of those who live or work within them. Aspects of the past that fit with the practices of the institution are embraced; those that do not are rendered invisible:

> Any institution … starts to control the memory of its members; it causes them to forget experiences incompatible with its righteous image, and it brings to their minds events which sustain the view of nature that is complementary to itself. It provides the categories of their thought, sets the terms for self-knowledge, and fixes identities (Douglas, 1987: 112)

Douglas reasons that this 'control' of memory has the aim of fostering self-images and self-knowledge which complement or support the 'categories of thought' that define the institution. In this way, persons find themselves made over in terms of the desired images of whatever practice they now inhabit. In psychiatric care, there are generalized models of what makes a 'good' and 'bad' patient. The former is able to narrate their history as a steep decline into mental ill-health that has been dramatically halted by the entry into hospital, where they have now come to realize that they need strong intervention, and are committed to their own recovery. The latter is often unable to explain why they are in hospital and feel that they should not be there, and that their current circumstances are down to misfortune for which they are, on the whole, not to blame. Service users who have strong communication skills and the cultural resources to know how to navigate institutional practices (usually because of their socioeconomic or educational background) are able to work out how to position themselves in relation to these models, and thus spend less time on a 'section', whilst those lacking in such social capital are not, with predictably opposing outcomes.

As a setting, secure forensic psychiatric care provides very specific constraints on the autobiographical remembering, and thus, the life space, of service users. In one of our first studies (Brown et al, 2013), we encountered the following interaction at the end of an interview with a patient:

> **Extract 2**
> R   How do you think the interview went?
> P   Yeah. Yeah, I think the first bit was the hardest thing
> R   Yeah (laughs)
> P   Like tell me about yourself, I've never really done that before (laughs)… I wasn't used to that, no-one's ever asked me.

According to the patient, this research interview with an outsider was the first occasion where she had been asked at any length about her life as a service user both prior to and since admission to the unit. We found this same point made time and again by participants in the research. We subsequently came to the view that the unit acted as a 'regime of forgetting' that was focused almost

exclusively on the fostering of wellness in the present rather than understanding the past histories (and possible futures) that constituted the broader life of the service user. It was not the case that histories were being actively repressed, rather that they were simply seen as irrelevant. What predominates is a practice of perpetual observation and monitoring, to ensure the level of patient risk (to self as well as others) is constantly assessed and accounted for. If one enters a forensic ward, this can be evidenced by the swathes of nursing staff performing regular checks and spending large proportions of the day typing up observational notes on patient behaviour and symptoms. The usual markers of identity, such as age, ethnicity, sexual orientations, and the index offence are not perceived to be particularly noteworthy, as stabilization in the present is prioritized. This *presenteeism* thus necessitates a break from the usual means of establishing identities and agency in everyday life, which necessarily involves attending to an individual's past, present and future; in other words, the person as a whole.

If autobiographical remembering is a setting level accomplishment, then the lack of concern for co-producing accounts of personal histories, coupled with a relative dearth of material resource for doing so (since service users are allowed very few personal possessions during their time on the ward, and do not have access to memorial infrastructure such a social media or maintaining diaries), means that autobiographical memory inevitably atrophies. In the following extracts, we see some of the effects of the limited cognitive ecology of the setting on the life space of service users. Patients routinely described how they were not required to make sense of what had happened to them. This left them in the peculiar situation of not being able to address past events directly, but instead to manage their relation to their own past with limited materials. In extract 3, one service user describes a distraction strategy:

> **Extract 3**
> P: I like, um, wooden things, like woodwork. I collect things in the ground and make other things. If I see it lying around and I think it can be used I'll use it.
> I: (Laughs) So was that, was that something that you did before? Or is it something you've started doing since you've been here?
> P: Um, I just picked up things and found out I could do it really.
> I: Great. Great, so, um, why do you like doing that kind of thing? What do you get out of it?
> P: It keeps me occupied. Stops me thinking about the past. And I used it initially to concentrate my ideas into doing things creative instead of self-harming.
> I: Right, okay, so it's kind of—
> P: And now it's just – I just continuously do things and don't realise that I wasn't thinking about self-harm.

It is worth noting that this service user is a patient on a Personality Disorder ward. This is a diagnostic label for a mental health condition that is considered by many clinicians to be unresponsive to psychiatric medication. So, unlike many patients in the unit, this service user is not experiencing the kind of cognitive and

physical impairments brought about by large doses of medication, with the effect that he comparatively under-stimulated by the relatively restricted environment, and is experiencing episodes of rumination of past events. Here, he describes how he seeks to occupy the present with useful activities, such as basic woodwork, and in doing so has created a new self-narrative as a curious investigator of his (minimal) environment. On the one hand, what we can see is a creative effort at expanding life space when the environment contains very few useful affordances. But on the other, this demonstrates that failure to resource the cognitive ecology of the setting with regard to memory simply leaves service users unable to properly address their own histories in an adequate way. These issues continue in extract 4, where a female service user describes how a lack of insight or curiosity about her past on the part of the institution was a contributing factor in the strained relations she perceived between staff and patients:

> **Extract 4**
> I: So why have you moved round so much?
> P: I dunno, I I just don't understand it.
> I: Right
> (later)
> P: Patients don't come here because they're joyful. Have to have empathy, sympathetic way of dealing with people, you know? … for me, I'm not mentally ill, I'm just…
> I: You're not?
> P: But you know, talking about my baby fathers and um, people's life story, you know, it's not fair. Some people they are brought up – they can't help their life. You know?...I'm not saying about people here, but some people they have – As I say people their life to live. And you know, you can't just be upset with them because you know know what's happening in their house, or what's happened to them.

For this service user, her difficulties are not attributable to any 'mental illness', they are her response to troubling life events. She believes this to be the case for all patients on the ward, observing that 'Patients' don't come here because they're joyful'. The severing of this connection between a person's past and their present behaviour is a source of stress for Dora, because she feels staff cannot experience sufficient empathy or sympathy, due to a lack of awareness concerning the circumstances of patient's distress and difficulties. Dora's life-space is compressed, due to 'Too much stress, too much to deal with' and the perceived inability of the staff, and the institution more broadly, to recognise how her past connects to her present. The future then feels very uncertain because she has been unable to make sense of these temporal connections, since there is no opportunity to engage in a co-production of autobiographical memories.

By contrast, where the ability to co-ordinate a relationship to the past within the setting did exist, this allowed for the expansion of life-space, via the building of

continuity within relationships, and a displacement of any abstracted (and negative) identity labels, relating to being mad or mentally ill:

Extract 5

P: Knowing me and my history makes a difference

I: …what difference do you think it makes that you know the staff and the other patients here?

P: Cos they use – they know why you're angry.

I: Yeah.

P: Yeah. Whereas if you was just to come onto the ward and see me angry or something and shouting they probably would go, "That guy's a madman, I'm out of here." But another person would know why I'm … So they would deal with it differently.

I: Yeah.

P: But my primary nurse, I have a good relationship with him. I've known him since the first day he started work in a different hospital, and we just meet up here and he's my primary nurse, so he knows me well enough to know that there would be a reason instead of just me getting up and doing it for no reason.

One further consequence of constraints on space to explore and examine the past and mobilise it in relation to the present and future, was the fixing of memory. The past is then experienced as frozen, or inert, such that the service user feels estranged from her or his history, as though it had been 'halted'. In its place, an idealised version of past relationships emerged. In the final extract, the participant has been detained for a considerable time, without understanding the reasons for being so. This was not an uncommon state of affairs, as many of the participants did not believe their index offence was genuinely related to the length of their detention. Many participants expressed a desire to 'return' to a past place, where they had once belonged, and to restore relationships with relatives, who they had often lost contact with. But such a version of their agency in the present relies on a notion of things not having moved, including the people who populate that past. Though it might at first seem peculiar that such a preserved version of the past is drawn on to make sense of a future outside the unit, it makes sense when we consider the disconnect between the past and present on the unit as a whole, and the compression of life-space more generally; where temporal continuity is usurped by present monitoring and concerns of current stability and risk.

Extract 6

P: I haven't done anything out of the ordinary like, um, anything wrong, you know. Basically I was homeless, um, I was living in Peckham, that's where I come from X Street. Um, and all my family moved away to X, some of my family. Then I moved down to there and, um, I used to go to this day centre and we used – you pay a pound, you get a dinner, or breakfast...

I: Hm-hm. Wow.

P: I've been with her for fifteen years, um, and basically, um, that's it
        really…And keeping me away for no reason at all, you know
(later)
        and u, my daughter, a big hug and kiss on the cheek, and my son,
        give him a big hug and reunite with 'em and live my life again.
(later)
P: You know, I remember [my son] when he had a little boy's voice,
        his voice suddenly changed, you know. But when I get out I just
        hope he looks the same as when he was a little boy, you know.

The service user here comments on his own participation in his detention, in a manner that constructs a limited sense of agency. He describes how he has been kept away for 'no reason', and does not understand the rationale surrounding his very extended detention. For him the present is devoid of agency, signifying a life-space severely compressed by his lack of understanding of the institutional decisions and processes, and his incredibly long detention. What is of particular interest here is the relationship between this perceived lack of agency and his presentation of the past, present and future. It appears that the past has been preserved to such an extent that time has remained static, children have not grown or developed, and he will be able to return once more to a life that can be taken up and lived anew. If relationships in the past (between his family, including his son and daughter) remain the same, then some semblance of agency is kept intact in the present, amidst a landscape of uncertainty and a curtailing of agency through detention. However, to have a vision of being able to live one's life again rests on people staying the same, or remaining childlike, lost in time, and indeed space, since a return to a previous home place is integral to the story. This is a vision of the past reliant on dis/continuity with the present, and little sense of the relevant others as fully formed subjects – subjects who change, move within time, and progress or develop. One could argue that this service user is living in denial of his past and present actions leading to his ongoing detention. Whilst this is certainly possible, we would emphasise instead that it is the impoverishment of the setting-level cognitive properties on the unit – the lack of resources and means of co-ordination – which prevent service-users from engaging with the kinds of meaningful co-production of their personal histories that create these kinds of 'frozen agency', with correspondingly poor implications for recovery.

In research that we are just beginning in collaboration with a large Charity who provide secure psychiatric services, we are seeking to further understand how and when the co-production of autobiographical memories in these kinds of settings might be beneficial to service users. We aim to contribute to the enrichment of the cognitive ecology of wards, such that service users might be able to expand their life space within the limited constraints and affordances of secure care. It seems to us that transforming such care from 'regimes of forgetting' to 'spaces of distributed remembering' might be a route to improving recovery and better preparing service users for their future lives outside the unit. In part, this is because the ways or relating to the past and inferring one's own agency that are learnt during detention are carried with the service user. We have termed these kinds of learning 'Psychologically Modified Experiences'

(PMEs) (see Brown et al, 2013). These are way of turning around on ones own experience that are systematically shaped and reorganised through contact with psychological practices. As we will shown in the penultimate section, when PMEs travel beyond the practices in which they are learned 'into the wild' then all manner of unintended consequences may result, with implications for the ethical standards that we, as psychologists, hold for ourselves.

Experience-ecologies
The anthropologist Tim Ingold (2013) uses an interesting example to reflect on the nature of what it means to say that something 'endures'. He points to prehistoric mounds that are located in many parts of Europe. These are large earth structures have been studied as the products of human activity, raising questions as to what purpose their original archaic fabricators might have had in mind. Were they symbolic representations of a forgotten cosmology? Attempts at a monument of some kind? Or perhaps even works of art? In truth, we are unlikely to ever properly know. Ingold then reverses the question – rather than ask what these things are, and how they have survived over time, we might instead see the qualities of these mounds as having been acquired precisely through the activities that they have attracted throughout the ages. We are not the first people historically who have asked what the mound is, or what it is for. Mounds have attracted such questions and practical investigation throughout their existence. In a certain sense the existence of the mound *is* this ongoing unfolding of practical activity around them. Ingold then argues that the mound is not a stable 'thing' with a clear identity that *endures* through time, but is instead an entity whose identity is temporally distributed into distinct parts and which therefore *perdures*. To put this in the language of process philosophy, the mound is involved in a process of becoming, and its identity – what it is and what it does – is a question of the entirety of that process, of the 'becomings' relative to the activities that it has attracted across history. The mound *mounds* or *becomes-mound* throughout history.

Let us place this back within the language of ecological psychology. Imagine that we saw the mound as a Gibsonian affordance. We might then ask what kinds of actions it might afford, such as a surface to climb, a means of gaining a overview over the surrounding environment, a space for excavating and storing valued items and so on. Leaving to one side the question of how different kinds of organisms might encounter the mound and the variety of affordances it might then constitute, what could we say about the history of the mound-as-affordance from a human perspective? Again, we would say that this is to explore how it perdures over time, the various properties that it acquires as a consequence of the activities that it attracts. For example, if the mound affords a kind of spiritual experience, then this is an emergent temporally structured property that has arisen from the becoming-mound of the earthwork.

Now take this one step further. What would we say of cognitive properties over time? Can they be clearly defined in their identity and mapped throughout history? Or are they too to be studied with regard to their perdurance and becoming? Take autobiographical memory as one such property. We know with some degree of confidence that people have told their own personal history

across cultures, and throughout history. We can also be fairly secure in asserting that the kind of stories people have told about their past have differed in terms of their narrative structure, focus on particular events, moral and ethical standpoints and so on (Carruthers, 2008). We also know with some degree of conviction that the media through which the stories have been told has changed, ranging from the 'balladic' tradition in oral cultures (see Fentress & Wickham, 1982) through the invention of 'autobiographical' narratives (see Freeman, 1992), all the way to the current image-dominated constitution of self in social media (Goodings & Brown, 2011). But what if this property – mobilizing accounts of past personal experiences in the present – were not a stable thing, but was in fact was an unfolding process, where practices of relating to one's own history have been historically derived from one another in an ongoing becoming? Autobiographical memory would not then be a stable property of a relatively unchanging cognitive-neurological architecture, but instead the name for an always-evolving experience that emerges from an historical structured trajectory of previous practices, and which is assembled from a contingent repertoire of cultural, material and cognitive resources.

Ed Hutchins (1995) makes a similar case for 'navigation' as an emergent cognitive property. He insightfully observes that many of the devices and representational media on the Palau are the product of a rich cultural-historical layering of practices. The modern day sailors engage on a daily basis with Ancient Greek geometric solutions, 4th Century Arabic numerical systems, , Classical astronomy, 19th century algebra and 20th century plotting devices. Much of this comes already designed-in to the tools and forms of reasoning that constitute their immediate distributed cognitive architecture, without the sailors needing to recognize or reflect upon the perdurance of navigation as a cognitive property that has become what it is for them at that moment through a complex temporal movement. As Michel Serres puts in, in the case of geometry, in engaging with the cognitive properties of our ancestors, we become as much 'Greek' as we are 'modern', without knowing that we do so:

> Iranians, Spaniards, French, English and Tamils – we all speak Greek when we say parallelogram, logarithm or topology . . . Nothing remains of the cities of Cyrene or Perga, or of the Elean School or that of Croton, not a temple or weapon, no trade or workshop, but the list which runs from integers to conic sections has not aged one bit, even though sometimes we do not understand the terms number and diagonal in exactly the same way as the ancient Greeks. (Serres, 1995: 77)

What this suggests is that in order to understand a given 'higher order' distributed cognitive property, we need a way of describing the amalgam of cultural-historical traces that define its ongoing becoming. John Sutton (2008) has proposed a 'historical cognitive science' that takes as its object the various forms of distributed cognition that structured a collectively co-ordinated cognitive property, such as autobiographical memory, at any given point. Evelyn Tribble and Nicholas Keene (2011) have responded by developing Hutchins' (2010) term 'cognitive ecology' further into an historical enquiry into how the

co-ordination of spiritual and pedagogical practices afforded emergent distributed cognitive properties of remembering in Reformation England.

Whilst these approaches seem excellently suited to providing a cross-sectional analysis of a given historical period, they do not quite capture the lamination of multiple conceptual-practical operations within a given emergent property. Autobiographical remembering, for example, retains within it culture-historical traces of oral, written and visual practices and cultures across a large number of centuries. These traces are relevant to understanding what autobiographical memory is, because they remain active in structuring it as a contemporary cognitive property.

We want to propose the term 'experience-ecology' as a framework for exploring this becoming of cognitive properties. It seems to us that Tribble and Keene, along with Hutchins, have missed a crucial aspect of how ecologies function. They are, of course, defined by contemporaneous relations between entities that exist in proximity to one another, such as animals and plants that share roughly the same topographically defined region. But in biological terms, what an organism does, does not merely reflect its current place in a relational structure, but also depends on its own specific evolutionary history. The major organ systems of any creature have evolved as 'solutions' to environmental problems, and allow for a sensitivity to particular kinds of affordances in the world around them. Some 'solutions' seem to become outmoded and reduce in functionality – so called 'vestigal traits'. But the vast majority of organic 'solutions' continue to contribute to the functioning of the organism, although they may be reorganized to some degree. A recent example in humans is the discovery that there are aspects of the human genome that are 'Neanderthal' in origin – and hence, presumably entirely unsuited to modern living – but which are still doing an active work of coding in our genetic constitution.

If we now follow Bateson in arguing that the conceptual/propositional aspects of our experience emerge from the world in ways that are intertwined with our material constitution, we can see that the ways we think about ourselves, the very structure of experience, carries within it its own history. An 'experience-ecology' then refers to the distribution of ways of knowing and being across a defined series of settings, wherein the 'experiences' that sit in relation to one another have a perdurational character. That is to say, their identity lies with their processual unfolding as much as it does in relation to one another. The value of this term is that it allows us to grasp something of the cultural-historical structuring of cognitive properties, without assuming that these are stable over time, or indeed in relation to other aspect of the 'ecology'. In other words, this is a way of thinking about transformations in how we think and act, whilst maintaining a sense of the complex patterning of such transformations.

To exemplify how we want to operationalize the term, we will describe a brief history of how psychiatric practices have engaged with and made use of the past experiences of service users. The 19th Century witnessed an explosion of asylum provision for the mentally ill, with the view that a more humane approach to mental ill-health could be achieved via confinement and treatment by medically

trained professionals, rather than religiously motivated interventions. The secularisation of mental health treatments coincided with the enlightenment period, which established a system of scientific classification as a means of identifying the mentally disordered from the sane (Porter, 1997). Furthermore, the belief that scientific classification, supported by careful observation of reliably observed symptoms, would lead to cures for mental illness was gaining purchase in mid to late nineteenth century European psychiatry (Bleuler, 1901).

However, the reality was an ever-growing population of mentally ill people, confined to hospital for larger periods of time, where a sense of the person's journey through madness could be closely monitored (Andrews et al, 1997). One of the practices found in this period was the careful recording of the patient's thoughts, behaviours and symptoms, coupled with a more extensive knowledge of their character (though only the character that presented itself within the walls of the institution of course). For more educated inmates, case notes, and diaries found from that time indicate a more novelistic account of their life history and life in the asylum, and there appears to be some attention paid to their personality and pre-occupation with specific activities, such as dancing, gardening and other pursuits offered by the asylum administration.

One could argue then that inmates were at least 'subjects' of institutional care. Their day-to-day lives were subject to surveillance and intervention, and observations about the reasons for their admission to hospital were subsumed by the more pressing issue of whether they were compliant and stable (as measured by their cooperation with asylum rules and activities). As subjects of the institutional regime, it appeared that the interpretive capacities of these earlier inmates was not as relevant to medical staff, as their ability to follow clearly laid out regimes and a systematised programme of work and occupational therapy. The person's past, whilst on the whole not explored with patients, was then assessed according to the practices of institutional regimes in place, including moral regimes and compliant behaviours. We would then argue that the institutional setting of the asylum was central to how patient memory might be readable by both professionals and patients alike at that time. In contemporary culture, mental health provision has been transformed, and perhaps memory alongside it.

The experience-ecology for mental health, for example, has significantly changed in some ways, with the introduction of pharmaceuticals and the introduction of care in the community. The introduction of pharmaceuticals has become the predominant mode of treatment for mental illness, since the beginning of the 1950's. There was great optimism that drug treatments would transform the treatment of mental illness, supplanting the need for lengthy inpatient stays, offering the possibility of freedom to tens of thousands of people, who would have otherwise become chronic and institutionalised mental patients.
One of the consequences of this hiatus in hospital based treatments, however, was a loss of ability to observe the life of the 'illness' over time, such that patients' past, present and future became monitored via well-kept records of outpatient visits and medication compliance, rather than any degree of detailed narrative regarding their everyday thoughts and feelings, which were more possibly

during a lengthy hospital stay. The opportunity to 'relate' to staff or other patients of course was further severed by the introduction of a new community based treatment programme.

A further consequence of this new regime was the displacement of the past via the new pharmaceutical treatment economy (Hornstein, 2009). An excerpt from a diary of a young man diagnosed with schizophrenia in the 1960s here illustrates how drug regimes at worst could be used as a way of displacing memory, such that the person was not afforded access to a past that required detailed attention and interpretation:

> 11/2/69. Ran out of Mandrax this morning. Felt awful. Saw Brewster who told me that my mother had been in Tullington [a mental hospital] on two occasions and had committed suicide. She prescribed Valium 5 mg t.d.s. Also my chloral was going up – 100%. When I told her of my condition she asked about ECT. I said I would sign.

According to two of the clinical psychologists who reviewed this case in later years "It would seem that the nurse noticed his shock. However, she offered no counselling, only additional medication". In this example, we can see how David is prescribed medication to 'deal' with the disclosure of his mother's suicide. The introduction of pharmaceuticals in the early 1950s meant that memory practices were moving more towards the eradication of the need to necessarily look to the past for answers relating to a person's distress. The project was more compliancy with a pharmaceutical regime and the reduction of 'symptoms' that were not necessarily interpreted in the light of a person's set of life experiences. As Andrews et al note, psychotropic drugs gave "psychiatry a recognizable medical form of treatment. They were popular with psychiatrists on these grounds because they required little knowledge of the patient's background" (Andrews et al, 1997: 701). The reduction of long stay patients and the eventual closure of the large asylums in the late 1980's resulted in outpatient appointments being the primary form of contact between mental health staff and service users – unless acute care was required. The new outpatient and more community-based regime was focused instead on the person's symptom presentation (notably the operation of psychiatric medication on symptoms) rather than a richer novelistic depiction of the person's mental state. There was simply less time and space to concentrate on a rich account of the person's day to day existence, and the assumption is that medication would overwrite any need for this. Care could be delivered in the community in a way that was more efficient, supposedly providing service users with more freedom.

The psychiatric outpatient regime involves appointments, which range between 10 and 15 minutes, occurring every three months. The purpose of the appointment is mainly to discuss symptoms, risk to self (or others), and compliance with treatment, with many service users reporting undue conversational attention towards the effects of the medication, rather than the distress itself (Bentall, 2009). Medication also has an effect on metacognition – how users think about their own cognitive processes, including their capacities to remember. As David (the young man described above) writes:

> 2/1/66. Will I ever be able to think again? At the moment I am physically and mentally incapable of doing anything. This is what they have done not for but to me.

Another consequence of the way in which services operate in contemporary society is the manner in which people are invited to recall their experiences. McGrath & Reavey (2016) describe how time-limited interactions with mental health professionals, and the spaces in which those interactions occur (i.e. in community or hospital buildings which do not provide the opportunity to express emotions) lead to a displacing of the past, in order to present a more medically accessible reading of mental health. Service-users reported how their recounting of their recent (and distant) past and their feelings during the period between appointments was shaped by the setting (where the opportunity to explore their memories was constrained by the lack of appropriate privacy), as well as the questions asked by the mental health professional, which overly focussed on their present 'stability'.

Once again, we are invited to think about how these contemporary practices of mental health care, not only affect present distress, but shape our relationship to the past – both distant and recent. Psychotherapy is one known space where discussions around the past are certainly possible, and clinical psychologists have argued vociferously for mental health difficulties to be viewed as forms of communication relating to life-experiences (Bentall, 2003; Hornstein, 2009; Cromby, Harper & Reavey, 2013). Though psychotherapy and other forms of talking therapy are available to some, the opportunity to share meanings relating to past experiences, and to develop a shared discourse on how the past may be relevant to the present, are somewhat limited in public mental health service provision. For those with the more 'serious' mental illness diagnoses, these talking therapies are even more limited due to the belief that medication should be the primary treatment mode.

Finally, in recent years, another interesting move made by those advocating chemical interventions for mental distress, is the introduction of drugs that do not necessarily eradicate memory, but drugs that work to transform it. A recent article in the journal Biological Psychiatry discusses how the traumatic memories of patients with PTSD can be neurologically reconfigured, such that recovery is facilitated via the generation of a different kind of relationship to such memories – a relationship that can be characterised as less emotional (and hence threatening) and more blunted. Describing the process as 'reconsolidation' the authors argue that "[a]ltering such dysfunctional memories is a crucial step in the successful treatment of these and other mental disorders" (Shwarber et al, 2013). This can be achieved by working to de-couple the fear response associated with the memory, such that the brain no longer 'reads' the memory as threatening. Thus, it is not necessarily relevant to connect the fear response with the person's interpretation of it (e.g. to see what the 'function' of the fear might be – i.e. protection etc,.), it is sufficient to eradicate the dysfunctional response entirely, so as to rid the person of their mental disorder.

It is interesting that the person in contemporary mental health practices is not necessarily centre stage in practices relating to memory. Following the idea of a reconstructive model of memory, the idea appears to be that memories do not necessarily 'belong' to us, but are subject to a variety of influences, including professional influences that can change them completely. This poses a number of ethical and political challenges, around the treatment of the 'subject' in mental health practices, and how those practices and settings alter our relationship to remembering.

What we hope this brief historical account shows, is that the distributed cognitive property of autobiographical memory amongst mental health service users has undergone considerable restructuring. At each point in this transformation, different elements, such as the shift away from care in the large asylums towards care in the community, and the related move from a concern with biographical details toward the systematic monitoring of the effects of pharmacological intervention, create a different cognitive ecology for co-producing a relation to the past. However these shifts are layered upon one another and the logic of one practice is translated into the logic of the successive practice. There is something of the old asylum system, as well as something of the 1950s 'pharmacological boom', in how the modern psychiatric institutions that we study operate. As a consequence, the distributed forms of autobiographical remembering that are afforded in contemporary institutions carry within them a set of culture-historically sedimented traces of previous cognitive properties.

An experience-ecology is then a way of talking about the 'becoming' of cognitive properties at any given moment. The sorts of questions we might ask concern the emerging ecological relations between different kind of experiences. What does it mean for mental health if 'personal histories' are reducible to the observation of pharmacological effects? How do service users construct a usable future if they undergo a prolonged period of detention where their past is deemed irrelevant? To what extent does a discourse of risk structure a relationship to oneself over time? How are evaluations of self-agency accomplished when there is 'frozen' relationship to the past?

These are not abstract questions. As we suggested earlier, as psychologists we have a role in shaping the experience-ecology, either directly through our participation in 'applied' psychological practices, or indirectly through the kind of theorizing and research that we do. We contribute to the constitution of specific kind of experience by providing the resources that become 'designed in' to cognitive ecologies. The Psychologically Modified Experiences that begin in the laboratory or the clinic are ultimately carried out 'into the wild', as they become remediated through practices that either offer them up or impel users to adopt them as ways of relating to themselves. All of us, as members of the extended community of psychologists, bear some responsibility for the 'ecological effects' of what the epistemic practices of psychology bring about.

Bateson famously asserted that 'there is an ecology of bad ideas just as much as there is an ecology of weeds' (1972: 459-60). What we want to bring into focus

with the concept of experience-ecology is our ethical grounding in the in the co-constitution of this ecology. We are used to being evaluated in terms of the scientific rigor of our enquiries, or the standing with which our thinking has in relation to paradigmatic norms. These are important matters, of course. But they shrink beyond measure when compared with the ecological value of what it is that we do. We propose a new measure against which to judge ourselves: given the current unfolding of the experience-ecology to which my research contributes, in what ways could what I do be said to expand or reduce the ecological-conceptual diversity of how we understand ourselves?

Endpiece
We began with the paradoxes of laboratory-based psychology. We end with the difficulty of positioning ourselves in relation to the structuring role that psychology has in 'experience ecologies'. The thread that runs throughout this paper is in the value that various forms of 'ecological thinking' has had for the discipline. Ecological thinking has been a disruptive force, but also one that has impelled transformation on the study of Psychology. We have spoken at various points of our desire to overcome any neat divisions between different approaches within Psychology, whether they be grounded in methods, epistemology or even ontological assumptions. It has taken us some time to personally overcome the prejudices that follow from identification with one tradition over another. We hope that you can hear something of the work that we are doing on ourselves throughout our argument. It takes a lot out of us to type the word cognition without surrounding it in scare-quotes (i.e. 'cognition'). To have arrived here, we would like to express our profound gratitude to researchers from all corners of the discipline – experimentalists, clinicians, applied practitioners, theoreticians – who have engaged with us over the years and have enriched our thinking. We are committed to contributing to the development of dialects of psychology where the divisions that seem to be so pressing are supervened by concepts that create what Deleuze called 'new images of thought'. We tentatively call such a project *process-ecological psychology*.

But we conclude where we began with a reflection on the paradoxes of psychological enquiry. Here is a picture taken in the course of a piece of research that we undertook in order to explore 'embodied enquiry'. We have described the research and the process we undertook elsewhere (Brown et al, 2011); it is barely relevant here. Just look for a moment at the image. What does it remind you of? A set of researchers who are advocating a new space for 'psychological truths' perhaps? A tension between old and new knowledge? Who is to say. But we confess that we now identify neither with revolution nor reformation in the discipline. The questions we all of us ask in and of psychology are not easy, and we do well to recognize that our problems differ less than we think from those we take to be our founding figures