Chapter 4: Embodied Situated Cognition: A Synthesis

"The heart has reasons that reason cannot know".
Pascal, *Pensées.*

Until the late twentieth century Pascal's point was well made, for our most fundamental motivations and the wisdom in our bones lay beyond rational understanding. But the synthesis I offer reveals how reason can at least learn to listen to the reasons of the heart. Embodied situated cognition is a complex phenomenon that cannot be adequately understood from a single perspective. A dance serves as a useful metaphor: We can analyse the choreography, music and physical execution of a dance, but this can't tell us how it *feels* to perform or watch it. Similarly we can interview the dancers, the audience and perhaps dance the steps ourselves, but we still won't understand how and why the choreography is effective. I thus adopt two complementary perspectives throughout: one focused on the phenomenological and experiential intimacy of embodied *knowing* and other on the physiological body engaged in embodied situated *cognition.* My experiential analysis draws primarily on phenomenology and anthropology, while my more physiological perspective integrates the cognitive science of embodied situated cognition with Bourdieu's theory of habitus

Despite a remarkable degree of agreement across a wide range of disciplines, the considerable insights of cognitive neuroscience have rarely been integrated with those from sociology or anthropology, and even those who have attempted such a synthesis don't draw on the breadth of material I have. We are still at an early stage in embodied situated cognition research, and I don't attempt to construct a full theory. I do, however, claim that new insights emerge that can illuminate the path of ethnographic exploration. I explain this synthesis in three thematic sections based on theoretical approaches reviewed in the previous chapter: theories concerned with metaphor and habitus; perspectives emphasising cognitive extension; and those studying the role of perception. I highlight interdisciplinary coherence, reveal previously unrecognised relationships between theoretical strategies and thus present a systematic integration. In some cases one theory can strengthen another: for example, Lakoff and Johnson's cognitive metaphor theory can elucidate the mechanism underpinning Bourdieu's habitus. I also introduce new material, including Gibson's "affordances" (Gibson, 1979), that are not strictly concerned with embodied situated cognition, but make a useful contribution to my model. I then consider challenges and critiques to the claims of embodied situated cognition. Throughout this chapter I apply different theoretical stances to existing

fieldwork, sometimes drawing on my review of Eco-Paganism literature, and in the final section I demonstrate the explanatory power of my model.

THE ENACTIVE PROCESS MODEL

Embodied cognitive science "requires thinking through evidence drawn from a multiplicity of perspectives on embodiment, and therefore draws from multiple methodologies" (Rohrer, 2006: 14). Embodied cognitive science thus offers a sound basis for an interdisciplinary theory of embodied knowing, and enactivism is one of its foremost theoretical programs. Enactivism, which has a "reputable pedigree" (Preston, 2003: 30) and is grounded in "about fifty years of good research" (Varela, 1999: 71), builds on the insights of Merleau-Ponty and is either consonant with or has explanatory value for all the thinkers reviewed. Ingold's "sentient ecology" (Ingold, 2000: 116-17) is fundamentally an enactivist approach, as is Abram's less theorised model (Abram, 1996), while Preston applies it in his program of grounding knowledge in place (Preston, 2003). I described above how Lakoff and Johnson's (1999) enactivist model plausibly explicates Bourdieu's habitus, and although enactivism is more radical than Clark's stance, it is by no means incompatible with it. For all these reasons, enactivism forms the core of the model I apply to my fieldwork.

Gendlin can be understood as an enactivist, although he does not identify as such. However, on Gendlin's conception 'the body' extends beyond the skin into "a vastly larger system" (Gendlin, 1997: 26) in a way similar to the model offered by enactivism. Given that Gendlin's implicit is grounded in our memories, history and culture as well as immediate sensory input, I expect that it has a tight relationship with habitus, which I have already linked to Lakoff and Johnston's embodied metaphor theory, but this must remain a hypothesis that would benefit from further research.

By combining enactivism with Gendlin's philosophy of the implicit, I synthesize a model of embodied situated cognition with more explanatory power than either has alone. This model is consistent with other theories discussed, and in several cases elucidates them. Given that Gendlin's key exposition describes his theory as *A Process Model* (Gendlin, 1997), I henceforth refer to this as the enactive process model. The enactive process model reveals that our being-in-the-world is bound up with the immediate environment and embodied cognition draws on it as a source of material to think with. Because different local environments provide different metaphors to think about the world they enable different ways of thinking such that in a given place there will be

some thoughts we simply cannot think, because we lack the metaphorical substrate.
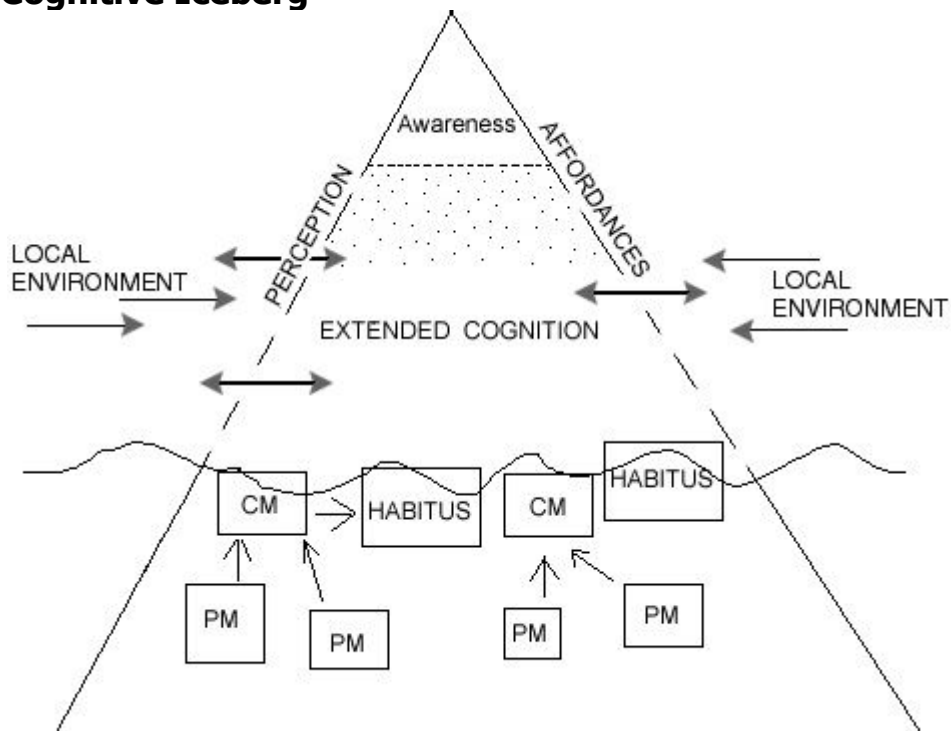
The Cognitive Iceberg

Fig 1: The Cognitive Iceberg

My 'cognitive iceberg' schematically represents the complex processes of embodied situated cognition. It is inevitably an oversimplification,[1] and presents the local environment and physical body as more separate than the enactive process model suggests. I explain the enactive process model in detail below, but in summary, the whole 'iceberg' triangle represents the physical body, while the area below the wavy line represents the "cognitive unconscious" (Lakoff and Johnson, 1999: 10). This contains the Primary Metaphors (PM) that underpin Complex Metaphors (CM), and sets of interrelated Complex Metaphors (Lakoff and Johnson, 1999) which I interpret below as habitus seen from a different perspective. The physical body is engaged in a dynamic relationship with the local environment through extended cognition, perception and what Gibson calls "affordances" (Gibson, 1979). As 95 percent of embodied thought occurs below our consciousness (Thrift, 2000: 36), most of this processing never reaches everyday awareness, which is at the iceberg's tip.

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[1] One fundamental element that I have not included is the considerable influence of the hormonal and immune systems. I decided that factoring in this aspect would over complicate what is already an extensive analysis without a significant gain in insight.

At the top of the triangle – the tip of the proverbial iceberg – is everyday conscious awareness, which as we have heard, is a very small percentage of who we are. Consciousness is simply what we are aware of, the minimal aspects of a complex process, but because we identify our 'self' with consciousness we tend to discount the deep body 'self' that actually governs much of our behaviour. This top level of awareness is quite narrowly focused and tends to heighten our impression of a subject/object distinction. The dotted area just below the apex designates 'gut feelings' or felt senses. Further down the triangle awareness widens out into what I call the *deep body* , becoming less focused and blurring the distinction between self and other, shown in the graphic by the gaps appearing in the sides of the triangle. A distinct boundary marks off the cognitive unconscious because it's normally inaccessible to intentional influence or conscious awareness. However, this line is wavy, because under certain circumstances - in ritual for example (Asad, 1993: 131) - the deep body can access and influence at least some of what lies below the line.

The enactive process model (illustrated by the cognitive iceberg diagram) is a synthesis of several theoretical approaches. Some theories emphasize how cognition involves the individual body, and focus on stance, movement and gesture (see, inter alia, Bourdieu, Mauss, Syme). This approach typically suggests that cognition relies on cultural and embodied metaphors (Bourdieu, 1984: 172-3; Lakoff and Johnson, 1999; Syme, 1997). Several theorists conclude that as we are always and already engaged in the world, embodied situated cognition involves the immediate environment. Such cognitive extension may involve people, physical objects, light levels, sounds, the ordering of space, and the other-than-human world as tools to think with (see, inter alia, Abram, Bateson, Gendlin, Ingold, Varela et al.). Both the gestural/metaphorical and the cognitive extension models emphasize different aspects of the complex processes of embodied situated cognition/knowing and are not mutually exclusive, as complex feedback loops operate between the elements/sub-systems described by each approach. Cognitive neuroscience estimates that only 5% of thought is conscious (Lakoff and Johnson, 1999: 13), so most of these processes occur in what Lakoff and Johnson call the "cognitive unconscious" [2] (Lakoff and Johnson, 1999: 9 -15).

In most cases, each theoretical stance was originally presented in isolation: Bourdieu, for example does not consider how the habitus might relate to cognitive extension. Therefore, although the enactive process model shows how different approaches mesh in complex interrelationships, I explain each aspect as a separate thematic

[2] This is not to be confused with the Freudian or Jungian unconscious. Lakoff and Johnson's concept is based on an entirely different model.

perspective: I consider metaphor and habitus, cognitive extension, metaphors as scaffolding, and perception.

Metaphor and Habitus

Bourdieu's habitus is fundamental to gestural/metaphorical strategies, which illustrate how the practical sense of the habitus is rooted in metaphors that are embodied in the body schema[3] and the immediate environment. Furthermore, this practical sense orders our perception, thereby delineating what we attend to and how we apprehend it.

Jenkins (1992: *passim*, 76-80) is critical of Bourdieu's concept of habitus, claiming that it fails to explain how habitus actually functions. Jenkins argues that Bourdieu glosses over this issue with vague references to 'unconscious' processes, but Lakoff and Johnson's conceptual metaphors may be useful in clarifying how habitus functions. Lakoff and Johnson's theory claims that we reason using metaphorical concepts based on our physical experiences (Lakoff and Johnson, 1999). The "practical taxonomies" which Bourdieu used to decipher the meaning of Kabyle culture, are similarly rooted in the bodily schema: Male/female, front/back, up/down, hot/cold, are examples of practical metaphors that Kabyle culture – and, no doubt, our own – use to make sense of the world (Bourdieu, 1990: 10). This embodied "socialization instils a sense of the equivalences between physical space and social space and between movements (rising, falling, etc.) in the two spaces and thereby roots the most fundamental structures of the group in the primary experiences of the body which, as is clearly seen in emotion, takes metaphors seriously" (Bourdieu, 1990: 72).

On Lakoff and Johnson's model, Primary Metaphors are the basic units of embodied understanding, grounding simple assumptions like 'More Is Up' (Lakoff and Johnson, 1999: 56). Primary Metaphors build into Complex Metaphors that help construct our conceptual systems, and "affect how we think and what we care about" (Lakoff and Johnson, 1999: 60). We can explain how Bourdieu's habitus functions in terms of Primary and Complex Metaphors, as shown in fig. 2.
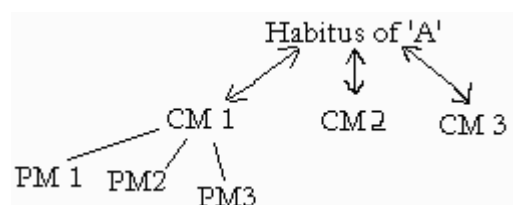

Fig. 2: Embodied Metaphor and Habitus

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[3] The body schema is a preconscious system that helps manage posture and movement (Gallagher and Cole, 1995).

Primary Metaphors (PM) underpin Complex Metaphors (CM), and sets of interrelated Complex Metaphors can be understood as habitus seen from a different perspective. The stoic 'stiff upper lip' serves as a good example: 'Stiff Is Strong' is a Primary Metaphor that becomes Complex in the context of the emotional feeling of distress where the upper lip trembles. In a social context, the stiff upper lip, seen as an aspect of habitus, exemplifies a class bound moral imperative. A slightly adapted version of figure 2 is integrated into the cognitive unconscious on my cognitive iceberg diagram (fig. 1).

Cognitive Extension

Although there are variations in how theorists understand the relationship between 'self' and environment, they agree that place can enable cognitive processes we would otherwise be incapable of (Preston, 2003). Bourdieu's practical sense engages with the local environment in a way that is analogous to cognitive extension, and this process is apparent in Bourdieu's analysis of the Kabyle house (Bourdieu, 1990). The space of the house is organised according to the "practical taxonomies" described above in the section on *Metaphor and Habitus*: the house itself is female as opposed to the outside world of men, while within the house are light (male) spaces used for social activities and dark (female) areas set apart for more organic aspects of life like sleeping and sex (Bourdieu, 1990: 274). The house thus becomes cognised space (Rapoport, 1994) that is integral to the process of enculturation. As Benton says:

> social relations take as their terms not just persons ... but also physical objects, spatial 'envelopes', land, material substances and other living things, which are, likewise, space-time embedded (Benton, 1991: 21).

This is apparent in Butler's description of the space of resistance Eco-Pagans[4] created at the M11 link road protest:

> [T]he culture of resistance created at Claremont[5], the people who inhabited it and the rituals performed in the space functioned as an 'auto-critic' of everyday life in that the art and artefacts, the landscape itself, were purposefully (re)-created to 'display' and to confront this potential (Butler, 2003: 377-378).

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[4] Not all those involved with the M11 protest were Eco-Pagans, but, as noted in Chapter 2, there is "a Pagan discourse underlying the [protest] movement" (Letcher, 2000). This is apparent in Butler's description.
[5] The whole of Claremont Road was occupied by activists during the height of the M11 protest. Protesters were evicted in December 1994.

Butler quotes Tilley to further her point:

> Spaces open up by virtue of the *dwelling* of humanity or
> the *staying with things* that cannot be separated: the earth, the
> sky, the constellations, the divinities, birth and death ... Cognition
> is not opposed to reality, but is wholly given over in the social fact
> of dwelling, serving to link place, praxis, cosmology and nurture
> (Tilley, 1994: 13 (quoted in Butler, 1991: 377).

Butler, Benton and Tilley are describing processes that involve cognitive
extension, although none of then use that term: cognition is bound up
with spaces, and as people transform an environment they are creating
ways of thinking, of making sense of things.

Metaphors as Scaffolding

Neither Burkitt nor Clark explore the possibility that the other-than-
human world might serve as scaffolding in the way described above, but
applying Lakoff and Johnson's work suggests how this could work.
Although Lakoff and Johnson's embodied metaphors are rooted within
the skin enclosed body (Lakoff and Johnson, 1999), cognitive extension
can explain how we use aspects of our environment as scaffolding
metaphors. Bourdieu suggests as much in his analysis of the use of
practical metaphors in the spatial layout of the Kabyle house (Bourdieu,
1990: 93), while Thrift concluded that practical knowledge "tends to be
based upon organic analogy or metaphor[s]" which "are usually based
upon proximity" (Thrift, 1996: 102). To illustrate the point, Thrift quotes
from Jackson's ethnography of the Kuranko of Sierra Leone, who "use
the word *kile* ('path' or 'road') as a metaphor for social
relationship" (Jackson, 1982: 16). The metaphor source is the way a local
species of grass "bends back one way as you go along a path through it,
and then bends back the other way as you return along the path" and the
changing direction of the grass has become a metaphor for reciprocity:

> Thus, in Kuranko one often explains the reason for giving a gift,
> especially to an in-law, with the phrase *kile ka na faga*, 'so that
> the path does not die'. However, if relations between affines or
> neighbours are strained, it is often said that 'the path is not good
> between them' ... (Jackson, 1982: 16).

Abram's ethnography provides similar examples (Abram, 1996), while
his suggestion that a boulder might lend our "thoughts a certain gravity,
and a kind of stony wisdom" (Abram, 2004) neatly illustrates Finch's
conclusion that the organic environment can provide "an external
template for internal emotions, a way of recognizing, giving shape to, an

inner process". Finch suggests "that the physical natural world might in fact be the source of our emotional, psychological, and even spiritual lives" (Finch, 2004: 44). Examples of this process abound in Eco-Pagan practice, where metaphors are grounded in "the earth and the seasonal cycles of the natural world" (Salomonsen, 2002: 14).

How we understand our world influences our notion of self, and to the extent that we use environmental scaffolding metaphors, they will help to construct our being-in-the-world. Thus, if we predominantly draw on the metaphors of a restricted environment to scaffold our cognition, we may invite an impoverished existence. But our thought is not simply steered by cognitive extension using artifacts or environment: Because complex cognitive processes exist in a reciprocal relationship with simpler sub-systems, what we consciously think impacts on those primary processes (Varela, 1999: 76). Therefore "complex, human-generated ... belief systems" can "interrupt feedback ... from the sociocultural and biophysical environments" which underlie cognitive extension (Stepp et al., 2003).

The enactive process model helps explain several aspects of the wilderness effect. Using richer metaphors from the organic environment will have an impact on cognition, so could potentially shift our being-in-the-world or catalyses spiritual experience. Furthermore, Greenway notes that people can easily resist the wilderness effect, which is to be expected given the point made by Stepp et al. (2003). He opined that psychological "entry into the wilderness is relatively rare - people I think tend to have fairly deep-seated resistance to any basic change in viewpoint, habit, value, behaviour. The body is in wilderness, the psyche is hanging on to one's culture" (Greenway, pers. comm., 2006).

Perception

In as far as cognition uses the local environment as scaffolding, our sensory modalities will impact on the cognitive process. If my sensory acuity is constrained, then the extent to which I can draw on my environment for cognitive scaffolding will be reduced. In effect then, a finely tuned perception enables more effective cognition, a point supported in various ways by Merleau-Ponty and Ingold. Furthermore, given that wilderness experience improves sensory acuity (Beck 1987; McDonald and Schreyer, 1991), the perceptual dimensions of the wilderness effect will be enhanced. Thus, if the wilderness effect leads an individual to seek more wilderness experiences, a positive feedback loop would be established.

Habitus is a significant influence on sensory acuity: In simple terms, how I stand (slouching or tall), hold myself (head held up or down) and

move through the world will inevitably have an impact on my sensory acuity. Bourdieu's "practical taxonomies" guide our "perception and our practice ..." (Bourdieu, 1989: 73); they therefore determine what we pay attention to and may restrict our perceptual field.

Our intentions are also significant: Perception is not a simple process of receiving sense data from an objective reality of external objects, but emerges from "our whole involvement with the world, emotional and practical as well as purely intellectual" (Matthews, 2002: 54). For Gibson our perception of the world is active, and structured by what he calls "affordances":

> The affordances of the environment are what it offers the animal, what it provides or furnishes, either for good or ill. The verb to afford is found in the dictionary, but the noun affordance is not. I have made it up. I mean by it something that refers to both the environment and the animal in a way that no existing term does. It implies the complementarity of the animal and the environment (Gibson, 1979: 127)

Affordances emerge from the relationship between the organism and the environment, and are represented on the right side of the cognitive iceberg (fig. 1). Affordances can relate to our physical capacities, acquired skills and "our acquired cultural embodiment" (Dreyfus and Dreyfus, 1999: 104).

Strictly speaking, I am concerned with Norman's adaptation of Gibson's term: For Gibson an affordance is a possibility presented by the environment that is independent of our recognition of opportunity, whereas Norman's more subjective *perceived* affordances depends on an individual's intentions, values and beliefs (Norman, 1999). Such affordances both constrain and enable behavior. Examples include "a path that beckons people to walk safely along it, a wood that is a repository of childhood memories, trees that invite young children to climb and so on" (Macnaghten and Urry, 2000: 169). Perceived affordances are culturally determined, and as a result "[i]ndividuals in different societies differ in what they perceive and value in their perception" (Rodaway, 1995: 12). Because of these processes and influences, we hear what we are culturally tuned to listen for and see what we are culturally focused to look for, and our sensory acuity shifts accordingly:

> What we perceive, for example, cannot be cleanly separated from how are moving our bodies, what emotions or desires we are feeling, what we are thinking, or what kind of language we have

acquired. All of these are intertwined aspects of a single bodily existing (Fisher, 2006: 244).

The role of positive feedback loops is clear: My habitus guides my perceptual expectations and inclines me towards a particular way of being-in-the-world, both of which then reinforce my habitus.

CHALLENGES AND CRITIQUES

On-line and off-line Cognition

It is generally agreed within cognitive neuroscience and psychology that that there are two fundamentally different modes of cognition; on-line and off-line (see, inter alia, Corr, 2006). It is important to grasp the difference, because several of the criticisms of embodied situated cognition only apply to off-line cognition. On-line cognition is concerned with "immediate input" from our local environment (Iverson & Thelan, 2000: 37), and deals with "here-and-now" tasks (Bassili, 1989: xiv) that require fast moment-by-moment processing. We switch to slower, off-line cognition to make more careful considerations, like when we make a mental check on something odd or plan future behaviour (Corr, 2006: 468). Everyday activity and conversations use predominantly on-line cognition, as does reading, but when the usual flow is interrupted we switch to off-line processing. To make this clearer, read:

> The old man the boats.

You will probably use off-line cognition as you start to read that sentence (taken from Meyer and Rice, 1992: 199), but then, as that approach fails, re-read it off-line to interpret the meaning correctly. On-line cognition is always situated in the sense that "all the elements of the problem are physically there in a given context and the organism manipulates them to generate an effective response" (Day, 2004: 110), while off-line cognition is only sometimes situated, as in the reading example just given. Immediate location is irrelevant for some off-line cognition, as for example, when we imagine a 'what-if' scenario to plan some hypothetical activity.

Existing fieldwork illustrates that Eco-Pagans predominantly use on-line cognition, drawing on metaphors based in the immediate environment for cognitive extension. Eco-Pagan practice engages with the place itself, the *actual* trees, rivers and plants, and is not concerned with theological issues of belief that would require off-line cognition (see inter alia: Harvey, 2000; Letcher, 2000, 2002; Plows, 2005; Taylor, B., 2001).

Wilson's Critique

Wilson usefully summarizes the six claims of the "emerging viewpoint of embodied cognition":

> 1) cognition is situated; 2) cognition is time-pressured; 3) we off-load cognitive work onto the environment; 4) the environment is part of the cognitive system; 5) cognition is for action; 6) off-line cognition is body-based (Wilson, M, 2002: 625).

She argues that some of these claims "are more controversial than others" (Wilson, M, 2002: 625) and cautions against over extending the application of the theory: Wilson's critique is comprehensive and includes all the key challenges to this stance. While the sixth claim, that "off-line cognition is body-based", "may in fact be the best documented and most powerful" (Wilson, M., 2002: 625), she argues that the remainder are, at best, "at least partially true" (Wilson, M., 2002: 625).

Her criticism of the first claim, that "cognition is situated" (Wilson, M., 2002: 625), does not impact on my application of the theory. She notes that "large portions of human cognitive processing" cannot be situated, and Kirsh and Anderson concur (Anderson, 2003: 116; Kirsh, 1991: 171). Specifically, these are off-line cognitive processes that involve "our ability to form mental representations about things that are remote in time and space" (Wilson, M., 2002: 626). However, I concluded at the end of the previous sub-section that Eco-Pagan practice primarily uses on-line cognition, so it is not subject to this critique.

I concur with Wilson that the second claim - that cognition is time-pressured - is too broad, as many of our daily activities "do not inherently involve time pressure" (Wilson, M., 2002: 628). However, this claim is not required or implied by the enactivist process model. Wilson supports the third claim, that "we off-load cognitive work onto the environment" (Wilson, M., 2002: 625), as long as we recognize that it is only applicable to on-line cognition (Wilson, M., 2002: 629), which is exactly how I apply the theory.

Wilson mounts a fairly robust attack on the fourth claim that "the environment is part of the cognitive system" (Wilson, M., 2002: 625), which, given the centrality of this claim to my approach, I need to discuss. Wilson's critique hinges on what we mean by "cognitive system". On this basis she concludes that what she call the "strong version" of extended cognition, "that a cognitive system cannot in principle be taken to comprise only an individual mind", will not hold (Wilson, M., 2002: 631). There are two types of cognitive system: "Facultative systems are temporary, organized for a particular occasion

and disbanded readily", while "obligate systems ... are more or less permanent, at least relative to the lifetime of their parts" (Wilson, M., 2002: 630). Because I am explicitly concerned with embodied situated cognition in quite distinct locations, I work with a model that uses facultative rather than obligate systems. Wilson accepts this "weaker version", which she concludes offers "a promising ... avenue of investigation" (Wilson, M., 2002: 631).

Wilson critique of the fifth claim, that cognition is for action, once again focus on limitations rather than general validity. Although this claim is supported by much of the available evidence, it doesn't apply in all examples of cognition (Wilson, M., 2002: 632), notably excluding most off-line cognition. As discussed above, this does not impact on my application of embodied situated cognition theory to on-line processing.

APPLYING THE MODEL

My literature review typically addressed cognition during 'normal' consciousness, but I now apply the enactive process model to alternative states of consciousness. I am not positing some 'normal' state of consciousness, as we spend much of our time in some kind of alternative state or trance. However, it serves my purposes to assume a normal baseline state, illustrated in my cognitive iceberg diagram (fig. 1), to which I can compare.

Certain circumstances and techniques allow us to become more aware of the blurred boundary between self and world. As the waves ride up the side of a real iceberg, what is above the water and what is below changes constantly. So it is with conscious awareness: At times we are unaware of the deeper processes of embodied situated cognition - the sea around the iceberg is still. But at other times the sea is rough, and what lies beneath and above the waves shifts constantly. Our experiences make this apparent, as Ledger vividly describes on an occasion when he was walking in the woods, caught up with his own concerns:

> a paper that needs completion, a financial problem. My thoughts are running their own private race, unrelated to the landscape. ... The landscape neither penetrates into me, not I into it. We are two bodies (Leder, 1990: 165).

Leder's mind is working off-line, and on my model his awareness is focused at the tip of the cognitive iceberg. But the "rhythm of walking" and the peace of the wood calm his mind and induce an "existential shift", so that he begins to notice the beauty around him. Gradually

[t]he boundaries between the inner and the outer thus become porous. ... I feel the sun and hear the song birds both within-me and without-me. ... They are part of a rich body-world chasm that eludes dualistic characterization (Leder, 1990: 165-6).

Leder's awareness has slipped down the cognitive iceberg, broadening into what Greenwood calls magical consciousness (Greenwood, 2005), and this change in "body-mind-habitus" produces "an altered sense of self" (Jackson, 2006: 328). A fundamental aspect of this change in habitus is the deepening sense of personal embodiment which results from shifting awareness down the cognitive iceberg. This shift blurs the distinction between self and other, enhancing Leder's sense of connection. The experience Leder describes correlates with the wilderness effect, which is present in the beneficial effects of "spending meaningful time communing with nature" (Shaw, 2006), and recalls Greenway's comment that the effect results from moving from a "dualism-producing" consciousness "to a more nondualistic mode" (Greenway, 1995: 131). Shifting awareness even slightly down the cognitive iceberg increases our sense of connection, enhancing empathy and thus contributing to a richer social community. Given that the wilderness effect correlates with this kind of shift, my model helps explain the tight relationship between the wilderness effect, a spiritual sense of connection and community. Greenway notes that 80% of participants on wilderness trips cited the sense of community as very significant (Greenway, 1995: 128-129) while other researchers found correlations between close social interaction and spiritual experiences (Fredrickson and Anderson, 1999; Stringer and McAvoy, 1992).

Ritual, trance and meditation all help shift awareness to the deep embodied self, and can thus blur the boundary of the skin enclosed body, enabling a flow of information between 'self' and 'other' that ultimately makes nonsense of both terms. Questions concerning which mode of awareness is more 'real' are moot, as according to Varela the "mind is not about representing some kind of state of affairs", but is "fundamentally a matter of *imagination and fantasy*" (Varela, 1999: 77; author's emphasis). In everyday states of consciousness - which are clearly variable - the mind is "constantly secreting this coherent reality that constitutes a world" (Varela, 1999: 77): We construct a reality of apparent subject/object duality even though the mind is in a "non-place of the co-determination of inner and outer, so one cannot say that is outside or inside" (Varela, 1999: 73).

Focusing
The Focusing technique first described by Gendlin (1981) requires a form of attention that usually engenders an alternative state of consciousness.
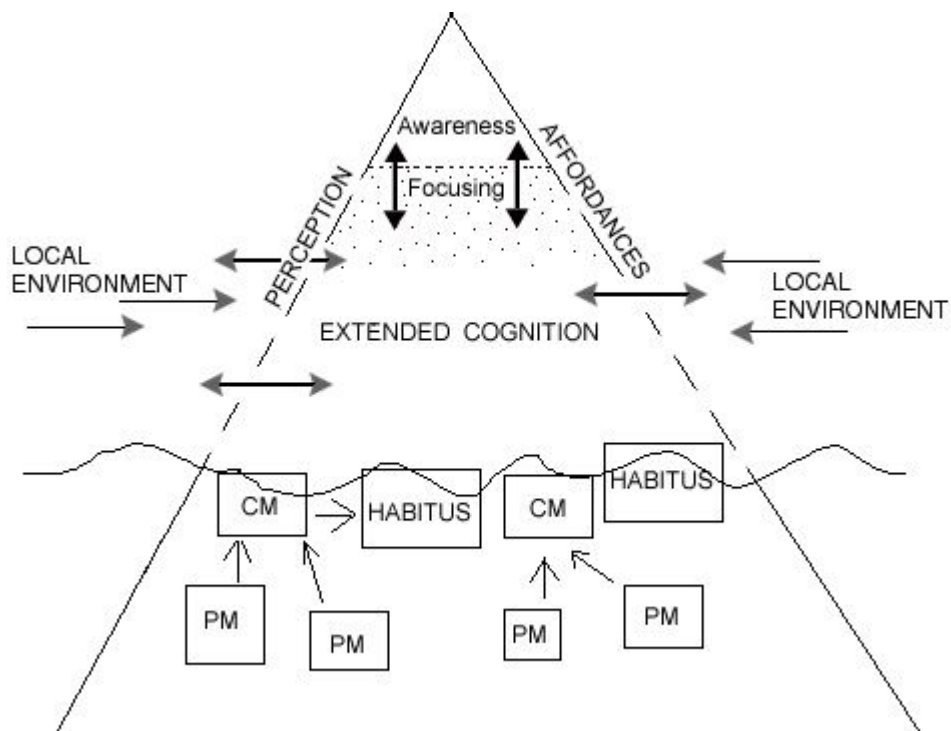
Fig. 3: Focusing and the Felt Sense

In fig. 3 I adapt my cognitive iceberg diagram to show the felt sense and illustrate the process of Focusing. The entire space of the triangle below the apex forms the ground of Gendlin's implicit, which emerges from our emotions, memories, history and culture as well as immediate sensory input. As before, the dotted area just below the apex designates 'gut feelings' or felt senses. Metaphor plays a key role in situated embodied situated cognition, and the implicit, in common with the cognitive unconscious, speaks the language of metaphor, which is how the felt sense is usually expressed. The felt sense emerges from the relationship between conscious awareness and the implicit, which is meditated through Focusing.

Ritual
Ritual can use all of the aspects of embodied situated cognition - stance, movement and gesture, cognitive extension, metaphor, the felt sense and perceptual manipulation - but often more explicitly [6]. Because rituals take place within a space and time set apart, and often use techniques deliberately intended to shift consciousness, including

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[6] As noted in my literature review, contemporary Pagans deliberately create their rituals.

breathwork, rhythm, movement and dance,[7] the processes of embodied situated cognition can be used more intentionally:

> Because we experience ritual in a heightened emotional state, a gesture or physical movement becomes loaded with symbolic power: What would be a simple wave of the arm in everyday space becomes an invitation to deity in the sacred circle (Harris and Nightmare, 2006: 226. Also see Bell, 1992: 93-117).

As a result, a ritual can enable the participant to access "know-how" that would otherwise "remains unintelligible and inaccessible to our reflective consciousness" (Crossley, 2004: 37). Thus, as Raposa says, rituals offer a means of "a thinking through and with the body" (Raposa, 2004: 115) that enables embodied thoughts and modes of thinking that are otherwise elusive. The enactive process model has considerable explanatory power for ritual studies: It elucidates how ritual "produces an incarnate means of knowing" (Bell, 1992: 163), moves consciousness from the 'head' (the tip of the iceberg) to the deep body (Grimes, 1995), influences habitus (Asad, 1993: 131) or transforms "subjective and intersubjective states" (Crossley, 2004: 40).

Trance
Trance ranges from the shallow trance of watching television to deep states where conscious awareness is apparently absent, and I am mainly concerned with shamanic states at the deeper end of this scale. Vitebsky describes shamanic trance as a "technique of dissociation[8] with a high degree of control" (Vitebsky, 2000: 59) that allows the practitioner access to a "dimension of reality" that "is not accessible to ordinary people, or in an ordinary state of consciousness" (Vitebsky, 2000: 58).

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[7] Entheogens, most usually 'magic' psilocybin mushrooms, are used in a sacred context but rarely in ritual.

[8] The term dissociation is drawn from psychology and psychiatry where it describes mental states ranging from daydreaming through hypnosis into what can be considered pathological like amnesia, the feeling that one's surroundings are unreal and depersonalization which involves "experiencing oneself as detached from one's own body or mental processes" (Brunet, Holowka & Laurence, 2001: 3).
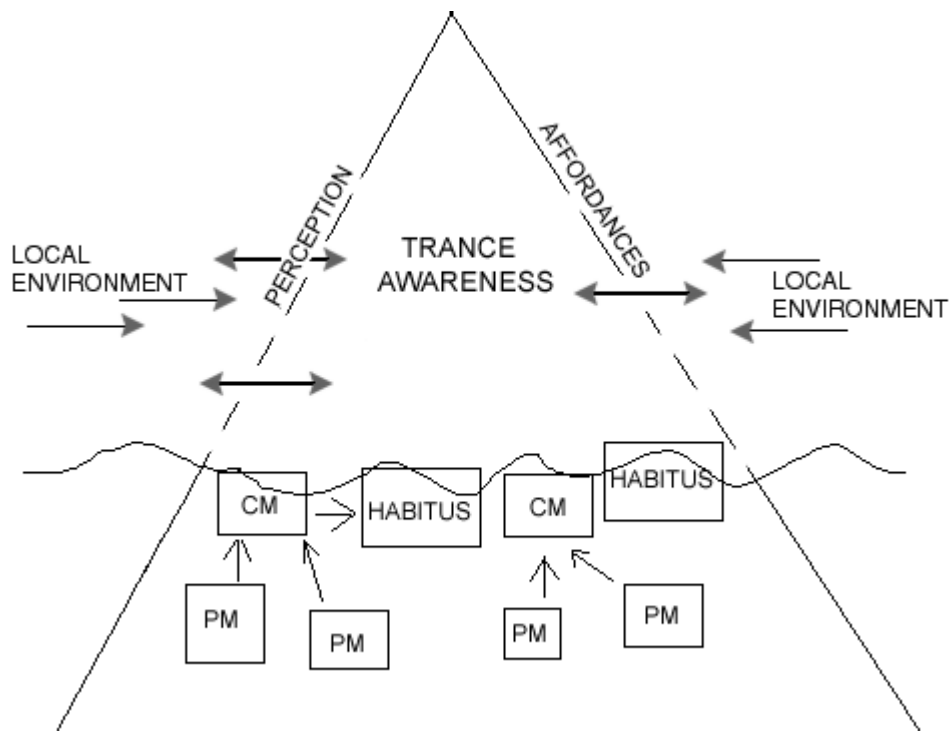
Figure 4: The Trance State

Trance is complex and an extensive discussion lies beyond my remit, but the enactive process model again has explanatory power, as shown above. Figure 4 shows an 'ideal' deep trance state: trance takes many forms, and some degree of conscious awareness is common, so it is rarely as profound as shown here.

When an individual enters trance, their awareness begins to slide down the cognitive iceberg, and the apparent boundary between 'self' and 'other' becomes increasingly blurred. They soon begin to dissociate, a sensation that is often apparent even in light trances like daydreaming. As a practitioner moves into deeper trance states, conventional maps of 'reality' begin to break down, but up to a point the Shaman's training enables them to remain in control. There is a lack of research into what happens during this process, but I hypothesise that the Shaman uses whatever cultural maps are available to make sense of what she or he experiences. According to Varela "you can give an (enactively embodied) organism anything at all as an excuse for sensory-motor interaction, and it will immediately constitute a world which is shaped, which is fully formed. It's an amazing conceptual shift from thinking that there are properties of the world that you need to apprehend in order to make a coherent picture of reality, to the notion that almost anything would supply an excuse to invent a reality" (Varela, 1999: 77).

Conclusion

The demands of clarity required me to present each perspective on embodied situated cognition as if they were distinct, but as we have seen these different aspects interrelate in complex ways. Such analysis, which has been essential to understanding, inevitably distorts, and this model may appear to be quite instrumentalist: There is little sense here of a relationship or a conversation with the other-than-human world, and it suggests that we simply *use* the organic environment as a tool to make sense of our lives. This may be true in many cases, but the process can be experienced like a dance that enables deep communion. The steps of the dance are ancient, and when we make those old familiar moves we are once again in tune with the other-than-human world. There is a point where self and other bow and acknowledge one another before the dance begins. This is the ethical relationship of 'self' and 'other' upon which Levinas founds his ethics [9]. But in just a few fluid steps the self/other dance becomes a process in itself. If I learn the steps well, then suddenly - phenomenologically and spiritually – 'I' am no longer the dancer but the dance, at which point 'I' am not.

I have demonstrated how the enactive process model can elucidate existing ethnography, the wilderness effect, Focusing, ritual practice and trance. In Section II I apply this model and my cognitive iceberg diagram to my fieldwork, where it powerfully illuminates embodied knowing in Eco-Paganism.

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[9] For Levinas, if there is no division between subject and object, then there is no 'other', so on his terms, there is no ethics. His approach is very different from the Buddhist and Deep Ecology view, but my dance metaphor offers a compromise.