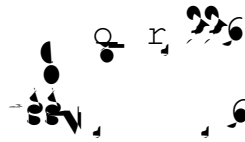


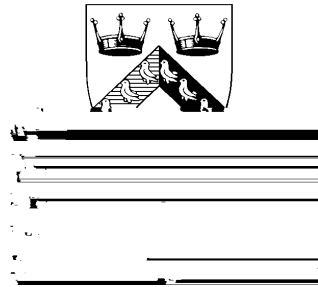
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# Embodiment for Non-Cartesians\*

Ronald Lemmen  
School of Cognitive & Computing Sciences;  
University of Sussex, Brighton, UK.  
email: ronaldl@cogs.susx.ac.uk

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*It is not a question of how the soul acts on the objective body, since  
it is not on the latter that it acts, but on the phenomenal body.*

– Maurice Merleau-Ponty

## A s t r a c t

The majority of cognitive science is Cartesian in that it accepts the Cartesian cut between mind and body. The cut makes it impossible to take seriously either the mental (understood as the experiential) or the bodily. Rejection of the Cartesian cut leads to the simultaneous rejection of both “pure mind” and “mere behaviour”. It also leads to a reconceptualisation of embodiment. The living body is not a machine, but it actively brings forth a world. It is explained how situations are “the other side” of the habits of the body, drawing on the work of Dewey, Merleau-Ponty and Brooks. Finally, an attempt is made to explain how even abstract thought can be understood as essentially depending on embodiment.

## **Intro u t o n**

Even when bodily features are attended to, they are treated merely as clues for their mental, causal precursors. That is to say, bodily events as such, e.g., gestures, are deemed not to be meaningful by themselves, but only because there is meaning *behind* them. The locus of meaning is the mind, which is an inner entity and therefore not itself perceptible. This brings into existence the



provides the foundation for that distinction. Acts, which include gestures and perceptions, belong to the third genus, and so does the body properly understood, as I will try to show.

The other entities that are of the third genus are “situations”, which for Merleau-Ponty are the real constituents of the world (Mallin, 1979). This is obvious as soon as it is understood that situations are “the other side” of the living body, a point which expresses the mutuality of an animal and its world. Situations are not objective, pre-given entities, but they come about in and through the interaction (or dialectic) between cognizer and world. Situations thus are co-constituted by cognizer and world, both cognizer and world participate in the bringing forth of situations. A mechanical body can not be understood as participating in this bringing forth. This is why Merleau-Ponty replaces the notion of the reflex arc with that of the *intentional arc*; a function which we find *beneath* intelligence and perception. “[The] life of consciousness–cognitive life, the life of desire or perceptual life–is subtended by an ‘intentional arc’ which projects round about us our past, our future, our human setting, our physical, ideological and moral situation, or rather which results in our being situated in all these respects.” (Merleau-Ponty, 1962, p.136). Still, this ‘projection’ appears rather mysterious. Let us turn to the field of Behaviour Based Robotics to dispel some of the mystery.

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(in and through the concrete interaction with the world). There is no detached, internal mind which is the “real” bearer of the meanings or which is “really” responsible for the purposefulness of the behaviour. This is because, qua mechanism, the robot does not consist of a hierarchy of functional modules, but of a collection of activity producing layers, all with their own sensory and motor as-



(Merleau-Ponty 1962, p.320).

Note that a habit only establishes itself through surviving a “history of use”: only those emergent patterns of activity that prove themselves continuously in the world have the chance of wearing the kind of groove (Dewey 1925, p.229) that turns them into a sedimentation. This means that we can extend Hendriks-Jansen’s idea of a “stamp of approval” for activities from evolutionary to developmental cases. Consequently, acquired habits have the same kind of legitimacy qua explanatory constructs as those activities which evolution endows us with.

It is thanks to their active nature that habits can be creative in the sense of interactive emergence. The world is not ready-made, waiting to be registered, but we are actively and creatively bringing it forth. Not only in the sense that we have to create meaning in a “primary act”, as discussed above, but also within every perception that we have of the world. We always start with a *general* experience of a situation, which is made more articulate through the process of our acquired habits applying themselves. The richness of the world then gradually unfolds itself before our eyes. We experience this, for example, when, after having cast a quick glance at a painting, we start paying more and more attention to it. Then “I become aware that each perception, and not merely that of



would have to be considered as only contingently related to each other, as Searle's principle states. How can we, in the face of there being abstract thought, imagination and even paralysed thinkers, argue for the thesis that mind is essentially embodied? There is not much space available, so I will restrict myself to sketching several parts of an answer.

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One part of the answer is that we only have a world to think about thanks to our embodiment. We saw that this is related to embodiment not being simply a matter of physicality, but one of innate and acquired habits (sedimentations). Or, as Sheets-Johnstone (1990) puts it, the body is an animate form, not a corpse. We then also saw that the habit body *brings forth* the world in its ongoing

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example. First of all, it is to be pointed out that such thoughts are still *acts*. We should not be fooled by the use of nouns like “thought”, “consciousness” and “mind” into thinking that we are dealing with objects. We would do better thinking of them adverbially, as *ways* of interacting with the world. The acts involved in abstract thought do not come out of nowhere. In fact, they are rooted in the more concrete, i.e. bodily, acts. This is why so much of thought and language consists of bodily metaphors and metonymies (Lakoff & Johnson, 1980). A very strong case for embodiment could be made if it could be shown that particular bodily acts are *constitutive* of certain abstract acts.<sup>8</sup> An almost equally strong argument would follow if it could be shown that the high-level, abstract acts *need to remain* rooted in their more concrete precursors. We know (e.g., Smith, 1989; Cussins, 1990; Karmiloff-Smith, 1992) that the earlier abilities are not lost with development, they are not replaced. But that does not by itself show that they are still playing a part in the abstract acts.

What we need is evidence that the higher levels of the mind-body need to be *sustained* by the lower ones. Such a claim is implicit in Merleau-Ponty’s idea that human experience consists of a dialectic between sedimentation and innovation, or creativity within the structure that is provided by acquired habits (Spurling 1977). If the dialectic disappears, the higher level thoughts go as well. Merleau-Ponty explains it like this, “But the word ‘sediment’ should not lead us astray: this acquired knowledge is not an inert mass in the depths of our consciousness . . . Similarly my acquired thoughts are not a final gain, they continually draw their sustenance from my present thought, they offer me a meaning, but I give it back to them . . . Thus what is acquired is truly acquired only if it is taken up again in a fresh momentum of thought, and a thought is assigned to its place only if it takes up its place itself.” (1962, p.130) Thoughts, or meanings or habits, that do *not* continue to draw sustenance from concrete interactions simply wither away. They are pushed aside by other habits with which they are in continuous competition. We witness this phenomenon on a more physiological level when, for example, we cannot use a leg for an extended period. Afterwards, the habit of walking has to be learned all over again, because it was pushed out (its underlying resources have been usurped) by competing habits.

So far for individual thoughts and meanings. But things can get worse. “If consciousness would be *totally* loosened from its anchorage in the body, it would have no means of expression, of actualising itself, and so would literally cease to be” (Spurling 1977, p.23; emphasis added). This point is closely related to the Kantian insight that thought without perception is empty: if it is

p.109).<sup>9</sup> Also, he cannot make sense of anything imaginary or even prospective. His behaviour is so tightly coupled to his situation that we might call him a “reactive system”. And his language

exactly the right amount of time and this virtual practicing also *improves* their actual performance. An even more familiar example is that of thought. Thought, in its central meaning, is a matter of internalised speech. We all do it, we all talk to ourselves silently. It does not seem too crazy to claim that what we do when we perform the virtual acts is, in a crucial sense, the *same* thing as what we do when we perform them for real. Thus, they are occurrences of the very same habits of which we have claimed that they constitute embodiment.

As Shapiro points out, the notion of forming as a virtual rather than an actual behaviour is very close to Piaget's internalised action. The latter's step of deferred imitation, which occurs quite early in development, already makes possible a separation of the cognizer from her immediate situatedness. She is no longer at the beck and call of her situation but can now create situations through her own action. Then, when the act of imitation is internalised (or abbreviated), it is transformed into thought. At this point, Piaget unfortunately abandons the emphasis on action and moves on to talk of internal representations. "Having taken action to the doorstep of a mental life which it originates, Piaget then leaves it outside." (Shapiro, 1985, p.105) The problem is that we are offered no account of how an action can become an object (an image or other kind of mental representation). Shapiro shows how it makes much more sense to take it that what is produced by forming is like what is produced by mime: a pseudo-presence. If I imagine an object or an event, I am indeed representing, but the representation is not in my head, it is somewhere out there.<sup>10</sup> Representation is an act, rooted in the body, not a mental object.

## **Con us on**

If we reject the Cartesian cut between mind and body, we are not only able to arrive at a notion of the mind as essentially embodied, but we can also take experi

points, Merleau-Ponty and Dewey start with the interactions between the living body and the lived world. This interaction is unreflective and pre-objective, which means that the traditional mind-body problem can be avoided. Every interaction has two sides. Thus, as a cognizer learns to make a self-world distinction, it is possible for her to reify the two sides of her interactions with the



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