

## **Second Chapter**

# **METAPHOR, EMBODIMENT AND TACIT LEARNING**

**James Lawley**

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# **BECOMING A TEACHER: THE DANCE BETWEEN TACIT AND EXPLICIT KNOWLEDGE**

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## METAPHOR, EMBODIMENT AND TACIT LEARNING

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James Lawley

This chapter concentrates on a subset of the field of embodied cognition: *embodied metaphor*. It examines a variety of ways metaphors can be embodied and the links with tacit learning.

### 2.1 What do we mean by embodied?

*Embodiment* means different things to different people. It can be as general as the Santiago Theory of Cognition which states boldly, ‘All knowing is doing’ (Maturana & Varela, 1992, p.26) or it can be as specific as the view that the human conceptual system involves sensorimotor simulations in the brain’s modality-specific systems (Barsalou, 1999).

Regardless of definition, *embodiment* is based on the notion that the brain, body and environment are dynamically coupled and that they influence each other. In other words, they exhibit self-organisation and emergent processes on multiple levels which involve both upward and downward causation (Thompson & Varela, 2001). This has led to the systematic study of language-mind-body-environment correspondences and in particular how abstract thought is grounded in embodied experience. No one maintains that embodiment is the single foundation for all thought and language; rather, experimental studies increasingly indicate that people’s recurring embodied experiences often play a role in how they tacitly make sense of the world (Wilson & Gibbs, 2007).

### 2.2 What are embodied metaphors?

In 1980 Lakoff and Johnson put forward the then radical view that much of our language and many of our conceptions are fundamentally metaphorical and affect the ways in which we perceive, think and act. Reality itself, is defined by metaphor. Furthermore they state, ‘metaphorical thought is unavoidable, ubiquitous, and mostly unconscious’ (Lakoff & Johnson, 2003, p. 272).

Although the evidence is mixed, a number of neuroimaging studies have reported somatotopic motor activity associated with action metaphors or idioms. In addition,

“MRI studies that asked participants to read sentences with tactile metaphors (e.g. she had a rough day) or non-tactile control sentences (e.g. she had a bad day), and taste metaphors (e.g. she looked at him sweetly) or non-gustatory paraphrases (e.g. she looked at him kindly) found that sentences with tactile and taste metaphors elicited more activity in areas of the brain known to be active during tactile and gustatory perception” (Casasanto & Gijssels, 2015, p. 333).

Casasanto and Gijssels’ recent review of the neurological evidence concludes,

“There is strong evidence that people think in mental metaphors, and strong evidence that some of our thinking is embodied. But there is very little evidence that mental metaphors are embodied in [the Barsalou sense of] modality-specific simulations.” (2015, p. 334)

This may be because neuroscientists do not yet have the means of making the required distinctions or it may be, as Oliver Sacks points out, that ‘there is increasing evidence for the extraordinarily rich interconnectedness and interactions of the sensory areas of the brain, and the difficulty, therefore, of saying that anything is purely visual or purely auditory, or purely anything’ (Sacks 2010, pp. 237–8).

Neurological studies may be considered the premier kind of evidence of embodiment but only if neurology is privileged over other forms discussed in this chapter. From a practitioner and qualitative researcher’s viewpoint, cognition in general and metaphor in particular can be regarded as embodied in ways other than neurological. When they are, a much richer vista opens up. What follows is a description of four ways metaphors can be considered embodied: linguistically, psychologically, physiologically and materially.

### **2.3 Language: Metaphors embody the abstract in the physical domain**

Lakoff and Johnson’s seminal definition, “The essence of metaphor is understanding and experiencing one kind of thing in terms of another” (1980, p.5) wisely does not specify the vehicle by which metaphors are expressed. Commonly the ‘one kind of thing’ is relatively more abstract than the ‘other’ (the metaphor). Most metaphors use terms from the physiological-material domain as a source for descriptions and explanations of more abstract ideas. Kovecses (2002) counted the source domains used as the basis for everyday metaphors in metaphor dictionaries and research literature. He found that the most common were:

- The human body (including health and illness).
- Living things (e.g. animals, plants).
- People-made things (e.g. buildings, machines, tools).
- Human activities (e.g. games, sport, war, money, cooking, food).
- The environment (e.g. heat, cold, light, darkness).
- Physics (e.g. space, forces, movement, direction).

Thus, relatively abstract and complex ideas are, by metaphorical extension, typically *embodied* in the words for the experiences we are most familiar with: human and animal bodies, things, the environment, and the ways these operate.

Research in various contexts (psychotherapeutic interviews, essays and TV debates) suggests people commonly use around six metaphors a minute (Tosey, Sullivan & Meyer, 2013). While the speaker, listener, writer or reader will be aware of the words used, much of their metaphorical nature will be out of awareness.

## 2.4 Psychology: Mental metaphors have form

Although the metaphorical content of language is evident, this does not necessarily mean that ‘Metaphors as linguistic expressions are possible precisely because they are metaphors in a person’s conceptual system’ (Lakoff & Johnson, 1980, p.6). While there is, as ever, some ambiguity interpreting the results, recent empirical evidence by cognitive scientists is seen to largely address this concern. For example:

“We think about time using spatial linear and three-dimensional representations that linguistic metaphors imply” (Ramscar, Matlock & Boroditsky, 2009).

“When people see words presented closer together in space, they judge them to be ‘closer’ in meaning” (Casasanto, 2008).

“Experiments based on the metaphor of feeling ‘warm’ or ‘cold’ towards someone indicates a systemic interdependence between language, perception and social proximity” (IJzerman & Semin, 2009).

Recent literature reviews suggest there is now abundant evidence that people think in mental metaphors and that metaphors structure our thoughts, feelings and choices (Carpenter, 2010; Casasanto & Gijssels, 2015; Gibbs, Lima & Francozo, 2004).

As noted above, metaphors are typically drawn from our understanding of the world (human and animal bodies, things, the environment) and the way it operates. When we represent these in our mind, the symbols that constitute metaphors have a size, shape, colour, texture, temperature, sensation, behaviour, rhythm, tone, etc. (Gordon, 1978). Counselling psychologist David Grove demonstrated throughout 25 years of clinical work that, when a therapist’s metaphors are eliminated by the use of Clean Language, people provide their own rich and idiosyncratic descriptions of their internal experience, using visual, auditory, tactile and proprioceptive metaphors (Grove & Panzer, 1989; Lawley & Tompkins, 2000).

## 2.5 Physiology: The body can be a metaphor

Research demonstrates that our ability to perceive things and events is closely related to our own tacit movements (Gibbs & de Macedo, 2010). Johnson (1987) suggests our reality is shaped by the patterns of our bodily movements since the mind uses the body to make sense of abstract and complex concepts, and it does so largely through metaphorical projection of ‘image schema’ such as Containment, Source-Path-Goal, Blockage, Compulsion, Balance.

McNeill (2008) argues that gesture—metaphoric gesture, in particular—is an indispensable part of speech, and that gestures have meanings of their own that do not depend on words: “In a metaphoric gesture, an abstract meaning is presented as form and/or space ... The gestures provide imagery for the non-imageable” (McNeil 2008 p. 45). Thus the body itself can be used as a means of metaphoric expression through gestures, posture and proprioception. Nonverbal metaphor is often used concurrently with verbal metaphor but, unlike words, it can provide for multiple simultaneous expressions, sometimes apparently conflicting with what is said (Lawley & Tompkins, 2000).

Carpenter (2010) poses the question, “If bodily states infiltrate cognition so often, why are we so seldom aware of this phenomenon?”, to which she answers, “Sometimes our physical sensations and movements are probably too fleeting or trivial for us to notice their effect on our mental lives”. ‘Too fleeting’ maybe, but ‘too trivial’? A simpler explanation is that we do not need to be consciously aware; tacit awareness is sufficient in most cases. There is no need to equate lack of awareness with triviality. Except in extreme circumstances, evolution has left us with almost no awareness of the near continuous movement of the soft muscles around our intestines—hardly a trivial matter. A limited attention demands selective noticing.

As Geary (2012) points out, if our bodies were different, our metaphors would be different.

## 2.6 Material: Metaphors can be physicalised

There are numerous ways in which metaphors can be consciously embodied in the physical world. They may be drawn, painted, written, sculpted, constructed out of Lego and recorded as sounds, to name but a few. Once a material metaphor is created it has an existence separate from its creator. One of the most common material metaphors—so common we are apt to forget it is a metaphor—is the computer *desktop* with its *files*, *folders*, *trash* and so on.

When people are asked to physically represent abstract concepts they often use metaphor since abstractions are formless and disembodied and therefore difficult to depict. When internal representations are externalised the creation of a material metaphor establishes a feedback loop which can aid self-reflection and insight (Lawley & Tompkins, 2000).

Leung and colleagues (2012) conducted five studies to investigate whether embodying creative metaphors both physically and behaviourally could promote creative thinking and problem-solving. One experiment involved a box (built out of PVC and cardboard that could seat an individual) designed to test if ‘thinking outside the box’ made an appreciable difference. Another experiment tested whether considering a problem ‘on one hand, then on the other hand’ increased fluency, flexibility and originality of ideas. They concluded, “embodiment can activate cognitive processes conducive for generating previously unknown ideas and connections” (Leung et al 2012 p. 502).

Making use of embodied metaphors is not a new idea. Carl Jung, the founder of analytical psychology, spent 35 years building and remodelling his house, based on externalising his evolving inner-symbolic world:

I had to achieve a kind of representation in stone of my innermost thoughts and of the knowledge I had acquired ... That was the beginning of the “Tower,” the house which I built for myself at Bollingen [which became] a symbol of psychic wholeness (1983, p. 500).

Only recently have these ideas been tested under scientific conditions.

## **2.7 What difference does it make that metaphor is embodied?**

Given that metaphor can support learning, provide novel descriptions and enhance creativity, it is likely that the processes that make use of metaphor are associated with some neuronal reweighing, reconnecting, rewiring and regeneration (Seung, 2012). However, further evidence will need to be forthcoming. In the meantime this chapter will address some of the implications arising from the other forms of embodiment, described above.

### **2.7.1 Linguistic embodiment**

Since most metaphors, in all languages studied, are sourced in the shared experience of space and force (Pinker, 1998) they facilitate communication, understanding and learning of relatively abstract concepts and complex meanings. Moreover, the embodied nature of metaphors helps us to understand *how* someone else makes sense of the world, and it can do the same for self-understanding.

Implicit metaphors are largely ignored in everyday conversation but they provide valuable information about how individuals organise their experience. If a person says 'I bounce back from disappointment in life,' *disappointment* will be the word that likely captures attention. However, the meaning embodied in the action-metaphor, *bounce back* gives much more of a sense of how this person relates to those moments they categorise as disappointing. One way to grasp the value of the embodied metaphor is to notice how different your sense of this person's experience would be if they were instead to say:

I *recover from* disappointment in life.

I *get over* disappointment in life.

I *deal with* disappointment in life.

I *get round* disappointment in life.

I *handle* disappointment in life.

I *push through* disappointment in life.

Each of these metaphors involves a different action which is likely associated with different visual-kinesthetic imagery.

Furthermore, every metaphor comes with *entailments*, e.g. the statement *Don't waste time* 'entails' that time is both a limited and a valuable resource (Lakoff & Johnson, 1980). The importance of maintaining mental coherence means some of the structures and logic of the physical manifestation are carried across into the metaphorical projection. Even when we 'mix' and 'blend' metaphors, we do so in ways that maintain a logical coherence (Fauconnier & Turner, 2008).

## 2.7.2 Psychological embodiment

Mental metaphors have a form whereas abstract concepts do not. The concept *learning* is formless, spaceless and timeless; whereas the notion of *a sponge soaking up knowledge* may have a size, shape, colour, texture. The sponge image will be different for different people but there will be common sponge-like features and entailments. Also, unlike disembodied concepts, sponges can do things, and they can change over time.

When a person uses an embodied metaphor it contains the structural essence of that person's experience. In therapy or coaching, when the metaphor changes and evolves the person's perception of the issue changes. A school counsellor worked with a child who described his inability to learn Mathematics as, "tangled up spaghetti in my head". After answering some Clean Language questions about the metaphor the boy suddenly exclaimed, "Oh look, the spaghetti has squashed together into one piece. It looks like a piece of paper and I can put my numbers on it!" Over the following months the child became able to learn maths because he now had a place to see the numbers in his mind's eye (Tompkins, Sullivan & Lawley, 2005).

### 2.7.3 Physiological embodiment

Although Johnson called his book *The Body in the Mind*, he might just as well have called it *The Mind in the Body* since there is a systemic relationship between the two. Research findings support the idea that the “appropriate body action, or even imagined action, enhances people’s embodied, metaphorical construal of abstract concepts that are referred to in metaphorical phrases” (Wilson & Gibbs, 2007, p.721).

Nonverbal behaviour, such as gestures, facial expression and posture, is often interpreted as *interpersonal* communication, and yet much may be *intrapersonal*. Using the body metaphorically supports us to think, reason and make decisions about abstract and complex life experiences. When individuals use their bodies to help sort out feelings, keep ideas straight and weigh up situations, they are unconsciously communicating with their inner self. These movements enable a speaker to organise his or her thoughts when speaking and frees up short-term working memory for other tasks (Carpenter, 2010)

Using the body metaphorically is common for people of all cultures. For example, all languages metaphorise time, and the words are often accompanied by gestures that mark out sequences and tenses in mental and physical space. People may have different ways of doing this but the use of spatial marking appears across cultures (Casasanto & Bottini, 2014; Lakoff & Johnson, 1999).

### 2.7.4 Material embodiment

Creating physical metaphoric representations enables us to see the big picture, look at things from different perspectives, and turn them around. A few examples of recent applications of this idea include:

- Loizos Heracleous and Claus Jacobs (2008) asked business leaders to construct a physical object using small bricks to help make sense of the complexities of business, such as designing strategy.
- Robert Barner (2008) used visual metaphors to facilitate groups of managers to ‘give voice’ to their emotional reactions to undergoing organisational change.
- Heather Cairns-Lee (2015) used interview and drawing to explore the subjective and symbolic reality of 30 leaders, to discover what they could learn about their leadership and its development from awareness of their own mental models.
- Alke Gröppel-Wegener (2015) involved 165 first-year Art and Design students in a study that asked them to draw and discuss personalised visual metaphors for analysing secondary academic sources.
- Sarah Nixon and Caitlin Walker (2009) facilitated staff in a university department to model the curriculum through verbal and visual metaphors using a process called Metaphors at Work.
- Sabine Harrer (2014) in a PhD project at the Austrian Academy of Sciences, investigated how the experience of loss and mourning could be communicated through digital game design, using the first-hand experience of bereaved mothers’ construction of material metaphors.

Approaches like this afford advantages because physical constructions can be touched, moved and examined from various angles, and shown to others. In this way they serve as alternative ways to understand, discuss and make decisions. Physicalising metaphors works both ways. It enables internal experience to be externalised *and* physical metaphorical representations to influence internal processes.

David Grove realised that he could incorporate the fascinating interplay between mind space and physical space into his work. He created a retreat centre with physical places that simulated the common contexts of his clients' metaphors. If a client's metaphor involved a wood, a cave, a hill or an expanse of water, sessions were conducted at real environments that matched the client's imaginative landscape (Lawley, 2006).

## 2.8 Relationship to tacit learning

Tacit knowledge is often the result of tacit learning—learning that happens with little or no awareness. While our attention is engaged with the explicit, tacit learning takes place in the background and in the implicit.

Metaphors illustrate this point since they convey more than the sum of their parts. They have emergent properties—the meaning cannot be predicted simply by examining the forms used in the expression. Important 'extra' information is acquired tacitly—without us consciously realising it. This applies to all metaphors, including those expressed nonverbally. For example, gestures, gaze and head direction will often be used to point to the location of symbols in the speaker's mental space. The metaphor 'Planning ahead requires openness' might be accompanied by the speaker's arm movements indicating the kind of openness, and by an eye squint that suggests looking into an imaginary mid-distance. This non-linguistic information will likely contribute to the listener-observer's understanding of the metaphor but it is unlikely they will be aware of it.

Physically representing our metaphors can produce some startling realisations and insights. Einstein once said, "My pencil is cleverer than I" (Popper, 1994, p.109). One of the author's coaching clients reported something similar:

After the session I drew a picture of me with only one arm. My physical body reacted and I felt a pain in my right arm. After dinner I went back to the picture, started to draw and a left arm just came out, and then the fountain became bigger. And I realised when I have not one arm but both arms 'my size' can be bigger and things are reachable without stretching.

There are several clues in this description of things happening without the client consciously intending them to happen: "My body reacted", "a left arm just came out" and "the fountain became bigger". The combined effect was to create the conditions

for a realisation. The client may find it difficult to explain where these visual and kinesthetic symbols came from or why they changed. Much of this learning—about self in this case—implies tacit knowledge and tacit mental processing.

Two new books represent part of a growing awareness of the value of embodied metaphor in teaching and learning. One ‘features embodied and analogical approaches’ to adult learning, (Taylor & Marienau, 2016), the other concentrates on applying these approaches to teaching young children (McCracken, 2016).

The creation of mental models is primarily a tacit operation. People know they have thoughts, feeling and ways of understanding the world but often they are unaware of how they organise these into a coherent whole (Lakoff & Johnson, 1999). However, the ways individuals make use of space, time, form and hierarchy to organise their experience can become apparent, with deep contemplation often requiring skilful facilitation (Depraz, Varela & Vermesch, 2003; and see Chapter 3 on Clean Language). When they describe this tacit knowledge, they use embodied metaphor.

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