

Concrete, Abstract, Nonphysical

Scholars studying the lexicon make the distinction between concrete and abstract words. They see concrete words as physical entities in the world that can be perceived by the senses. Abstract words are understood by their association with other words. Therefore, abstract words may refer to things that are real but don't have physical referents. This distinction corresponds roughly to the distinction between indexes and symbols. But, as Goddard and Wierzbicka point out the situation can be a little more complicated. Abstract entities can have physical referents. For example, the superordinate category "furniture" refers to physical things, but one can't point to furniture in general. One can point to instances of furniture (table, chair, Ottoman), but these instances do not constitute the whole category. Other abstract words refer to entities that are not physical (law, education, love, communism, duty, mediocrity). So the human brain is capable of generating and processing abstract words that have physical reference and abstract words that refer to nonphysical entities. Without making the distinction between physical abstractions and nonphysical abstractions, it becomes difficult to identify the nonphysical elements of the symbolosphere and thus the nonphysical elements of the mind.

Humans frequently understand nonphysical abstract entities by interpreting them in physical terms. It might be argued that if it is the physical brain that creates and processes these entities, then those productions are physical. I would suggest that the brain physicalizes the entities, but that does not make them physical. Word forms and meanings will be nonmaterial, but when they are spoken, they are processed as articulatory gestures in the physical vocal tract that have been processed previously in

the physical brain and then processed in the brain of a hearer. This constitutes extensive physicalizing of the word and its meaning. But if the word does not have a physical referent in the world (i.e. it is a nonphysical conceptualization which is frequently modified and passed from brain to brain), it is continually physicalized (i.e. processed in physical brains). The physicalizing is a constraint on the nonphysical word meaning and it provides it with some sustainability (unlike a dream), but still allows meaning to evolve.

Conceptual metaphors

Continuing the issue of physicalization, the question we have to understand is how the physical brain can produce nonphysical concepts. George Lakoff (2014) offers insight into this question with his examination of Conceptual Metaphors. He argues that bodily experience in the world allows the production and understanding of conceptual metaphors. Love is an abstract entity. The brain construes it by associating it with physical aspects of the world. Following Lakoff, Evans (2015) discusses this in terms of primitive conceptual metaphors and complex conceptual metaphors that humans derive by way of our embodied brains' experience in the physical world. The "love" concept is understood in terms of three metaphors: the physical container metaphor (He is in love. Mary fell out of love.), the physical force metaphor (She couldn't resist his love. She refused his love.), and the physical journey metaphor (We're at a crossroads. We're stuck in a rut. Their relationship is on the rocks).

Lakoff (2014) argues, "the division between concrete and abstract thought is based on what can be observed from the outside. Physical entities, properties, and activities are "concrete." What is not visible is called "abstract:" emotions, purposes, ideas, and understandings of other non-visible things (freedom, time, social organization, systems of thought, and so on). From the perspective of the brain, each of these abstractions are (sic) physical, because all thought and understanding is physical, carried out by neural

circuitry. That puts 'concrete' and 'abstract' ideas on the same basis in the brain. " (p. 7).

So love is an abstract entity. The brain construes it by associating it with physical aspects of the world (container, force, journey). Humans derive these metaphors by way of our embodied brains' experience in the world. And the metaphors are produced and processed on neural circuitry. But does processing something on neural circuitry make that thing physical? As discussed above, another way of looking at the issue might be that the physical human brain creates, processes, and uses non-physical entities by physicalizing them, i.e. by construing them in terms of experience in the physical environment. When a nonphysical entity becomes physicalized, it does not mean that it has become physical; it has merely been redescribed or restructured using mental concepts that are metaphorically derived from the physical world. It would appear that language is required for this physicalization. By virtue of processing by the human brain which is integrated with a symbolic system, language, a nonphysical abstract entity becomes understood through the physical (love becomes a container, a journey, a force). Or a physical entity becomes an abstract nonphysical entity. Many mental states which we experience physically get classified under a superordinate abstract word. For example, fear, happiness, depression, love, jealousy, envy, and passion, longing, are collectively labeled emotions.

Evans (2015) presents an illustrative vignette about the frustrations of a computer user. The computer is physical. The user is physical. But the qualia of this frustration (an emotion), and the concept of "frustration" itself, are felt by the biophysical body and brain; the concept itself is not physical. If the user recognizes that the feeling is what the society calls frustration, then they are processing an abstract construct which is derived from physical experience, conceptualized by a culture, and encoded in language. It is thus a nonphysical entity that is underpinned at every step of the way by a physical body and brain, but it is not reducible to the physical.

One might argue, that the entity/phenomenon discussed here is so dependent on the physical world, why don't we simply consider it physical? Well, if we want to understand how humans are different from other animal species, including our closest relatives, the

apes, then the human ability to derive nonphysical entities from the physical brain, body, and world may be one of the dozens of ways that we differ from animals. Understanding our brain's ability to produce and to process nonphysical entities may help us understand humanity, and it may help us understand (rather than dismiss) the humanities and the arts that make up so much of the human world.

Because the physical human brain has the ability to produce and process nonphysical entities, words such as obedience, convenience, dominance, patience, temperance, suspense, indifference, offense, law are both abstract and refer to nonphysical concepts. These concepts seem to be abstract categories under which many different entities may fall. It would appear then that abstract nonphysical entities would not exist without language. As mentioned above, one way the brain, working with language, generates nonphysical things is by naming individual entities, which may be physical or nonphysical, and producing a label for a superordinate category that refers to all of them. It then, of course, becomes possible to create labels for categories of categories. So the physical brain produces something nonphysical by abstracting to types of things from tokens of things. And as soon as we get to these abstractions, we can leave the material world. Another way is to imagine nonexistent things and to label them (e.g. zombies, unicorns, ghosts, spirits, gods, dragons, and events such as mythical worlds, lands, life after death, superstitions etc).

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The nonphysical conceptualizations are maintained in some form in spite of their extensive physicalizing (i.e. processed in physical brains). A very clear case for the non-physicality of meanings comes from abstract words. For example, the concept "duty" is not material/physical. To understand the meaning, one may need many examples in many contexts or a definition that would be in words that refer to other words. These words are not "duty"; they are a set of signs that are necessary to explain the nonphysical concept. The same is true for other abstract words such as "dignity," "interest," "salience," "freedom," etc. In Campbell (2012), Deacon explains that words can influence people's thinking and behavior, but "it's not because of anything physically or energetically there in words. It's actually about stuff that's not there. What will have an influence in the world is the meaning, the significance, the surprise value; all of these features that come with our talk, our words, our concepts, our thoughts (14)." "I also don't think that thoughts are in the head. I think that neural activity is in the head, but I don't think that thoughts are, in the sense that there is some stuff or energy there. It's like words on a page; the words on a page are not what matters, the words on the page *convey* [my emphasis] what matters. (14)." He continues, "what matters is not something physical, chemical, energetic. What's so surprising is that, despite the fact that these kinds of things don't have the physical characteristics that should, according to our current theories, cause things to happen – they don't have those attributes – nevertheless they're remarkably powerful and important, once you get living and mental processes in the world (14)."

Reference

Campbell, G. (2012). Interview with Terrence Deacon, PhD, author of *Incomplete Nature: How the Mind Emerge from Matter*. Books and ideas, Podcast, episode #47, Online 07/16/2012, 1-38.

