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> On the Possibility of Definition John H. Schumann Paper Presented at the Biosemiotics Gatherings 2021

Language is a vehicle for symbolic reference which we might define as signs that get their meaning through their relation to other signs. Whereas icons and indexes can accrue meaning by reference to entities in physical world, words that reference concepts that are not exclusively physical (words such as mind, soul, emotion, motivation, purpose) and require associations with other words, in order to convey their meaning. Such words may be particularly difficult to define.

In physics, a physical entity is something that has mass, energy, observability, and causal effects on the world. The concepts listed above lack mass, energy, and observability, but these concepts/ideas can have causal effects on the physical world. But we have to realize that these less-than-fully-physical concepts have a material basis in human biology. At some point in evolution, the human brain, became capable of producing and processing symbolic concepts which lack three of the four characteristics of physicality: mass, energy, and observability. These properties might be considered what Deacon 2012, 2013) calls ententional concepts or absentials that have influence on the world because they are not present, because they are lacking. The absence of mass, energy, and observability, nevertheless leave these concepts with causal properties. But for the human brain to create, use, and understand these concepts they are often physicalized, by which I mean they are understood by association with physical entities. Evans (2015), following George Lakoff, discusses this in terms of primitive conceptual metaphors and complex metaphors that humans derive by way of our embodied experience in the physical world. For example, the "love" concept can be understood via metaphors such as the physical container metaphor (He is in love. Mary fell out of love), the physical force metaphor (She resist his love. She refused his love.), the physical journey metaphor (We are at a crossroads. We're stuck in a rut. The relationship is on the rocks).

Frequently, in the literature, what I am calling not-exclusively physical concepts are referred to as abstract concepts. However, the term "abstract" hides the physical/material issues that are involved in such terms. Lakeoff (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 nonphysical 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 the neural circuitry. That puts 'concrete' and 'abstract' ideas on the same basis in the brain" (p. 7).

In the above, the only physical property that Lakoff identifies as lacking is observability. I would argue that what is also lacking are mass and energy. And the brain attempts to compensate for the absence of certain physical properties by associating the non-exclusively physical concepts with physical entities. Thus, a nonexclusively physical concept can be associated, to a greater or lesser extent, with something physical. For example, the concept Santa Claus is highly physicalized (as an elderly man with a big white beard, a red snowsuit, a sleigh, 12 reindeer who delivers gifts around the world). Other concepts are only minimally physicalized. The Holy Spirit is referred to as the third person of the Trinity, but "person" here does not mean that spirit has become physical; it has merely been redescribed or restructured using a mental concept that is 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 the symbolic system, language, a less than fully physical abstract entity becomes understood through the physical associations (love becomes a container, a journey, and a force). Or a physical entity becomes abstract as less-than-fully-physical entity. Many mental states which we experience physically get classified under a superordinate abstract word, for example, fear, happiness, depression, love, jealousy, envy, and longing, and passion are collectively labeled emotions. And different concepts get different degrees of physicalization (as we see with the concepts Santa Claus and the Holy Spirit.

Defining concepts that are not exclusively physical.

Many concepts which refer to non-fully-physical-entities are difficult to define. Biosemiotics has certainly recognized and wrestled with this problem. The Biolinguistics Glossary Project has done extensive studies on what is meant by terms such as semiotic threshold, intentionality, agency, and umwelt. The Biosemiotics Glade has examined the terms semiosis, agency, representation, scaffolding, and recursivity.

Such concepts seem to resist final definition. This, of course, is a source of lexical flexibility. It allows us to generate ideas, ideologies, idealizations, concepts, and conceptualizations that are not tied to specific physical entities. But the same time, it generates ambiguous reference, vagueness, and uncertainty. Nevertheless, we constantly hear that science demands clear definitions. And I would agree. Science should have clear definitive meanings for the terms it uses. That is an important constraint on science. And science often meets that constraint because, generally, the objects of its investigation are physical, fully physical. They have mass energy, observability and causal effects. This is much less true for terms used in philosophy, law, and the social sciences.

Science and the scientific method find themselves in certain difficulties when they face the less than fully physical world produced by the human ability for symbolization. Nailing down non-observable symbolic entities is not what science was developed to do. This is because nonphysical entities do not have the same order of determinism as entities in the physical realm. Symbolic concepts are degenerate and pluripotential. Thus, symbols (words) can have synonyms whereby the same or similar meanings can be carried by different words, and a single symbol (one word) can carry several different meanings (polysemy). And in the case where the entities referred to are nonmaterial, they are unobservable because they lack a physical form.

If the object of research is physical, then the norms of the scientific method are generally appropriate. But if the entity is the product of the human ability to create concepts that are not exclusively physical, we have to ask whether the scientific method provides the right epistemology. In the study of quasiphysical abstract concepts (e.g., emotion, motivation, identity, acculturation, self, attitude, patience, goal, appraisal), we might ask whether normative empirical science permits the accrual of

final answers? Do nonphysical entities have the same order of determinism as the entities of physical science?

Naming is a remarkable human ability; however, the symbolic association between a thing and its name can sometimes lead to distortion especially when dealing with semi-physical concepts. These concepts may become essentialized and reified, and the assumption may be made that what they refer to must have a physical instantiation that can be studied empirically and be understood directly, fully, and correctly. Under this notion, concepts such as "freedom", and "love" cannot have characterizations that are equally precise and scientific. Here we have nonmaterial symbolizations being forced to masquerade as physical realities.

According to the Percean scholar, Walker Percy, the fact that the symbol is the object (but in another way) is to some extent mysterious and has to be accepted because it is not amenable to explanation or clarification by means of its part in the triadic relation; science and the scientific method, according to Percy, especially in experimental science, lies outside the domain of denotation, quazy identification, meaning assertion, imputation, and interpretation. Following Percy, Perkins (2011) notes, "dyadic science studies relationships of things in the world, but 'the coupling relation of a sentence is not like any other world relation. Yet – indeed for this very reason – it may symbolize any world relation whatever... (Percy, MB 169)'. So, sentences are used by science, but dyadic science can't get outside them or outside itself to examine them with its own method. It can't examine its own sentence uttering activities – it can only examine only the rest of the world" (Perkins, 116).

A symbol can be anything, but Percy argues that a vocable (a word) is an ideal symbol. The vocable has to be empty, transparent, and thus lacking any biological relevance; it can't be a sign to take some action. The symbol also has to be different/distinct from the object. If it is the same or similar to its referent, it would be an icon. A symbol must be physically unrelated to its the object; thus, it must be arbitrary. This gives the symbol agency in the mental (i.e., nonphysical) world. The symbol is simply valued for the meaning it carries. This allows it to take on the essence of the object, but, of course, in a different way.

This the magic of naming gives us a partial sense of what the word means or what it can come to mean. Therefore, it may be impossible to find a definitive definition of such terms. However, I would argue that well thought out attempts to do so provide perspectives or points of view that may be useful in understanding the phenomenon, but perhaps only understanding it asymptotically.

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8