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### On Physicality

For several years, I've been interested in notions of physicality. In biosemiotic terms, icons and indexes can accrue meaning by reference to entities in the physical world, whereas symbolic reference is often made to concepts that are not exclusively physical. In physics, physicality is defined as an entity that has mass, energy, observability, and physical effects on the world. Such symbolic reference involves concepts like mind, soul, emotion, motivation, and purpose, democracy etc.<sup>11</sup> Such concepts lack mass, energy, and observability and therefore, they cannot be considered fully physical; nevertheless, they can have causal influence on the world's (Schumann, 2021).

What to call such concepts has been a problem. In scientific circles, the term "nonphysical" is not well received. This could be due to the concern that the label, "nonphysical" may bring religious, mystical, magical thinking into the scientific perspective. Among the alternate terms that have been considered as replacements are "quasi-physical," "not fully physical", "not exclusively physical", and "symcons"(symbolic concepts).

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Even though the scientific community is uncomfortable with notions of non-physicality. It is interesting to note that there seems to be no discomfort with the concept, ABSTRACT, and the definitions of abstract generally involve the concept, "*non physicality*".

For example,

"Abstract thinking is the ability to understand the concepts that are ... not directly tied to concrete physical objects and experience." "Concrete thinking is connected closely to objects and experience that can be directly perceived."

[[HTTPS://www. Health line. Com/ health/ abstract-thinking](https://www.healthline.com/health/abstract-thinking). Page 1, 2 by Rebecca Jay.

[Abstract concepts exist] in thought or as an idea but not having a physical or concrete existence. [Definition of abstract – Info Space Yahoo search results].

Abstract – definition and meaning. Thought apart from concrete realities, specific objects, or actual instances: an abstract idea expressing a quality or characteristic apart from any specific object or instance, as justice... [dictionary.com].

Adjective. "Existing only in the mind; separated from embodiment." Abstract words: 'truth' and 'justice'. Synonyms: conceptual, ideational, notional, being of the nature of a notion or a concept. [Abstract – definition, meaning & synonyms [Vocabulary.com]

[We might ask, "what has been abstracted from concepts that are considered abstract?" Well, what is absent from abstract concepts are mass energy, and observability.]

Thus, 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 may correspond to roughly to the distinction between indexes and symbols. But 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, communism, duty, mediocrity). So again, 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.

But 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. However, all 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, but still allows meaning to evolve.

The emergence of the nonphysical symbolic concepts or symcons.

The explanation offered here is that the brain in conjunction with its capacity for language has the ability to produce and process nonphysical entities in the form of concepts that have no physical instantiation. They can only be understood in relation to other words associated with the nonphysical entity.

Therefore, we have an existence proof that the brain creates nonphysical entities. How exactly that is done at the neurobiological level is not known, but it can be understood at the phenomenological level. We are aware that we have

sensations, feelings, which experiences, thoughts, and dreams. This development is called "consciousness" (in English). The concept of consciousness has no physical reference in the world. You cannot point to it. We make the assumption that it takes place in the brain, but it's not the neural firing and chemical transmission that constitutes what we perceive as consciousness. It is a phenomenon that humans have discovered without knowing its biological origins. Indeed, this is true of all nonphysical concepts; concepts that have no physical correlate/referent in the world.

How do nonphysical concepts emerge? An ad hoc account might be the following: First, the brain captures something about a phenomenon that is nonphysical (e.g., grit, motivation, emotion, investment, identity). A researcher wants to understand this concept. The concept is nonphysical/nonmaterial. She can't see it, touch it, taste it, she can only think it. She reads the literature on the concept. She may operationalize it for a research instrument (e.g., a questionnaire). She gets some data; it adds to her understanding of the concept. Another researcher operationalizes the concept somewhat differently and examines it once again with appropriate research techniques. The two researchers generate related, but somewhat different understandings of the nonphysical phenomenon. This can go on for decades as it has in the study of motivation in second language acquisition. This field has a history of over 60 years of examining the (non-physical) construct, motivation. All well-designed and executed studies as well as first-person autobiographical accounts contribute to our understanding of motivation in SLA. When will we have the final, definitive explanation for this phenomenon? I would suggest that it is the nature of nonphysical phenomena's that there is no final

definitive explanation. The nonphysical world may not operate like the physical world.

Why should there exist two terms such as "abstract" as an adjective which indicates that the following noun is not wholly physical, not exclusively physical, or even "nonp[hysical".

Even with abstract concepts there is a felt need for determining the "grounding" of such concepts. The term "grounding" is an abstract concept itself. "Grounding qua grounding" does not have a unique physical referent. However, a specification of grounding involves what I have been calling the process of physicalization.

In contrast to concrete words the references of which are typically observable, physical, grounded entities, abstract words tend to refer to non-perceivable, nonphysical, unbounded entities. Abstract words often do not have their grounding in the senses (vision, audition, touch, taste).

So, reference to symbolic entities can sometimes lack physical grounding, and abstract concepts can similarly be dissociated from physical entities. Thus, we might hypothesize that there may be some similarity among symbolic, abstract, and nonphysical concepts. But "abstract" is the acceptable label for these concepts while "nonphysical" is not.

Now one might ask "why not just accept the term "abstract" for reference to concepts that are less than fully physical?" I would suggest that the use of the term abstract allows us to ignore the fact that the human brain can produce concepts that are not fully physical. Such concepts give us important intellectual flexibility. In fact, to more completely understand the brain, it would be helpful to know just how it produces such concepts. It might even help our understanding of such tortured concepts as consciousness, information, cognition, free will etc. The maintenance of a rigid physicalists perspective on the world may actually blind us to how our physical and the symbolic worlds work.

The literature on "abstract" concepts is fascinating and extensive. The literature on nonphysical concepts is virtually nonexistent because physicalism dominates our studies in the effort to see them as equivalent to the concepts in physics and biology.

There may be social causes for this situation. The words, "science", "scientific" are terms of deference; essentially, they are honorifics. In the social sciences, where most of the concepts are not physical, in the sense term is used and maintained in physics, biology. Therefore, we distance ourselves from notions of nonphysical, and we play by the rules, giving deference to authority by hiding such phenomena under the label "abstract".

Symbolic reference provides freedom to transcend the physical/material world. With the sign processes involved in symbolic reference, the physical world and the not-exclusively physical world of symbolic concepts can be bridged, thus scaffolding new ideas, knowledge, perspectives etc. that are not constrained by the laws of physics. As Hoffmeyer has put it: "Sign processes painlessly cross the borders between those domains of reality in the Cartesian understanding are unbridgeable separate orders, science and the humanities, body and mind, nature and culture." (ref)

Why might it be important to recognize the less than full physicality of symbolic concepts?

1. Such concepts are very frequent in our language.
2. They behave differently than fully physical concepts (They lack mass, energy, and observability, but nevertheless, they have causal effects on the world.)
3. Not taking account of the physicality of such concepts misrepresent our notion of science. There it is often the idea that all research should conform to the procedures and standards of the physical sciences.
4. The referents of concepts that are not exclusively physical, and they cannot be reduced to more basic elements/components. Although there common, they are not easily compatible with reductionism.
5. Such concepts cannot be studied directly; they have to be examined through other symbolic systems such as questionnaires, interviews and mathematics.



6. Symbolic concepts are not easily defined, often have many synonyms, and therefore require i trainingnterpretations which may then differ among scholars.
  
7. They generate uncertainty about what they reference, and therefore, resist ultimate definition and thus understanding.

## Reference

Schumann, J. H. (2021) "Exploring nonexclusively physical concepts/symbolic physicality". (Available at [johnschumann.com](http://johnschumann.com))