

Review of: "Creating ontological definitions for use in science"

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As a physician (and physiatrist) I really appreciated this article: concise and clear. The linguistic precision it recommends is of the utmost importance in Medicine (the names of “diseases” and “syndromes” are ontologies). The article represents a thorough, yet friendly manual on ontological, not dictionary/descriptive type (akin to the so-called “stipulative” type, I understand). (1) What is missing (perhaps too large a topic for a short article) is providing some hints on the deep philosophical assumptions (and prudence) needed to accept this method (which I’m personally endorsing). Once the “rules” are accepted, how can we reach a consensus on the contents? And how can we check that a class definition works? Because any useful definition, even an ontological one, is a matter of consensus.

In general, the consensus is more difficult to reach, the more the “class” or “entity” to be defined is somehow intangible or, stated otherwise, it relates to “high-order”, abstract variables (e.g., defining “force” is perhaps easier -once the Newtonian model is accepted- that defining “Depression”, “Europe” or “Liberalism”). For instance, the definition of “Rehabilitation” is still a very vague and controversial one in medical research, thus impairing any bibliometric attempt on the topic (which are the “rehabilitation” articles?). (2) The concept itself of “disease” and “illness” are often confounded (can illnesses exist without diseases?). How much should they really be considered as fully distinct entities? (3)(4). Ontological definitions assume discontinuity, which is an assumption indeed.

Splitting a continuum to create classes is always an artefact. Splitting a continuum implies loss of information(5), but it can be very useful in practice. Classification systems (i.e., listing ontologies) must be useful, not absolutely “true”. Once you renounce the information provided by continuity, however, classification must be rigorous. For instance, the WHO’s International Classification of Diseases (ICD, now at its 11th revision) proved highly successful worldwide in the health care field, but the WHO’s International Classification of Functioning, Disabilities, and Health (ICF) (i.e., a list of the various aspects of “disability”) was not. The former provides codes labelling what a disease is and, implicitly, what it is not (diabetes IS NOT hip fracture), whereas the ICF codes can be selected arbitrarily (in type and number) to describe the “functioning” of a person. The ICD codes are “ontologies”, i.e., entire concepts. The ICF codes are words, allowing you to build an innumerable set of “ontologies/concepts/entities”. That’s why the ICF should be considered as the dictionary of an artificial language (no more successful than Esperanto), not a classification system, despite its acronym (6). To sum up, this is really a welcome article, highlighting how serious and precise must be the apparently simple work of creating the definition of “ontologies”. A companion article is needed, perhaps, clarifying that a class definition does not imply the existence of the defined object outside the creators’ mind (a Unicorn can be thoroughly defined, but nobody ever saw one outside a fairytale and movies). Isolated from epistemic premises, and without examples of success on the experimental

field, the article may give the false impression that setting the rules of the game is sufficient to win the game.

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