Towards an Ontological Module of Mental Disease

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Mental disease remains a nebulous concept despite the significance of wide agreement about it for further development of the biomedical ontology research, partly because there are some topics yet to be considered carefully in existing mental disease ontologies. Examples include the vital role of signs and symptoms of mental disease as compared to its physical (neurobiological) basis; the intricate, socio-cultural character of the abnormality of mental disease; and consistency with the domain-level knowledge and practice concerning mental disease, including the terminological interchangeability between 'disease' and 'disorder'.

This research aims to build an ontological module for mental disease, thereby contributing to its general understanding. Characteristic of my study is to explore the nature of mental disease from a foundational perspective. In particular, I focus on the centrality of the concept of causation to the whole biomedical field. Appropriate medical treatment requires practitioners to identify accurately the cause of a disease by observing its symptoms as its effect. A proper ontological characterization of causation would therefore help us approach the notion of mental disease from a clinically reliable viewpoint.

Consequently, I elaborated a theory of causation whose core is the fundamentality of the *context* to causation and offered a detailed account of *causal chains*. I then applied the theory to the existing, River Flow Model (RFM) of diseases, which meshes with my purpose of modeling mental disease because it takes disease to be causal chains of abnormal states and attaches great importance to its symptoms. I further provided a coherent extension of the RFM to mental disease based on the existing, *causal functionalist* theory of mind (which, roughly, characterizes mentality in terms of its causal role). In the future I plan to capture the sensitivity of the abnormality of mental disease to socio-cultural contexts in terms of my context-based theory of causation.