

DISSERTATION PRÉCIS

Talk of levels is pervasive in today's science and philosophy. People speak of the biological level or the quantum level, but what sorts of things are these levels? It's commonly thought that basic building blocks form a lowest level; these basic blocks then fit together to compose complex wholes that form a next level. Particles join together to make atoms, which join together to make molecules, which join together to make cells, and so on. Many scientists and philosophers suggest that increasingly complex things exist on increasingly higher levels, and the aim of different sciences is to study the entities at different levels. Physics studies the foundational level and the so-called special sciences—such as biology, psychology, and cognitive science—study the higher ones. My dissertation identifies a problem for this talk: all the accounts of what levels are and what conditions are responsible for them are inadequate.

I argue that there really are levels that are part of the universe's structure, but there aren't as many as the picture above seems to suggest. On my view, a level comes to exist if and only if a new and distinct thing emerges from the arrangement of other things—an emergent entity that has properties that are distinct in kind from the properties of the more basic things. Minds, for instance, might be emergent since they seem to have properties (like feeling pain) that are resistant to reduction and are completely different in nature from the properties of the physical-chemical brain. However, many of the things that scientists talk about—for instance, atoms forming molecules and molecules forming cells—are not such things.

I begin by articulating what a level is—a question that is surprisingly taken for granted by many. According to the famous view of Paul Oppenheim and Hilary Putnam, levels come to exist when simpler things compose more complex things. For them, it is the composition relation that is responsible for level generation. However, I argue that composition is not sufficient for level generation. I then argue that constitution – the relation that holds between clay and the statue it forms – is also insufficient for level generation, contrary to the arguments of Lynne Rudder Baker. Having rejected two of the prominent views on what gives rise to levels, I argue that we shouldn't become level skeptics, like John Heil; not only are his arguments against the reduction of consciousness insufficient, his criticisms of what he calls the Picture Theory of

language, according to which we can list off our ontological commitments by examining how we speak about the world, is the only option we have for doing ontology.

Finally, I submit that emergence is necessary for levels. In particular, I argue for a form of strong emergence that is more akin to the views of the British Emergentists, such as J. S. Mill and C. D. Broad. According to the view, genuine emergence requires both novel causal features and novel objects to possess those features. This stands in contrast to nonreductive physicalists' weak emergence, which either fails to distinguish allegedly emergent objects from their composing base (Wilson), or is motivated by mistaken views of what reductionism is and how to do ontology (Wimsatt). If my view is right, then there aren't as many levels as the characterization with which I began seems to suggest, for there are too few strongly emergent things. Thus, much of the levels talk in science refers to theoretical levels or compositional levels, but not ontological levels.