

## **Statement of Future Research**

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My research interests include philosophy of mind, metaphysics, and philosophy of science. I am interested both in projects that are exclusive to these sub-disciplines and projects where these sub-disciplines intersect. Here I describe my plans for extending research that began with my dissertation along with research that I began independently of my dissertation.

### **Metaphysics of Science**

My dissertation attempts to advance new ideas regarding the important topic of Emergentism—ideas that I intend to continue developing. I give an account of levels—both what they are and what gives rise to them. My view is that an ontological level is generated if, and only if, an emergent entity arises from its parts. And emergent entities arise if, and only if, entities stand in a relation (or relations) to one another such that they give rise to at least one novel causal power. I additionally argue that novel causal powers require novel objects to be bearers of those causal powers. Furthermore, I criticize nonreductive physicalist views of emergence, such as William Wimsatt’s emergence as non-aggregativity and Jessica Wilson’s emergence as eliminations in degrees of freedom, which fail to establish the genuine distinctness of allegedly emergent entities.

Also in my dissertation, I discuss various understandings of the mereological relation—the relation of parts to wholes—as well as responses to the Special Composition Question—“When do parts join together to make wholes?” One area where I think more needs to be said is in our account of science’s use of mereological notions. I plan to develop an account of how to understand what scientists are saying when they use ontological language, such as ‘part’ and ‘whole’.

### **Metaphysics**

One of my most developed papers, which I hope to publish soon, concerns the determinate-determinable relation, an example of which is the relation that holds between scarlet and red. Scarlet is said to be a determinate of the determinable red. Jessica Wilson has recently argued that at least some determinables are fundamental. I am working on an account according to which determinables are never fundamental by closely examining some alleged cases of fundamental determinables from the sciences—in particular the phenomenon of iridescent colouration and quantum superposition, both of which have been offered as examples of fundamental determinables. Interestingly, on my way to the conclusion that there are no fundamental determinables, I argue that, contrary to commonly thought, the Kochen-Specker Theorem does not rule out epistemic interpretations of quantum mechanics.

In other work with a colleague, we defend a view according to which science and metaphysics are equal partners. This view is also defended by E. J. Lowe, but needs further development and clarification. It also needs defense against arguments made by neo-Carnapians,

such as Thomas Hofweber. To this end, we co-drafted a paper arguing that the neo-Carnapian's fail to show that traditional metaphysics should be abandoned. In our view, metaphysics asks more fundamental questions than science, but this does not make metaphysics of greater importance or value than science.

### **Philosophy of Mind**

Elsewhere in my dissertation I address a particular response made by non-reductive physicalists to the exclusion argument against the causal efficacy of the mental. According to this response, overdetermination is not problematic because there may not be a fundamental level. Since it would be absurd to conclude that all causation "drains away", the non-reductive physicalist accepts overdetermination. I respond by arguing for the necessity of a fundamental level. If successful, the argument would leave the non-reductive physicalist unable to appeal to the possibility of there being no fundamental level to neutralize their overdetermination problem.

Relatedly, outside of my dissertation, I am developing an argument against Douglas Ehring's response to the exclusion argument. He believes that if we adopt a view of properties according to which properties are tropes, we can identify token instances of mental properties with tropes and solve the exclusion problem. I doubt that Ehring's solution can truly succeed while remaining authentically non-reductive materialist.

### **Philosophy of Science**

In research independent of my dissertation, I argue that, contrary to contemporary dominant thinking, scientific monism is the preferable view of science. Scientific monism—the view that there is but one factive account of the universe and science's purpose is to discover it—has been critiqued by scientific pluralists for its objective view of science and its failure to pay sufficient attention to scientific practice. As part of my defense of scientific monism, I flesh out three kinds of scientific pluralism that recent scientific pluralists are committed to—Account Pluralism, Purpose Pluralism, and Practice Pluralism. With some adjustments, monism can account for the pluralist critiques; making these adjustments, I present new arguments against scientific pluralism.

Relatedly, I am working on scientific explanation and defending Philip Kitcher's unification theory of causal explanation. This work led to a recent publication entitled "Asymmetry in the Unification Theory of Causal Explanation" (*Synthese* 2018). There is more to be said in defense of unificationism though. The literature criticizing unificationism breaks into two broad categories. First, many philosophers believe that unificationism suffers from asymmetry problems, according to which unificationism endorses backward explanations. And second, many philosophers think that unificationism suffers from the problem of irrelevancy, where it endorses completely irrelevant things as explanatory of a phenomenon. The above paper addresses the first problem; my future work will aim to develop solutions to the second problem.