Dependent Autonomy

Henry Blanchette

Metaphysics of Science
Reed College

Abstract

This is the abstract.

1 Introduction

This is the introduction.

A thought that a previous philosopher wrote about (Wilson J. 2018).

References

[1] Wilson J. 2018. *Metaphysical Emergence*

[2] Fodor J. A. 1974. *Special Sciences*

[3] Bedau M. 2018. *Downward Causation and the Autonomy of Weak Emergence*

[4] Bedau M. 2008. *Is Weak Emergence Just in the Mind?*

[5] Wolfram S. 1985. *Undecidability and Intractability in Theoretical Physics*

[6] McLaughin B. P. 1992. *The Rise and Fall of British Emergentism*

[7] McLaughin B. P. 1997. *Emergence and Supervenience*

[8] Hempel C., Oppenheim P. 1965. *On the Idea of Emergence*

[9] Searle J. 1992. *Reductionism and the Irredicibility of Conciousness*

[10] Dennett D. C. 1991. *Real Patterns*

[11] Humphreys P. 1997. *How Properties Emerge*

Annotated Bibliography

Wilson J. 2018. *Metaphysical Emergence*

Chapters 1 & 2

Chapters 3 & 4

Chapter 5

Fodor J. A. 1974. *Special Sciences*

Consider and contrast two scienficially fundamental perspectives: the *Unity of Science* and the *Generality of Physics*. The Unity claim is actually stronger than the Generality claim; Unity of Science requires all sciences to have as their aim the construction of a physics-termed explanation of their studied phenomena, while Generality of Physics requires only that instances of studied phenomena be completely explanable in terms of phyics. The Unity claim is, in fact, the central claim of Redictive Physicalism.

However, there is a seeming paradox in the Unity claim - it pronounces that the continued success of the special sciences is just more and more evidence that they ought to be disconinued; they stray further and further from an explanation in terms of physics. The *special sciences* are sciences that do not deal directly or appeal to physical explanations.

Reductive Physicalism is the view that all special sciences must reduce to physics. For some special-science relationship $S_1 \to S_2$, reductivism requires there be a reduction with to physical predicates P_1, P_2 such that

$$\begin{aligned} S_1x &\to S_2x \quad (1) \\ S_1x &\rightleftharpoons P_1x \quad (2a) \\ S_2x &\rightleftharpoons P_2x \quad (2b) \\ P_1x &\to P_2x \quad (3) \end{aligned}$$

This setup forms a sort of bridge between the special-science relationship and a physical relationship. Though, there are some problems with the existence of bridges like this and how it interacts with the meaning of $\to$.

A way to address the bridge problems is with *Token Physicalism*, where all events that the special sciences talk about are physical events.

1. Token physicalism is weaker than materialism, which claims token physicalism and that every event falls under the laws of some science or other.

2. Token physicalism is weaker than type physicalism, where every property mentioned in the laws of any science is a physical property. This in fact implies token physicalism.

3. Token physicalism is weaker than reductive physicalism, which claims token physicalism and that there are no natural kind predicates in an ideally completed physics which correspond ot each natural kind predicate in any ideally completed special science.

Every science implies a taxonomy of the events in its univers eof discourse. It creates theoretically- and empirically- inspired vocabulary, which fall under the laws of the science by virtue of satisfying those predicates. Not every theoretical predicate is valid or good though.

To fix reductive physicalism, can allow bridge relations to be in the form

$$S_x \leftrightharpoons P_1 x \vee \cdots \vee P_n x$$

where $P_1 x \vee P_n x$ is not the kind of natural kind predicate in the reducing science. This allows for "bridge laws" to not really be laws, since they are not law-like. Reducing with this kind of bridge law looks like

$$P_1 x \vee \cdots \vee P_n x \leftrightharpoons P_1' \vee \cdots P_m'$$

Thesis:

> There are special sciences not because of the nature of our epistemic relatin to the world, but because of the way the world is put together: not all natural kinds (not all the classes of things and events about which theree are important, coutnerfactual supporting generalizations to make) are, or correspond to, phyical natural kinds.
>
> A way of stating the classical reductionism view: things which belong to different physical kinds ipso facto can have no projectible descriptions in common; that if x and y differ in those descriptions by virtue of which they fall under the propert laws of physics, they must differ in those descriptions by virtue of which they fall under any laws at all.
>
> If science is to be unified, then all such taxonomies must apply to the same things. If physics is to be basic science, then each of these things had better be a phyical thing. But it is not further required that the taxonomies which the special sciences employ themselves reduce to the taxonomy of physics. It is not required, and it is probably not true.

Bedau M. 2018. ***Downward Causation and the Autonomy of Weak Emergence***

Bedau M. 2008. ***Is Weak Emergence Just in the Mind?***

Wolfram S. 1985. ***Undecidability and Intractability in Theoretical Physics***

McLaughin B. P. 1992. ***The Rise and Fall of British Emergentism***

McLaughin B. P. 1997. ***Emergence and Supervenience***

Hempel C., Oppenheim P. 1965. ***On the Idea of Emergence***

Searle J. 1992. ***Reductionism and the Irredicibility of Conciousness***

Dennett D. C. 1991. ***Real Patterns***

Consider the question "are beliefs real?" Is it correct to *believe* in centers of gravity? Why or why not? There are examples of people that argue these kinds of beliefs are obviously unreal and others that argue that they are obviously real (e.g. Dretske).

What about the case of a completely arbitrary x-center, such as the center of Dennett's lost socks. Are such concepts and beliefs about just as real as with other, more "legitimate" x-centers? Or does deciding the reality of concepts and beliefs about just to do with usefulness or interestingness?

A question that naturally arises is "should we treat mental states/patterns (e.g. belief) as *real* in the same way and to the same degree as other patterns, such as electrons?"

Dennet givese the canonical *Bar Code* example. It is unclear that the underlying Bar Code pattern is there for all of the cases, except for E and F where it starts to get iffy. In fact, in F, it is technically indistinguishable from random noise, from strictly a retreospective perspective (without looking at the generating code).

Dennett refers to Chaitin's idea of *incompressibility*, in that patterns are recognizable because they are compressible while noise is incompressible. But compressibility comeswith two degrees of freedom: accuracy and simplicty. Usually, it is a trade-off from one to the other. It is merely a design choice for which is more important in which circumstance, and that it isn't an inherent metaphyiscal fact about the reality of the concerned patterns themselves. There are also good examples of this trade-off in the *Game of Life*.

A final thought:

> Fine tuning could of course reduce these probabilities (of modelling which method was used to create a bar code pattern), but that is not my point. My point is that even if the evidence is substantial that the discernible pattern is produced by one process rather than another, it can be rational to ignore these differences and use the simplest pattern description (e.g. bar code) as one's way of oranizing the data ...

Humphreys P. 1997. ***How Properties Emerge***