

Contribution to a dialog on philpapers on the Principle of Uniformity

http://philpapers.org/bbs//thread.pl?_lmsg=Message%20postedtId=598
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I have followed this thread with interest, and I'd like to see the participants expand a bit on their points.

Muad'dib Muad'dib starts off by noting that Popper suggests that the Principle of Uniformity is metaphysical and non-falsifiable. This raises two issues that should have been clarified before the discussion proceeded.

First is the ambiguity that surrounds the Principle of Uniformity. It seems to have originated with 16th century neo-Platonism, which roughly held that truths discovered in one area of investigation were true everywhere. Because this implied that knowledge of our cosmos would then be cumulative, it is often mentioned as a foundation of modern Western science.

However, things are not so simple. It seems that a degree of predictability is a condition for effective action in daily life, and so the Principle of Uniformity at a deeper level really meant a universalization of private life or interests. This implies an ideological dimension of the Principle of Uniformity that I believe cannot be ignored.

Its effect was profound, for it introduced a universal subject-object ontological contradiction. That is, physical reality has a nature that is independent of any frame imposed by the mind or the observing subject (or God). In the physical sciences, reality is consistent throughout space and time. The observer cannot perform a measurement that yields a result logically inconsistent with a previous measurement, under a set of laws that are independent of where and when the observations were made. By making all things essentially independent closed entities that have universal laws as their intrinsic properties, their relation can only be causal in nature (uniformitarianism). It is an intrinsic potency of one thing that causes a change in the other. All change, then, must be due to a causal relation of entities.

Because this accords with so many experiences in daily life and was a pre-supposition that encouraged the advance of modern Western science, it is easy to take it for granted. However, it did not accord with the pre-modern Western ontology; it is not essential to many non-Western cultural traditions; and, most significantly, it ill accords with contemporary science. In all three

alternatives it is assumed that things are essentially entangled rather than autonomous and self-contained.

Without here elaborating the first two points, contemporary science seems to be moving back to a notion of entanglement. For example, there is quantum entanglement and there is special relativity. Causality today is turning to a search for the mechanisms of singular causality rather than presume the force of universal laws. In philosophy, we have people like David Bohm with his implicate order. That is, it seems the essential nature of things depends on how they are framed by their environment. Observational data is as much a function of their relation to the observer as their intrinsic properties (that this does not imply subjectism is another topic).

It is in this context that I place the contributions to the current dialog. Mudd'ib wonders why Karl Popper draws a sharp distinction between science and such metaphysical statements as the Principle of Uniformity. It seems that Popper is making a value judgement here, which at the very least is that metaphysical truths (such as non-local unobservables) should not contaminate the practice of science. Popper also implies that the test of scientificity is an experimental manipulation of the world depending on the outcome being predictable. In other words, Popper embraces the modern Western ontology of closed systems such that outcomes are predictable. In mental life, this framing of the situation is called logic, for conclusions are necessitated by premises.

However, this is a highly artificial view of the world. First, in principle and in practice outcomes are never exactly predictable, for closure is only a hypothetical limiting case. Secondly, depending on how we define the word "emergence", almost half the processes we encounter, if not all, are not entirely predictable, logical or law governed (even if those laws are statistical). The point is that experiment, whether or not Popper's narrow falsificationism, cannot in principle and does not in practice preclude the relevance of unobservables, such as existential or modal statements of fact.

Herbert Huber suggests that another way to think about metaphysical statements is Kant's point that metaphysics concerns questions beyond human experience, which go beyond evidence. While it is true that one can never prove a universal statement by appealing to particular instances, it seems that Kant and Popper are very much in agreement. Their difference is only a matter of different contexts. In order to legitimate universal ethical norms,

Kant realized they could not rest on practical experience, but Popper was instead concerned about the conditions necessary for natural science. It is worth noting that the ontology of Popper has typically characterized natural science until fairly recently, and the ontology of Kant has characterized the social sciences.

The issue comes up whether the Principle of Uniformity is a universal or existential statement. I don't see how this can be addressed without considering what "universal" has come to mean in the natural sciences. Today we hesitate to reify abstract universals, but instead see universal laws as merely a generalization of our experiences that give us some confidence in our predictions. There is a tendency instead to see matters in terms of singular causality, in which explanation does not appeal to universal laws, but to the inner mechanism of particular changes. If this be accepted, then the Principle of Uniformity is either merely a generalization of experience or it is an existential statement. As for existential statements, they appear to express the powers of mind to represent the world in a way that is intelligible to consciousness, rather than true of reality independent of mind.

For an example of an existential statement, Aristotle (roughly) suggested that processes have three aspects: the modalities of actuality, possibility and potency. The latter two are unobservable that they cannot be entirely inferred from observations (any number of actualizations of possibilities and potencies can never expose all possibilities). To understand a process, we separate these modalities in thought, but in reality, they are not separate, but entangled in a way that is beyond our mental powers.

So the final question raised about the possibility of an existential statement conflicting with a universal law, really makes no sense to me. If a universal law is merely a generalization rather than a reification, and if an existential statement is an issue of epistemology rather than ontology, we are dealing simply with epistemology. Indeed, this is the classic problem that cripples especially the social sciences: how do we reconcile in thought the particular and the abstract. There is a broad intuition that "process" is the answer, and many have looked in some general way to the Darwinian model in which there particular structures (selection) constrain possibilities (genetic variability).