Reply to DesAutels' Critique of Sober and Elgin on Laws of Biology

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Beatty (1995) argued that there are no biological laws, where laws are understood to be noncontingent generalizations. Beatty argues for this general thesis by discussing several biological generalizations; he points out that their truth causally depends on contingent events that occurred in the history of evolution. For example, if Mendel's "law" of fair meiosis is true in one or more populations, this will be because the genetic system evolved to yield the result that Aa heterozygotes produce 50% A-bearing gametes and 50% a. The occurrence of the selection pressures that yield this result are contingent, so the Mendelian generalization, if true now, is contingent. Beatty claims that this pattern generalizes, covering all biological generalizations. None of them are laws.

Sober (1997) and Elgin (2006) criticized Beatty's argument without contesting his assumption that laws must be noncontingent. Suppose the conditional

(C)   If P then Q

is contingent because it was caused to be true in a given time period by the earlier event I. Now consider the following generalization:

(*)   If I occurs earlier, then [if P then Q] will be true later.

The fact that (C) is contingent does not show that (*) is. Moreover, if (*) is true because I *caused* (C) to be true, then some statement of the form given in (*) will be a law, if causation requires the existence of laws. The main thrust of this argument is not to show that (*) is a law, but to show that Beatty's argument for his evolutionary contingency thesis is flawed. However, we *do* think that there are laws of the form given in (*). And laws of the form given in (*) will be "biological" if the vocabulary used to flesh out I, P, and Q, is biological. We emphasize that (C) and (*) are schemata that can be filled in in many different ways. Not every way of filling in (*) will be a law.

DesAutels (2009) has two objections to our criticism of Beatty. He says that our approach "allows the possibility of formulating laws describing any biological phenomenon whatever" and that our view has the consequence that "any interesting contrast between so-called laws and obviously accidental generalizations collapses." We have two replies. We do not regard the first consequence as a criticism. And we deny that our view entails that the distinction collapses.

DesAutels develops his first objection by discussing two propositions you might discover about the organisms that live in an old-growth redwood forest. Suppose you notice that whenever a breach is made in an ant hill, it is the larger soldier ants that emerge from the freshly excavated gouge. And you also see that a particular redwood tree is 115 m. tall. Of course, neither of these propositions is a law; the first is a contingent generalization, the second is not a generalization at all. DesAutels says he is "unsettled by the thought that there might be biological laws about any contingent biological occurrence," but he does not explain why.

It is no part of our view that every contingent *statement* appears verbatim in a *statement* of law. The vocabulary used in a contingent statement may rule this out. It is often maintained that laws cannot refer to places, times, or individuals. So the statement "Harry met Sally at Katz's Delicatessen on January 14, 1989" is not a law, and no generalization that mentions Harry, Sally, etc, will be a law either. But we are not unsettled by the claim that every contingent *event* or *state of affairs* can be described as the product of initial and boundary conditions and laws. These laws, we hasten to add, may be probabilistic. In any event, our criticism of Beatty's argument does not commit us to the claim that every particular occurrence can be described in this way. The point is that Beatty addressed (C), but neglected to consider (*).

DesAutels' second objection rests of a confusion between the two propositions (C) and (*). He summarizes his argument by saying: "if we can formulate any obviously accidental generalization as a law, then no interesting or meaningful distinction between laws and obviously accidental generalizations obtains." You can't *formulate* an accidental generalization as a law; accidental generalizations aren't laws. What you can do is subsume the accidental generalization (C) in another statement that is not accidental at all, namely (*), though note the point about vocabulary we made in the previous paragraph. (C) doesn't cease to be contingent just because it occurs in the consequent of the noncontingent (*). Our argument presupposes the distinction between laws and accidental generalizations; it does not undercut that distinction.

References

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