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Discussion

Reply to Bence Nanay’s ‘Natural selection and the limited nature of environmental resources’

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Nanay’s (2010) response offers an insightful restatement of his original argument (Nanay, 2005). Towards the end of his response, Nanay provides the following schema (substituting for the place-holders P, Q, R, and S).

1. Premise (1)

Nanay and I agree that the following counterfactual is false: (1*) x’s having trait A (rather than B) depends counterfactually on x’s mother surviving to reproductive age and having A.

2. Premise (2)

The intended conclusion is that x’s having trait A depends counterfactually on selection against B-organisms via the death of x’s mother. Nanay (2010) insists that (1) is true, despite my concerns, and he seeks to avoid the ‘mismatch’ problem by explicitly adding to the antecedent of the second premise the fact that x’s mother has A, which yields (2).

I still believe that (1) is false, and I have doubts about the truth of (2). Let me take these in turn.

1. Premise (1)

Nanay and I agree that the following counterfactual is false: (1*) x’s having trait A depends counterfactually on the survival of x’s mother. We also agree that the falsity of (1*) is consistent with the truth of (1). My claim is not that x’s having A does not depend on the conjunction because it does not depend on one of its conjuncts (the mother’s survival). Instead, my argument is that premise (1) violates a plausible constraint on counterfactuals, the antecedent of which is a contrast.

When a contrast (say, A rather than B) depends counterfactually on some condition C (whether conjunctive or not), then the contrast is reversed when C fails to obtain. If Johnny’s getting (rather than not getting) the job depends counterfactually on him doing well in the job interview (C), then we want to assert that if he were to do badly in the interview, he would not get the job.

Premise (1) does not always satisfy this constraint. Suppose that the conjunctive consequent of (1) does not obtain because x’s mother did not survive. If she did not survive, x would not exist and, hence, x would not have trait A instead of B. (This is why x’s having A may seem to depend counterfactually on x’s mother having A and her survival in the first place.) But if x would not exist, it would not have trait B instead of A either. In other words, premise (1) allows for instances in which the falsity of C (here a conjunction) does not involve a reversal of the contrast. This is what the mother’s death is intended to show. And I cannot think of a good reason for exempting the present contrast from this constraint.

As already mentioned, (1) may be defended by appealing to the fact that x would not have trait A if x’s mother died. This argument seems plausible at first blush. I submit, however, that it seems plausible only because in so reasoning we inadvertently understand x’s having A’ in the sense of x’s having A rather than lacking A (compare ‘x wouldn’t have A if x’s mother died’), and the latter contrast does depend counterfactually on the conjunctive consequent of (1).

2. Premise (2)

Suppose there was no selection against B-organisms and, consequently, x’s uncles survived. Then x’s mother may die prematurely, but she would still have trait A. There is no causal link between the uncles’ survival and the mother’s traits. Therefore, the following counterfactual is false: (2*) x’s mother having A depends counterfactually on selection against B-organisms (via the death of x’s uncles).

The falsity of (2*) does not imply the falsity of (2). Nevertheless, it undermines (2) in a more subtle way. Consider the following two scenarios involving two light switches.

Scenario 1. Switch 1 (C) turns on both lights A and B, whereas switch 2 turns on light B only. In this scenario, A&B depends counterfactually on C, even though B does not (since B could also be turned on by flicking switch 2).

Scenario 2. Switch 1 (C) controls only light A and switch 2 only light B (and there are no other switches for A or B). Again, B does
not depend counterfactually on C. Still, if switch 1 (C) was not flicked on, the conjunction $A \& B$ would not obtain (because $A$ would not be on). On this basis one may be tempted to say that, as in the previous scenario, $A \& B$ depends counterfactually on $C$. But by this reasoning any arbitrary item (for example, causally unrelated to $C$) could be conjoined to $A$ and the resulting conjunction said to depend counterfactually on $C$. However, such moves are known to be illegitimate (see Lewis, 1973, pp. 31–32 on the fallacy of “strengthening the antecedent”).

So, we need to ask whether premise (2) conforms to the pattern of scenario 1 or to that of scenario 2. It seems we can say this much: in the clearly legitimate scenario 1, $C$ (that is, switch 1) is a common cause of both conjuncts; whereas in (2), $C$ (that is, selection against $B$-organisms) is not a common cause. In short, premise (2) does not exemplify the pattern of scenario 1. Its conjunctive antecedent is not of the sort that clearly exhibits counterfactual dependence. As things stand, (2) resembles the illegitimate scenario 2 more closely than it does scenario 1.

References

Nanay, B. (2010). Natural selection and the limited nature of environmental resources. Studies in History and Philosophy of Biological and Biomedical Sciences.