

## An Outline of the Fodor & Piattelli-Palmarini Argument against Natural Selection

Norbert Hornstein

Jerry Fodor and Massimo Piattelli-Palmarini have recently argued that the theory of natural selection (NS) fails to explain how evolution occurs (Fodor & Piattelli-Palmarini 2010; F&PP). Their argument is not with the fact of evolution but with the common claim that NS provides a causal mechanism for this fact. Their claim has been greeted with considerable skepticism, if not outright hostility.<sup>1</sup> Despite the rhetorical heat of much of the discussion, I do not believe that critics have generally engaged the argument that F&PP have actually presented. It is clear that the validity of F&PP's argument is of interest to biolinguists. Indeed, there has been much discussion of late concerning the evolution of the faculty of language and what this implies for the structure of Universal Grammar.

To facilitate evaluation of F&PP's proposal, the following attempts to sketch a reconstruction of their argument that, to my knowledge, has not been considered.

1. 'Select' is not 'select for', the latter being intensional.<sup>2</sup>
2. The 'free-rider problem' shows that NS *per se* does not have the theoretical resources to distinguish between 'select' and 'select for'.
3. If not, then how can NS causally explain evolutionary change?
4. There are two ways of circumventing the free-rider problem.<sup>3</sup>
  - a. Attribute mental powers to NS, i.e. NS as Mother Nature, thereby endowing NS with inherent intensionality and so the wherewithal to distinguish 'select' from 'select for'.
  - b. Find within NS a law supporting counterfactuals, i.e. laws of natural selection/evolution, which also would suffice to provide the requisite intensionality.

---

Thanks to Jerry Fodor, Massimo Piattelli-Palmarini, and Paul Pietroski for comments and discussion.

<sup>1</sup> See, for example Block & Kitcher (2010), Futuyma (2010), and Pigliucci (2010).

<sup>2</sup> Intensional contexts are ones in which extensionally identical expressions are not freely interchangeable. Thus, if John intends to kiss Mary and Mary is the Queen of the Night, we cannot conclude that John intends to kiss the Queen of the Night.

<sup>3</sup> F&PP develop this argument in chapter 6. The classic locus of the problem is Gould & Lewontin (1979).



5. The first option is clearly nuts, so NS accounts must be presupposing (4b).
6. But NS contains no laws of evolution — a fact that seems to be widely recognized!
7. So, NS can't do what it purports to do: give a causal *theory* that explains the facts of evolution.
8. Importantly, NS fails *not* because causal accounts cannot be given for *individual* cases of evolution. They can be and routinely are. Rather, the accounts are individual causal scenarios, natural histories specific to the case at hand, and there is nothing in common across the mechanisms invoked by these individual accounts besides the fact that they end with winners and losers. This is, in fact, often acknowledged. The only relevant question then is whether NS might contain laws of NS/evolution? F&PP argue that NS does not contain within itself such laws and that, given the main lines of the theory, it is very unlikely that any could be developed.
9. Interestingly, this gap(/flaw) in NS is now often remarked in the biology literature. F&PP sample some work of this sort in the book. The research they review tends to have a common form in that it explores a variety of structural constraints that, were they operative, would circumscribe the possible choices NS faces. However, importantly, the mechanisms proposed are adventitious to NS; they can be added to it but do not follow from it.
10. If these kinds of proposals succeed, then they could be combined with NS to provide a causal theory of evolution. However, this would require giving up the claim that NS explains evolution. Rather, at most, *NS + structural theories* together explain evolutionary change.<sup>4</sup>
11. But, were such accounts to develop, the explanatory weight of the combined 'NS + structural theory' account would be carried by the added structural constraints — not NS. In other words, all that is missing from NS is that part that can give it causal heft and, though this could be added to NS, NS itself does not contain the resources to develop such a theory on its own. Critics might then conclude as follows: This means that NS can give causal accounts when supplemented in the ways indicated. However, this is quite tendentious. It is like saying Newton's theory suffices to account for electro-magnetic effects for, after all, Newton's laws can be added to Maxwell's to give an account of electro-magnetic phenomena!
12. F&PP make one additional point of interest to linguists. Their review and conclusions concerning NS are not really surprising, for NS replays the history of empiricist psychology — though strictly speaking, the latter was

---

<sup>4</sup> Observe that the supposition that selection is simply a function of 'external' environmental factors lies behind the standard claim that NS (and NS alone) explains why evolutionary changes are generally adaptive. Adding structural 'internal' constraints to the selective mix weakens the force of this explanation. To the degree that the internal structural factors constrain the domain of selection — to that degree, the classical explanation for the adaptive fit between organism and environment fails.

less nutty than NS, for empiricists had a way of distinguishing intensional from non-intensional as minds are just the sorts of things that are inherently intensional. In other words, though attributing mental intensional powers to NS (i.e. Mother Nature) is silly, attributing such powers to humans is not.

This is the argument. To be honest, it strikes me as pretty powerful if correct, and it does indeed look very similar to early debates between rationalist and empiricist approaches to cognition. However, my present intention has not been to defend the argument, but to lay it out given that much of the criticism against F&PP's book seems to have misconstrued what they were saying.

### References

- Fodor, Jerry A. & Massimo Piattelli-Palmarini. 2010. *What Darwin Got Wrong*. New York: Farrar, Straus & Giroux.
- Pigliucci, Massimo. 2010. A misguided attack on evolution. *Nature* 464, 353–354.
- Block, Ned & Philip Kitcher. 2010. Misunderstanding Darwin: Natural selection's secular critics get it wrong. *Boston Review of Books* 35(2), March/April 2010. [[http://bostonreview.net/BR35.2/block\\_kitcher.php](http://bostonreview.net/BR35.2/block_kitcher.php)]
- Futuyma, Douglas J. 2010. Two critics without a clue. *Science* 328, 692–693.
- Gould, Stephen J. & Richard C. Lewontin. 1979. The spandrels of San Marco and the Panglossian paradigm: A critique of the adaptationist program. *Proceedings of the Royal Society of London, Series B: Biological Sciences* 205, 581–598.

Norbert Hornstein  
University of Maryland  
Department of Linguistics  
1401 Marie Mount Hall  
College Park, MD 20742  
USA  
[nhornste@umd.edu](mailto:nhornste@umd.edu)