Fun and Games in Fantasyland

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As often before, Jerry Fodor makes my life easier, this time by (1) figuring out a persuasive *reductio ad absurdum* argument for my views, (2) absolving me of any suspicion that I'm creating a straw man by resolutely embracing the absurd conclusion, and (3) providing along the way some vivid lessons in How Not to Do Philosophy. The only work left for me to do is (a) draw attention to these useful pedagogical aids, (b) point out the absurdity of Jerry's expressed position and (c) remind you that I told you so.

The *reductio*, nicely indented and numbered, appears on p.11 and has the startling conclusion:

> Contrary to Darwinism, the theory of natural selection can't explain the distribution of phenotypic traits in biological populations.

Now this really is absurd. Silly absurd. Preposterous. It is conclusions like this, built upon such comically slender stilts, that give philosophy a bad name among many scientists. Fodor's argument really does follow from his premises, though, so far as I can see, so I am prepared to treat it as a classic *reductio*. A useful *reductio*, as we all learned in our first logic course, has just one bad premise that eventually sticks out like a sore thumb, but in this case we have an embarrassment of riches: four premises, all of them false. I will leave as an exercise for the reader the task of seeing if any presentable variation of Fodor's argument can be constructed in which some or all of these are replaced by truths.

Fodor has great fun putting his ducks in a row, airily helping himself to his assumptions without extended argument, ignoring the complications that I and others have raised for them, complications that can apparently be dismissed with a jocular flourish, usually in a footnote. (Hey, no sense wasting valuable space in the body of the text on *these* silly considerations!) Here they are:

(I) 'metaphysical realism' (fn 2).

Just what is this doctrine? Fodor does not provide a gloss, but he apparently means it to dismiss my brand of realism—as defended in, e.g. 'Real Patterns', 1991—as not worthy of discussion.

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(II) With regard to any intentional attribution, an animal/agent either has it, or doesn't have it.

Isn't this just the Law of the Excluded Middle? No. Fodor assumes that there is no middle ground, no room for any sort of gradualism, between, say, the considered goal of an adult philosopher and the utterly intentionless behavior of, say, a *paramecium*. We are asked to assume that a 'frog's intention to catch a fly' is a full-bore intention, with the specific propositional component, *to catch a fly* (which is distinct from the intention *to catch a dark moving-through-the-air-thing*, etc., etc.) A frog may have such intentions, Fodor presumes, and if you don't agree, he graciously invites you to go up a notch or two in the great chain of being and choose an animal that does have such specific intentions by your lights. But does—could—the fly have the complementary intention *to avoid capture by that frog*? Maybe, and maybe not, but it's got to be Yes or No in the end. For Fodor, an animal either has an intention with a proper propositional object or it doesn't. This is an extra premise, and not strictly implied (I gather) by Fodor's 'metaphysical realism', but the two views, bristling with absolutism, go together handsomely. This is just pre-Darwinian essentialism brandished without defense. Thus an animal is either a mammal or it isn't. Period. No iffy, hemi- semi- demi- cases for Fodor. To see the doctrine in another, but related, context, note its application to—sigh—Twin Earth: when Tom, an Earthian boy, is whisked to Twin Earth, his word 'water' initially means H_2O, and roughly everything he says using the word is false, but eventually, presumably, it comes to mean XYZ, and he is now speaking Twin-English. When exactly? Aha. That is a deep metaphysical fact that we may never know (but don't confuse metaphysics with epistemology). Does the cuckoo chick *intend* to kill the unhatched nestmates that it so strenuously and guidedly rolls out of the nest? In other words, does *mens rea* properly apply? Many would see this as a joke, but it has to be a serious issue for Fodor, with a definite answer. I have called this combo of (I) and (II) *hysterical realism* in the past. Now you know why.

And note that Fodor needs this *license to dichotomize* for his argument. He loves to construct fish-or-cut-bait dilemmas in his arguments—look at steps (iii) and (iv), the latest examples in a long line of such arguments going back at least to *The Language of Thought* (1975). You simply can't run such arguments without the hard edges of essentialism at your disposal, and when things look ominously fuzzy in the middle ground, threatening to mess up the nice forking path Fodor is preparing, his typical tactic is make a little joke and simply insist on it. (Packing this move off into a footnote discourages people from demanding a review.)

(III) There is no such thing as design without a mindful, intentional designer (fn 12).

Here Fodor sounds like Christoph Schönborn, Catholic archbishop of Vienna, the chap duped by the Intelligent Design folks. He said, notoriously, in a *New York Times* op/ed piece entitled 'Finding Design in Nature' (July 7, 2005):

> The Catholic Church, while leaving to science many details about the history of life on earth, proclaims that by the light of reason the human intellect can readily and clearly discern purpose and design in the natural world, including the world of living things.
> Evolution in the sense of common ancestry might be true, but evolution in the neo-Darwinian sense—an unguided, unplanned process of random variation and natural selection—is not. Any system of thought that denies or seeks to explain away the overwhelming evidence for design in biology is ideology, not science.

Of course there is brilliant 'design' to be found in every corner of the evolved world, at every scale—and if, with Fodor, you insist that this isn't really *design* at all (not being the handiwork of an agent with a (metaphysically real, non-metaphorical, full-bore) mind, you risk turning a defnitional quibble (is it 'design' or design?) into something that distracts your attention from the undeniable brilliance of the results of the evolutionary process. Fodor never comes to grips with the truth in Orgel's Second Rule: Evolution is cleverer than you are. He simply dismisses it as silly metaphor or nonsense. And look at the result: Fodor ends up agreeing with the archbishop: evolution happens, but natural selection isn't how it works its magic.

> (IV) All causal explanations are 'covering law' explanations, involving 'nomological generalizations') (fn 14).

This antique caricature of scientific practice, harking back to Hempel, is insisted upon by Fodor, and it gives him another needed dichotomy: 'From the viewpoint of the philosopher of science, perhaps the bottom line of all this is the importance of keeping clear the difference between historical explanations and covering law explanations' (p. 22).

I have said that all four of these premises are false. The details can be found in my work over the last thirty-five years.[1] I don't intend to review all that here, but I do want to thank Fodor for providing some motivation to philosophers to check it out. My 'radical' positions have always been a hard sell in some deeply conservative quarters of philosophy, and have been much caricatured. I find some

[1] Undermining premise (1) see Dennett, 1971 and, drawing together many earlier themes, 1991. Undermining premise (2) see Dennett, 1978 (especially the Introduction), 1987 (especially chapters 4, 5, 7, and 8), 1995, and 1996. Undermining premise (3) see Dennett, 1995, and more recently 2006a, 2007. Undermining premise (4) see Dennett, 1995, with its discussions, *passim*, of how and why biological explanations are causal, and especially chapter 14, sections 2 and 3 ('Two Black Boxes'). There are numerous other passages in my work that bear on the untenability of Fodor's assumptions here, but these are the key entries.

young philosophers have only second-hand acquaintance with the cases I make and I do hope they will be as persuaded—as I am!—by Fodor's argument: either you go Dennett's way, or you must conclude that evolutionary biology is one big mistake. I hope that's an offer you can't refuse. Try it. You'll like it.

In place of a general review of the many places where Fodor goes wrong, I will take advantage of just one of Fodor's paragraphs—about Jack and Jill—to illustrate where a main blindspot in his thinking lies:

> But to suppose that the processes of evolution can see that the actual outcome of Jack's action was incidental to its intentional object is precisely to beg the questions that are now at issue. We can understand what went wrong with Jack because we have the concept of 'the maxim of an act', and it's clear to us that the maxim of Jack's act was something like 'when thirsty, fetch water' and nothing at all like 'when thirsty, fall down, and break your crown'. But, recall that (putting aside the loose talk about what evolution can 'see') the adaptationist's aim was to explain how the fitness of an intentional state varies *as a function of its content*. So, if he's to avoid circularity, he can't take for granted either that intentional states with distinct effects on fitness are *ipso facto* distinct in content or that states that are distinct in content are *ipso facto* distinct in their effects on fitness. Jack's crown got broken and Jill's didn't. It remains *entirely possible* that they both acted with the very same end in view (pp. 12)

Fodor insists on 'putting aside the loose talk about what evolution can "see"', and this blinds him to the fact—really quite obvious and familiar to anyone looking at much work on evolution—that evolution has an uncanny capacity, *when given a large population of subtly varying cases*, to winkle out the relevant difference and select for it. Natural selection can't see the difference between Jack and Jill on one occasion, but given a thousand Jacks and a thousand Jills, fetching their water here and there, climbing hills for sundry reasons, natural selection *can* 'see' the differences that make a difference, and reward (mainly) those that make that good moves with more progeny, on average. Fodor's quaint view of causation leads him to ignore the power of effects that depend on probability—he views such phenomena as not properly causal at all. Let it be, as Fodor says, *entirely possible* in any particular case that Jack and Jill, with identical intentions, nevertheless have different fates. It is *not* entirely possible that over the long run, in largish populations, those equipped with the apt intentions for the circumstances don't rise like cream to the top. (Well, it is *logically* possible, but that simply doesn't matter, in spite of all the huffing and puffing about 'truthmakers'.) The power of natural selection to distinguish and promote—is *that* loose talk?—truly subtle differences in strategy, and hence *intention* in one important sense, is awesome.

But not *all logically distinguishable* strategies. Both in the descriptions of actual organisms' behavioral patterns and in the mathematical models, a certain amount

of loose talk is licensed. Thus Dawkins notes, discussing evolutionarily stable strategies:

> A 'strategy' is a pre-programmed behavioural policy. An example of a strategy is: 'Attack opponent; if he flees pursue him; if he retaliates run away.' It is important to realize that we are not thinking of the strategy as being consciously worked out by the individual. Remember that we are picturing the animal as a robot survival machine with a pre-programmed computer controlling the muscles. To write the strategy out as a set of simple instructions in English is just a convenient way for us to think about it. By some unspecified mechanism, the animal behaves as if he were following these instructions (Dawkins, 1989, p. 69).

Compare the strategy articulated by Dawkins to the following: 'Attack opponent *only if the temperature is between the freezing and boiling points of water*; if he flees pursue him *no more than seven miles*; if he retaliates *without first sneezing* run away.' Now this is manifestly a different strategy—it differs in *content*, readily distinguishable by the clever philosopher but not, Fodor insists, by natural selection. So how dare the adaptationist play so fast and loose, attributing the simpler strategy to the organism? Because, of course, it works. It's good science. And in fact we can *imagine* an environment that would distinguish the second strategy from the first, and reward one of them and not the other. Such environments don't occur on this Earth, but there is a Twin Earth somewhere that would be just fine for extinguishing one and not the other. And how shall we decide, in a 'principled' way, when one strategy leaves off and another one begins? Well, we could look for traces of extra machinery, or adjusted machinery, inside the organisms that would make sense under just such a hypothesis, but this wouldn't *settle* the issue—there will always be more strategies that can be conjured up consistent with the machinery—and in general, we won't bother. Why, for instance, didn't Dawkins couch his articulation of the strategy 'Attack opponent; if he *seems to* flee, pursue him; if he *seems to* retaliate, run away'? This, too, is a discernibly different content from the content Dawkins listed, and we could add others by the score: 'Attack opponent; if he flees, make a display of pursuing him but call it off after *n* steps; if he retaliates *or prepares to retaliate*, run away.' Why didn't Dawkins get more precise about the strategies in play? Because life is short. There is no need to declare, or attempt to discover, such facts of the matter, any more than we have to be able to identify the Prime Mammal (Dennett, 2003, pp. 127ff). Recall my discussion in *The Intentional Stance*, pp. 301ff, about what the frog's eye *really* tells the frog's brain. As circumstances change, the content changes, but not in a way that permits us to make all the fine distinctions we can imagine.

It doesn't matter. Content isn't that kind of feature—even in us language users! I believe that $E=mc^2$. Do you? Do we believe exactly the *same proposition*? Which proposition would that be? We both believe that the formula '$E=mc^2$' expresses a truth, but beyond that, we may have wildly different abilities to use the formula. So even when we can tie content to a formula (in a public language or a language of

thought of some sort) the attachment is a long leash (Dennett, 1969,… 2006). Since understanding comes in degrees, so does content. The myth of determinate content of belief that cleaves the set of all possible worlds neatly in two no more applies to us than to frogs.

I will close with two relatively minor points of criticism, and then a major one:

'What wins and loses competitions are the *creatures that have the traits*' (p. 10). No, this is one of the standard misconceptions found among people who think they understand evolutionary theory and don't. (It is often remarked that in spite of the fact that the basic idea of natural selection is simple and readily conveyed, it is—perhaps for that very reason—often bizarrely *misunderstood* by incautious extrapolators.) What determines the trends in gene pools is only partly a result of competitions between individual animals (e.g. the competition between A and B for the opportunity to mate with C, or the competition between A and B for that useful morsel of food over there) but is much better seen as competition between alleles for representation in the gene pool. To take a standard elementary example, the explanation of heterozygote superiority in the case of sickle cell anemia is not a matter of people competing with each other in a great malaria tournament.

'The order of metaphysical dependence is that keys solve the problem of finding something to open locks, not that locks solve the problem of finding something to be opened by keys' (p. 13). Really? First there were locks, and then along came keys? Shades of *which came first, the chicken or the egg!* Does Fodor really want to stick himself with the knotty problem of which came first, the key or the lock? Couldn't the ideas of keys and locks have, um, *co-evolved* (in the mind of the Prime Locksmith, presumably)? Once again, Fodor's premise (II) comes back to haunt him: by his lights, you either have the concept of a key (or a lock) or you don't. Period. In principle, one of them has to trigger the other, or something like that. In fact, according to Fodor, we are all born with both concepts, *lock* and *key*, their content fixed for all time in the language of thought in which we store them, awaiting arousal when circumstances provoke it. Sheer fantasy.

As I said at the outset, Fodor's paper is a gold mine of Cautionary Tales with which to scare the very dickens out of the young. Look what happens, boys and girls, when you try to shoehorn all your arguments into the form of constructive dilemmas, as if you were doing proofs in geometry or number theory, where hard edges abound. Look what happens, boys and girls, when you can't be bothered to look at the actual science and instead make up all your examples. You can have a jolly time making fun of the words you put in your imaginary explainers' mouths, but at the end of the day, you have to return to the real world, empty handed.

I cannot forebear noting, on a rather more serious note, that such ostentatiously unresearched ridicule as Fodor heaps on Darwinians here is both very rude and very risky to one's reputation. (Remember Mary Midgley's notoriously ignorant and arrogant review of *The Selfish Gene*? Fodor is vying to supplant her as World

Champion in the Philosophers' Self-inflicted Wound Competition.) Before other philosophers countenance it they might want to bear in mind that the reaction of most biologists to this sort of performance is apt to be—at best: 'Well, we needn't bother paying any attention to him. He's just *one of those philosophers* playing games with words'. It may be fun, but it contributes to the disrespect that many non-philosophers have for our so-called discipline.

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