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Dennett Denied:

A Critique of Dennett's Evolutionary Account of Intentionality[1]

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> [O]ur intentionality is derived from the intentionality of our "selfish" genes! … But then who or what does the designing? Mother Nature, of course, or more literally, the long, slow process of evolution by natural selection.[2]
> There isn't any Mother Nature, so it can't be that we are her children or her artifacts, or that our intentionality derives from hers.[3]

1. Introduction.

Naturalism claims that all genuine properties and relations are in some way reducible to the categories that are studied, or that could, in principle, be studied, by the natural sciences. The main objection to naturalism is that it cannot account for the existence and character of the normative, including rational and moral qualities. In the philosophy of mind, even more fundamental than the problem of consciousness is the problem of intentionality. Natural relations obtain between entities all of which exist, they are not about anything (they have no "content"), and they are not goal-directed. Thus when a rock falls from a mountainside into a river, not only the rock, but also the mountainside and river, must exist. And no one would claim that any state of the rock was about anything or had the goal of ending up in the river. But our thoughts are fundamentally different. I can think of sensible Californian gubernatorial candidates and property tax reduction even though no such things exist, and perhaps never will. What is more, I can think various things about these non-existent objects and I can have as a goal the meeting of a sensible Californian gubernatorial candidate or the promotion of property tax reduction far in advance of any relevant action of mine. Prima facie, the intentional relation of thought to its object is not a natural relation. To claim that intentional qualities just are rather odd natural ones would trivialize naturalism. So what the naturalist needs is an explanation of intentional qualities, one which shows that they

are in fact compatible with a naturalistic worldview. In other words, some sort of reduction is needed.

Naturalists have proposed three main styles of reduction. The most extreme, exemplified by Paul Churchland, is *elimination*.[4] Pursuing this line, it is argued that there only appear to be problematic intentional notions because they are the postulates of our internalized but false commonsense theory of the mind, "folk psychology." For Churchland, cognition should be understood as a complex ensemble of vector-to-vector transformations of neural activation patterns in the brain. In these transformations, intentional contents appear to play no role. Elsewhere, I have argued in detail against this proposal.[5] Suffice it to say here that I find the eliminative approach implausible because folk psychology captures critical notions of human rationality that do not survive in the neuroscientific replacement theory. If science is the motivation for elimination, and we prize science for its rationality, we should be wary of an allegedly scientific reduction that undermines rationality.

In fact, even among philosophical naturalists, eliminativism is widely regarded as an implausible view. More popular are two less extreme reductive approaches. A *conservative* approach grants the full reality of intentionality but attempts to identify it with natural characteristics. The type identity theory, which argued that mental states just were brain states, was a theory along these lines. A *reforming* approach argues that our understanding of intentionality contains a certain amount of misconception, but with this removed, we can see how intentionality fits into the fabric of the natural world. Functionalism, which argued that mental states are really the functional roles played by various physical realizing states, is the best examples of this view. Note that both type-identity theory and functionalism are *synchronic* theories of the mind. That is, they attempt to understand mental characteristics in terms of the current physical and causal state of an individual, rather than by an appeal to the causal history of the individual or its species (a *diachronic* approach).

Unfortunately, it is well known that both type-identity theory and functionalism have severe difficulties[6], and this motivates the search for an alternative theory. Most fundamentally, both are committed to physicalism, the view that we should try to understand everything from the "physical stance," the explanatory stance of the physical

sciences. However, all one can discern from this stance are blind, impersonal causal transitions, which seem quite incapable of capturing the aboutness and directedness of intentionality. Seeing this difficulty, Daniel Dennett has proposed a promising alternative theory, making two main moves. First, Dennett criticizes physicalism in the philosophy of mind, arguing that it overlooks two other, equally legitimate stances, the "design stance" and the "intentional stance." Understanding how and why these stances work helps explain our commitment to notions that seem problematic for naturalism. Second, in place of the usual synchronic accounts of the mind, Dennett gives a diachronic account, explaining intentionality in terms of the prior causal processes of natural selection. According to Dennett, our intentionality is not *sui generis*, but is built from a more primitive proto-intentionality already present in nature, via a series of "cranes," mechanisms that add new functionality to a system.

In what follows, I will begin with an explication of Dennett's theory (section 2). Then I will develop four main objections to the theory (section 3), and finally I will present a positive case for saying that intentionality is a real, but *non*-naturalistic quality and that the best explanation of this fact is some form of theism or intelligent design (section 4).

2. The Intentional Stance.

According to Dennett, the explanatory approach of physicalism is only one of three possible stances. Physicalists recognize only the *physical stance*, which bases its account of a system's behavior on "its physical constitution…and the physical nature of the impingements on it."[7] However, these gory physical details are often of no interest; perhaps we want to know what a computer program does (e.g. graphing a spreadsheet), but not how it does it. In this case, it is better to adopt the *design stance*: "one ignores the actual (possibly messy) details of the physical constitution of an object, and, on the assumption that it has a certain design, predicts that it will behave *as it is designed to behave*…"[8]. The design stance is surprisingly efficient and successful, so long as there is no hardware malfunction (which can only be explained by dropping back down to the physical stance), or a design flaw.[9] Simple designed objects, however, typically implement the goals of their designers and users, not their own. When we turn to more complex entities, which appear to act for their own reasons, it is helpful to adopt the *intentional stance*: "first you decide to treat the object whose behavior is to be predicted as a rational agent; then

you figure out what beliefs the agent ought to have, given its place in the world and its purpose."[10] Attributions of intentional states to an entity thus depend on norms of rationality which are invisible from the physical stance.

At first sight, this attribution of intentional states is problematic. If intentional states really exist without reservation, it seems Dennett cannot claim to be a materialist without trivializing materialism. If they do not exist, but our intentional talk is a useful fiction, then Dennett is merely wrapping eliminativism in the mantle of instrumentalism. Neither of these interpretations of Dennett is charitable, and he has made it clear over the years that he has something else in mind.

In fact, Dennett thinks that there are real patterns in human behavior which are visible from, and only from, the intentional stance. Like Churchland, Dennett is an empiricist who believes that we should accept in our ontology what our successful scientific theories say exist—at least until those theories are superseded. Since the intentional stance is successful and lacks a credible alternative, Dennett is willing to conclude that intentional states exist. However, Dennett does not think beliefs and desires are of the same unproblematic category as *concreta*, like tables and chairs. Following Reichenbach, Dennett distinguishes "*illata*—posited theoretical entities—and *abstracta*—calculation-bound entities or logical constructs."[11] While Churchland thinks of intentional states as the illata of folk psychology, Dennett claims that beliefs and desires are abstracta, on a par with centers of gravity, the Equator, or ideal gases. The abstracta of the intentional stance are not instrumentalist fictions, but unlike concreta, "they figure in explanans incorporating certain idealizations made in the context of explanatory practice."[12] The idealizations capture norms of rationality which may not obtain, due, for example, to an individual's fatigue, self-deception or brain malfunction. Even when they do obtain, these norms may not succeed in uniquely identifying an agent's intentional states. Beliefs and desires are attributed as part of a pattern of mental states which provides an overall interpretation of an agent's behavior. Given the aim of optimizing rationality, there may be times when a number of different interpretations fit the facts, so that it is indeterminate whether the agent really has a particular belief or desire.

> We can be sure in advance that no intentional interpretation will work to perfection, and it may be that two rival schemes are about equally good, and better than any others that we can devise.[13]

This does not, however, threaten the reality of intentional states. Rather it shows that they cannot simply be identified with concrete material items in the way physicalists hope. As Viger argues, Dennett can be read as a "small 'r' realist," who "questions the intuition that intentional states and properties are real only if they can be identified with something physical by providing examples of abstracta for which we have no comparable intuition."[14] However, Dennett maintains that the reason for thinking intentional states exist is not that they are abstracta (some abstracta may be fictions), but that the intentional stance is predictively successful.

As a result, Dennett thinks that intentional states are no more problematic than other theoretical entities, and feels no pressure to provide a synchronic reduction of intentional states to something else. However, Dennett realizes that this provides no explanation of the *origin* of intentionality. For that, some kind of diachronic account is required, and Dennett proposes that human intentionality traces to natural selection.[15]

Dennett works up to his evolutionary account by way of an analogy with an artifact, a "2-bitser" vending machine designed to accept only U.S. quarters. According to Dennett, this is a classic case of derived intentionality. When we ascribe the intentional state of accepting a quarter to the 2-bitser, we do not mean that it originated such a state; all we mean is that the machine fulfills the human intention of accepting quarters. Just as speakers of French can use "J'ai grand soif" to mean "I am very thirsty,"[16] so human designers can use some physical state of the machine to mean "accepting a quarter." Dennett then points out that the 2-bitser could be appropriated by Panamanians whose intention is to use the machine to accept (physically similar) quarter-balboas. This illustrates the obvious fact that derived intentionality is not a constant, since the same physical structure can be used to fulfill different intentions. Beyond that, there may be difficult cases: two or more parties may simultaneously have conflicting intentions for an artifact (a paper knife normally used to open letters is appropriated as a murder weapon); no-one may have any continuing intention for an artifact (the forlorn 2-bitser is consigned to a land-fill, even though its coin-recognition unit works). These are difficult cases for what Dennett calls "artifact hermeneutics," our reading of an artifact's function, because either the meaning has to be relativized to avoid inconsistency, or it is no longer clearly defined.

Dennett realizes that the 2-bitser is too simple to be comparable to a human being. So he moves a little closer to home by considering a robot survival machine, designed to keep its hibernating human occupant alive. He imagines that the robot has sensory systems, the ability to

"anticipate" danger, to "find" energy, and to "cooperate" or "compete" with other, similar robots. Since the robot may encounter situations unforeseen by its designer, it must "be capable of deriving its own subsidiary goals from its assessment of its current state and the import of that state for its ultimate goal." As a result, the "robot may embark on actions antithetical to [the human's] purposes…."[17] The example is intended to force a choice. If we say that derived intentionality must conform to the intentions of an artifact's designer, then its novel behaviors have no intentionality at all (there is only the "as if" intentionality of simulation). On the other hand, if, like Dennett, one thinks it is arbitrary to deny intentionality to these novel behaviors, the example shows that derived intentionality can diverge from the designer's intentions.

Having thus prepared us, Dennett drops his bombshell. Following Richard Dawkins,[18] Dennett suggests that we are simply survival machines, designed to preserve our genes. If this is correct, then if we say that the robot survival machine has mere "as if" intentionality, we will have to say the same thing about ourselves. This is intolerable (and Dennett has agreed that we really do have intentionality), so apparently we must conclude that real intentionality can be derived, and that derived intentionality can transcend the intentions of the designer.[19]

But who is the designer in the case of human beings? Dennett admits that genes are too stupid to design anything. In fact,

> They do not do designing themselves; they are merely the beneficiaries of the design process. But then who or what does the designing? Mother Nature, of course, or more literally, the long, slow process of evolution by natural selection.[20]

Dennett's idea is that natural selection mirrors the mind in that it seemingly makes choices and improves its products by weeding out failures, yet it does so *without any representations or foresight*. Further, since natural selection may reuse one structure for a different function, there will sometimes be indeterminacy about what a structure is for, just as in the case of the 2-bitser. This potential for indeterminacy is inherited by our intentional states.[21] Despite these limitations, Mother Nature is mind-like enough that it is profitable to apply the intentional stance. To some degree, this is a practical necessity, because of the limitations of physical stance accounts of biological function. "Pending completion of our mechanical knowledge, we need the intentional characterization of biology to keep track of what we are trying to explain..."[22] More than that, without the intentional stance, "We would miss the pattern that was there, the pattern that

permits prediction and counterfactuals."[23] Dennett agrees with Millikan[24] that the intentional stance not only helps us to identify biological function, it also determines the content of folk-psychological attributions, for "it is only relative to…design 'choices' or evolution-'endorsed' purposes…that we can identify behaviors, actions, perceptions, beliefs, or any other categories of folk psychology."[25]

In summary, according to Dennett, human intentionality is real (the intentional stance enables us to detect "real patterns"), but it is not original, for "we must recognize that it is derived from the intentionality of natural selection, which is just as real."[26] Since our intentionality is derived, we do not have some privileged authorial knowledge of what we really mean, and sometimes, as in the cases of the 2-bitser and robot survival machine, there may be no clear fact of the matter.

3. Dennett Denied.

There is much to admire in Dennett's account and with which I have no quarrel. I agree with him that there are distinct explanatory stances, and with the further consequence that much of physicalist philosophy of mind has been misdirected, because it has either denied the facts about intentionality or distorted them by forced assimilation to an alien physical stance perspective. What is more, I even agree that human intentionality is derived, and that it is sometimes afflicted by indeterminacy, although for quite different reasons than Dennett's.[27] Nonetheless, there are several powerful reasons for rejecting Dennett's overall account, and especially his claim that human intentionality derives from natural selection.

> **Objection 1: The Real Patterns Problem.** Dennett claims that the real patterns in human behavior visible from the intentional stance show that humans have intentional states. He also agrees that there are real patterns in the function of biological structures which are visible from the intentional stance. So why does he not conclude that these structures are the product of an intelligent designer with intentional states?

While Dennett thinks of intentional states as abstracta, he thinks they are real because they really explain and predict the patterns of human action. He also thinks that the intentional stance is needed to see biological structures as artifacts, which supports the adaptionist program of reverse engineering. Yet he does not conclude, by parity of reasoning, that these biological structures are best explained by an agent with intentional states. Why not?

Dennett gives two reasons for rejecting the parallel argument. First, he claims that in the case of natural selection, there is only an "illusion of intelligence," because "evolution may well have tried all the 'stupid moves' in addition to the 'smart moves,' but the stupid moves, being failures, disappeared from view. All we see is the unbroken string of triumphs."[28] The second reason anticipates Dennett's later distinction between skyhooks and cranes.[29] To have intentionality simply appear from nowhere would be a non-explanatory skyhook. But to expect it to appear in full form as the immediate product of some natural process would be "greedy" or "precipice" reductionism.[30] Instead, Dennett's idea is that natural selection has a sort of proto-intentionality without representations—let us call it, in honor of its inventor, "Dennettionality." When natural selection finally produces systems which are able to represent states of affairs, this crane moves Dennettionality closer to the full-bloodied intentionality of folk psychology. Although Dennett says that the intentionality of natural selection is just as "real" as human intentionality, he really seems to recognize several levels of intentionality, where each higher level is supported by the chance emergence of a crane. There are basic *Darwinian creatures*, whose behavioral repertoire is fixed by natural selection. At some point, there appear *Skinnerian creatures*, who can learn new behaviors in their own lifetime by operant conditioning. Next come *Popperian creatures*, who have an internal model of their outer environment, and are thus able to predict the consequences of a behavior without running the risk of actually trying it. Finally, there appear *Gregorian creatures*, whose thought and behavior can be modified and extended by the use of artifacts, such as scissors, or the ultimate "mind-tools," words.[31]

This account is as ingenious as it is implausible. From the fact that natural selection has no representations, what Dennett should conclude is that it does not exhibit intentionality at all. By definition, intentionality may be directed to non-existent states of affairs, as when the infant longs for the arrival of Santa Claus.[32] But nothing can be literally related to a non-existent state of affairs, and so any plausible account of intentionality holds that the infant has a representation whose content is that Santa will arrive. This helps because the infant can literally have a relation to the representation even thought the representation does not relate in turn to a real-world referent. By contrast, natural selection is *never* directed at non-existent states of affairs, but only makes a "choice" after the fact between actually existing alternatives.[33] So natural selection does not exhibit intentionality, and this is why there is no warrant for attributing representations to it. Dennett's apparent response is to insist that there are two levels of intentionality: natural

selection has "reasons" without representations (Dennettionality), while humans are "reason-representers" and "self-representers."[34] But the distinction is desperately confused. First, what we mean by a reason in the case of agents *is* a representation: to have a reason to do *A* is to represent *A* as something to be done. Secondly, and in consequence, our grounds for saying that natural selection has no representations are grounds for saying that it has no reasons and hence not even Dennettionality. I am sure that Fodor (and Granny[35]) will agree that we need intentionality reform: no intentionality without representation![36]

There is something disturbing too about Dennett's reasons for saying that biological function points to intentionality but not to intentional states. If natural selection only exhibits the illusion of foresight, surely the conclusion to draw is that it only exhibits the illusion of intentionality. If so, it is not true that it exhibits even a low-order intentionality or Dennettionality. In that case, Dennett's series of enhancements, from Darwinian to Gregorian creatures cannot even get started. Further, if the reason that we should not infer representations is that natural selection is a blind, mechanistic process, then Dennett lays himself open to the eliminativist, who will argue that the blind, mechanistic process of vector-to-vector transformation of neural activation patterns accounts for cognition without intentional states. Of course, Dennett will say that "the real patterns" of human action are best captured by appeal to intentional states. But now that we have seen that the idea of reasons without representations is incoherent, nothing blocks the parallel argument that the best explanation of the functionality of biological structures is found in the intentional states of a non-human (and arguably non-material) agent.[37] The dilemma Dennett faces is that if he denies agency as an explanation in biology, the eliminativist will push him to deny it in psychology, while if he affirms agency in psychology, the proponent of Intelligent Design will push him to affirm it in biology.

> **Objection 2: The Subjectivity Problem.** Neither Dennett's account of the robot survival machine, nor his account of the transition from Darwinian to Gregorian creatures explains the emergence of agents capable of having personal reasons and subjective experiences.

It is well known that standard physicalist accounts are plagued with an inability to account for the subjectivity of experience and the personal reasons of an agent. Why should we suppose Dennett's account fairs any better? To be sure, Dennett does not claim that Mother

Nature has experiences or personal reasons, but he does offer two pictures of how increments in complexity might lead to systems that possess them.

The first is the account of the robot survival machine, designed so that it can derive its own goals from an assessment of its current state and its final goal. The problem with this proposal could not be more fundamental. Dennett gives no reason to think that the robot is an agent, that is, a coherent unity that is capable of pursuing its own goals. When an agent has a goal, she represents herself as having achieved it in the past or as achieving it in the future. But this ability is not explained by clever engineering, such as self-monitoring via feedback loops. Supposing that this produced a representation, it would simply be an impersonal representation of the system's current state. What is needed to have a self-concept is the concept of an agent extended over time, so that it is one and the same agent who achieved certain goals and who aims to achieve others in the future. But before there can be the concept of an agent, there must first *be* an agent, and before Dennett's robot can have its "own goals" there needs to be something which can have goals. The system may contain states which the system's designers use to represent some goals of their own, but that does not mean the system is the kind of thing that can have its own goals. For as Quassim Cassam argues, "first-person thoughts are only correctly ascribable to persons."[38] Likewise, in order to have subjective experiences, there must be a subject of such experiences. A physical system may be able to detect pain, or events associated with pain, but that is not the same as experiencing oneself as being in pain. This again requires there to be a self-concept, which in turn requires there to be a self or agent. Thus Dennett's account of the robot's self-representation simply assumes agency, without giving an account of how it emerges.

Dennett's second story tracks the transition from Darwinian to Gregorian creatures. He tells us that Skinnerian creatures could learn because they "confronted the environment by generating a variety of actions, which they tried out, one by one, until they found the one that worked."[39] Learning by experience is dangerous since a wrong move may be one's last. Popperian creatures are more advanced because they have "a sort of inner environment—an inner something-or-other that is structured in such a way that the surrogate actions it favors are more often than not the very actions the real world would also bless, if they were actually performed."[40] Without going any further, it is clear that Dennett is assuming that both Skinnerian and Popperian beings have a self-concept. Skinnerian beings learn that some past action of theirs

is a guide to their future actions. If so, then they must think of themselves as agents extended over time. And since they learn from their own experience (from how things seem to them), they must be subjects of experience. Furthermore, what they learn is that some action is the one they should perform, and this implies personal reasons. Likewise, Popperian beings use their inner environment to consider what would happen (and in some cases, what they would experience), if *they* performed certain actions. All of this presupposes the kind of self-representation that only agents possess. Thus Dennett's account of the transition from Darwinian to more complex creatures does nothing to explain the emergence of agents capable of personal reasons and subjective experience because they are already assumed.

> **Objection 3: The Sufficiency Problem.** Dennett appears to equivocate between Minimalist Mother Nature, who is compatible with standard accounts of natural selection, and Hagiographical Mother Nature, who is not. Minimalist Mother Nature does not suffice for intentionality or even a significant enough ingredient to qualify as Dennettionality. Hagiographical Mother Nature does suffice for intentionality, but only because she is endowed with powers of design incompatible with materialism.[41]

Searle points out that the location of intentionality in natural selection is highly unpromising, because "intentional standards are inherently normative," but "There is nothing normative or teleological about Darwinian evolution."[42] At times, Dennett acknowledges this and describes a Minimalist Mother Nature. For example, in commenting on the idea of gradualistic "hill-climbing" in Darwinian evolution, Dennett says, "there cannot be any intelligent…foresight in the design process, but only ultimately stupid opportunistic exploitation of whatever lucky lifting happens your way."[43] This is Dawkins' picture of the blind watchmaker, and it surely excludes anything worth calling intentionality. When a human being selects something, she does it because she thinks it will be best for her, because of its anticipated but currently non-existent good consequences. As we saw under the first objection, the ability to pursue "intentionally inexistent" states of affairs is essential to intentionality, but Minimalist Mother Nature never does this. As Fodor says, Minimalist "Mother Nature never rejects a trait because she can imagine a more desirable alternative, or ever selects for one because she can't. We do."[44] In face of this objection, Dennett must either retreat to a fictionalist or instrumentalist account of Mother Nature's intentionality or admit that Mother Nature's intentionality is *not* as

real as ours, and show how it can be supplemented to get the real thing. If he takes the former option, the eliminativist is ready to force him into instrumentalism about human cognition as well. So what about the latter option?

Some have argued that a primitive form (or element) of intentionality arises naturally because Mother Nature does not merely select organisms or species, but selects *for* certain traits.[45] The idea is that natural selection selects for those traits which actually have survival value, so that the heart is selected for pumping blood and not making a rhythmic noise even though all hearts make such a noise. As a result, "selected for F" is an intensional context since it may be that a structure was selected for F but not for G even though all F's are G's, and even if F and G are coextensive. Consistent with Minimalist Mother Nature, the most plausible account of such intensionality is that the intensionality of "selects for" is inherited from the intensionality of "explains." That a heart pumps blood explains why organisms have a heart, but that a heart makes a rhythmic noise does not. Intuitively, this is because pumping blood is essential to survival but making a noise is a mere by-product of pumping blood, and because, had hearts appeared which pumped blood but made no such noise, they would still have been selected.

Supposing that such an account is correct, it does not get us very far. Consistent with Minimalist Mother Nature, all that "Hearts were selected for pumping blood" means is that those organisms whose hearts pumped blood (well) survived long enough to reproduce while those whose hearts did not pump blood (well) did not. This can be fully understood at the level of ordinary causation, with no recourse to even the beginnings of intentionality. Given two coextensive properties F and G, the fact that F but not G is causally relevant to some state of affairs is consistent with causation being a blind, undirected connection, and for that very reason, causal relevance does not help explain how intentionality might be directed toward F and not to G.[46] This fact is obscured because "selected for" tends to smuggle in an illicit notion of teleology, suggesting that Mother Nature selected hearts *in order that* they pump blood. This, however, is an unjustified attribution of purpose and foresight, incompatible with Minimalist Mother Nature.

Further, Minimalist Mother Nature is hampered because she has no representations. A human being can want a drug even though it is a natural law that anyone in his condition who has the drug will die and he does not want to die. Consequently, in intentional contexts, there is failure of substitution for even nomologically coextensive terms. For that matter, a child might

want four beads and not want the square root of sixteen beads even though it is *logically* necessary that four is identical with the square root of sixteen. By contrast, "selected for" makes no such discriminations, for, as Fodor points out, "contexts of explanation are transparent to the substitution of (e.g., nomologically) necessary equivalents."[47] If it is a law that all and only red toadstools are poisonous in a creature's habitat then (assuming the creature detects them by sight) their being red is just as good an explanation of the creature's avoiding them as their being poisonous.[48] And if a creature's having four stomachs is causally relevant to its survival, so is its having the square root of sixteen stomachs. Clearly, we do not get any significant start on intentionality without representation, so Dennett cannot avoid the need to develop a materialistic account of that.

However, when Dennett wants to convince us that Mother Nature can account for intentionality after all, he falls back on the idea that Mother Nature is an artifactual designer. The concept of design is sufficient for the characteristics of intentionality. A drug may be designed to cure condition C and not cause side-effect E, even though it is a law that anyone with C who takes the drug will develop E. A device may be designed to give four quarters, but not the square root of sixteen quarters, as change for a dollar. Indeed, a Strategic Defense system may be designed to protect against an attack which never occurs, so the notion of design even allows for "intentionally inexistent" states of affairs. The obvious problem is that attributing such powers of design to Mother Nature abandons the lean but respectable Minimalist Mother Nature in favor of the more voluptuous and seductive Hagiographical Mother Nature.

The kind of designing power attributed to Hagiographical Mother Nature presupposes that she has goals and foresight. If hearts are designed *in order to* pump blood, that means that Mother Nature selected them for that reason and consequently that Mother Nature represented pumping blood as an advantage of certain heart designs. If anything is literally designed, then a design must exist as a representation before the product of the design. At this point it becomes obvious that the designer must itself have intentional states, so it is not true that Dennett offers a reduction of human intentionality with representations to some putative non-representational intentionality. If reduction is the goal, "You can't explain intentionality by appealing to the notion of design because the notion of design *presupposes* intentionality."[49] Hagiographical Mother Nature is not a crane for intentionality, but a relocated skyhook. Any reductionist

wanting a materialistic account for human intentionality would want exactly the same account of the intentionality of Hagiographical Mother Nature.

What makes matters worse is that, as a materialist, Dennett must deny that Mother Nature is an agent, since this would be a retreat to "mind-first" explanations antithetical to materialism. But if Mother Nature designs creatures and is not an agent, Dennett is committed both to Mother Nature designing and her not being a designer, since only agents are designers. As Fodor says, "*That just makes no sense*."[50] What is more, the whole point of the theory of natural selection was to argue that nature is *not* designed, but only exhibits the appearance of design. But if there is no design, then there is no Hagiographical Mother Nature: even if the idea of a non-agent designing things were coherent, there is no work for her to do. "[S]o it can't be that we are her children or her artifacts, or that our intentionality derives from hers."[51] The one remaining possibility, that Hagiographical Mother Nature is only a fiction, will be explored under the next objection.

In conclusion, either Dennett offers Minimalist Mother Nature, who is insufficient to account for intentionality, or he offers Hagiographical Mother Nature, to whom is attributed the same kind of intentionality that needs explaining. And what is particularly absurd about the latter move is that only agents have this kind of intentionality, yet, as a materialist, Dennett must deny that Mother Nature is an agent.

> **Objection 4: The Incoherence Problem.** Dennett's account of the intentional stance misses the primary reason it provides for believing in intentionality. The idea that using the stance requires us to think of ourselves as products of a fictional Hagiographical Mother Nature is unnecessary and incoherent.

Dennett agrees with me that "the abstraction problem" provides good evidence for the existence of intentional states. However, I think that Dennett is mistaken to think that this is our primary reason for believing in intentionality. It is not the predictive success of adopting the intentional stance but the fact that humans are able to adopt explanatory stances (physical, design or intentional) that is so telling. The irony is that the answer has been under our noses all the time. To adopt an explanatory stance toward something is to seek to understand its behavior, by showing how it falls under certain kinds of concepts. Even adopting the physical stance requires us to understand a system in terms of its physical constitution and operation, but this is to view it in a certain way and to adopt an intentional attitude (understanding) toward it. Consequently,

only beings who have particular points of view and intentionality can so much as adopt the physical stance, let alone the design and intentional stances. It is absurd to maintain both that the various stances aim at understanding, and then suggest that we need the empirical success of adopting the intentional stance as warrant for believing in intentional states. That we can adopt any of the stances shows that intentionality exists, and, *as a result*, the intentional stance is predictively successful. Jennifer Hornsby is sensitive to this point, noting that Dennett overlooks the possibility that "those who use common-sense psychology to interpret (who 'take the Intentional Stance,'…) coincide with those who can be interpreted using common-sense psychology."[52] If I am right that adopting the intentional (or any other) stance requires intentionality, it is unsurprising that this should be so.

This observation also undercuts Dennett's claim that we need to view ourselves as products of Mother Nature in order to understand our intentionality. The very same intentionality that enables us to adopt the intentional stance toward others allows them to do the same to us. This also explains the obvious fact that folk psychology was successful long before anyone proposed the theory of natural selection or viewed herself as its product. At a deeper level, if Hagiographical Mother Nature only appears to exist (she is at best a useful fiction[53]), then all she could explain is the appearance of intentionality. But in fact, she could not even explain that, for if there is such a thing as the appearance of intentionality, then there must be real intentionality, because "it appears that *p*" defines an intentional context. What needs explaining, and what the fiction of Mother Nature cannot explain, is precisely why there are such things as appearances.

Further, as Hornsby points out, if Mother Nature is fictional, it is worth asking how we construct the fiction.

> Presumably we model her on our (psychological) selves. But then we have to construct a fiction (Mother Nature) in order to tell a story…, yet we have to construct the fiction out of material (common-sense psychology) that could only be available once the fiction had already been constructed and the story told.[54]

Once more the idea of constructing a fiction is thoroughly intentional (since, by definition, fictions consist of intentionally inexistent states of affairs which the author understands and intends to communicate), so if we can construct fictions, and understand that fact about ourselves, we have no need to think of ourselves as products of Mother Nature to understand our intentionality. What is more, if what is fictional about Mother Nature is her intentionality, and

our intentionality derives from hers, then (in the absence of plausible cranes) it follows that our intentionality is fictional. But it is incoherent to claim that fictional intentionality is what enables us to construct a fiction of Mother Nature, since fictional entities do not exist—not even as abstracta. Dotheboys Hall is a fictional school described by Charles Dickens in *Nicholas Nickleby*. I think it is safe to assume that it is not Dotheboys Hall that explains why Dickens wrote a fiction about Dotheboys Hall.

Dennett cannot have it both ways. If the intentional stance shows that intentionality figures in "real patterns," then this cannot be explained by appeal to a fictional entity. Fairy stories about Mother Nature cannot be the explanation of the success of the intentional stance. On the contrary, it is the ability to adopt stances--and to construct fairy stories--which show that intentionality is real, and that is the reason why the intentional stance works.

4. An Alternative to Naturalistic Accounts of the Mind.

Of course, I have not considered every possible naturalistic theory of intentionality. But the repeated pattern of failure does suggest that Brentano may have been correct in arguing that the irreducibility of intentionality is a decisive objection to materialism. And in fact, I think we can see powerful reasons in favor of Brentano's thesis as soon as we consider the real implications of our ideas about design, functions and intentionality. As we saw, at one point, Fodor protests against Dennett that it is hopeless to account for our intentionality by appeal to the design of Mother Nature "because the notion of design *presupposes* intentionality."[55] This comment suggests the following argument, reminiscent of Aquinas' Fifth Way.

(P1) If something has a purpose, then it is designed.

(P2) Intentionality has the purpose of guiding behavior.

So, by (P1) and (P2),

(P3) Intentionality is designed.

But clearly,

(P4) Our intentionality is not designed by us (although it does enable us to convey our own designs).

Thus, by (P3) and (P4),

(P5) Our intentionality is the result of prior design.

But, as Fodor reminds us,

(P6) If something is designed, then it is the product of intentionality.

So, by (P5) and (P6),

(C) Our intentionality is the product of prior intentionality.

The argument naturally leads to the postulation of some agency prior to, and arguably higher in power than, any human agent, although it does not establish that this agency has all the characteristics ascribed to God by theism.

I happen to think that this simple argument is correct, and that the materialist has no compelling response. The materialist may claim that nothing, including intentionality has a purpose. In that case, we do not act for purposes. So she is advancing an eliminative position, and this, as I have argued elsewhere, undermines the rationality of science and any credible account of human's mutual understanding. Or the materialist may say that human purpose is real, but that it can be naturalized. But, although I have not argued for this in detail here, none of the available theories are persuasive.

The remaining possibility for the materialist is to claim that my argument could not possibly be right because it invokes a "skyhook," and because appealing to a higher agency does not explain agency. It will be said that what I have done is no better than postulating Hagiographical Mother Nature, since the problem of explaining human agency has simply been relocated to the problem of explaining some higher agency. Indeed, this is why Dennett thinks that "Mind-First" explanations are hopeless and non-explanatory.[56] Likewise, Georges Rey claims that "Any ultimate explanation of mental phenomena will have to be in non-mental terms, else it won't be an *explanation* of it."[57]

In response, I would first point out that not all explanation need be either ultimate or reductive. We can give a proximate explanation of the motion of billiard ball B by appeal to the prior motion of billiard ball A even though this does not reduce motion to anything else. Likewise, if intentionality is real and does not reduce to anything else, we can still offer a proximate explanation of the origin of human intentionality in terms of some prior intentionality.[58] Indeed we should, because one of the many things Dennett *is* right about it is that we do not have "original intentionality."[59] This is surely highly implausible given our contingency. Not only our material states but also our intentional ones come into existence although previously they did not exist, so they certainly cannot be self-explanatory. Nor are they explained as simply the effects of current physical processes in the brain, since blind

materialistic causes are insufficient to account for the teleology and foresight in the effects.[60] So if our intentionality is derivative, Haugeland is right to ask where this leads.

> Derivative intentionality, like an image in a photocopy, must derive eventually from something that is not similarly derivative; that is, at least some intentionality must be original (non-derivative). And clearly, then, this original intentionality is the real metaphysical problem; for the possibility of delegating content, once there is some to delegate, is surely less puzzling than how there can be any in the first place.[61]

The materialist assumes that this search for ultimate explanation must lead to a reduction of the intentional to the non-intentional. But my second point is that even a reductionist is wrong to exclude the possibility that intentionality is irreducible. For if explanation is ever to come to an end, it *cannot* be that every property is explained only by reducing it to something else. Indeed the goal of reduction is to identify some basic set of properties from which all the phenomena can be reconstructed. All other properties may be reducible to the basic properties, but the basic properties do not reduce to anything else. What, but a materialist bias, precludes the possibility that intentionality is one of these basic properties? Further, one cannot simply shrug off the demand for explanation as unnecessary, precisely because human intentionality is contingent and hence neither self-explanatory nor a brute fact. To claim otherwise is, as John Warwick Montgomery points out

> to deny the contingent nature of [this feature of] the world and mythologically make it absolute—in the face of all empirical knowledge of its non-self-explanatory character.[62]

Third, traditional theism does have an explanation for the origin of human intentionality, one which shows that appeal to a higher agency need not be like appeal to Hagiographical Mother Nature. As traditional theism characterizes God, His agency requires no further explanation. This is because the traditional God is an eternal and perfectly complete agent, a necessary being whose existence and attributes do not depend on the existence of anything else. Unlike us, the traditional God is not a finite, contingent agent, but an infinite, necessary agent, and in that sense his agency is *self*-explanatory. Charles Taliaferro puts the point well.

> To court theism is to entertain the thesis that there is a being whose properties of omniscience, omnipotence, goodness and *aseity* are not derived from some other agency….[63]

The case for explaining contingent agency by appeal to a divine agent is particularly strong because, as Montgomery has emphasized, there is good reason to believe that "personality does not arise from the impersonal," and because human intentionality is clearly contingent. Thus if human personality cannot arise from the impersonal matter of the universe, its source surely has to be a supernatural being, and on pain of regress, this being must be supposed to be a necessary or "Absolute" being: "the existence of personhood [in the world] is one of the contingencies requiring an appeal to a transcendent Absolute."[64]

At this point the materialist is liable to protest that God is the ultimate supernatural skyhook, and hence cannot be invoked as a legitimate scientific explanation. In response, we may note that science has frequently benefited from the postulation of skyhooks, albeit typically natural ones (see Chapter 1). But the real objection is not to non-mechanistic agency, which has proven fruitful in science, but to supernatural agency. The most frequent charge is that involving the supernatural would imply "gaps" in nature which would make systematic scientific study impossible. As common as this argument is, it has been thoroughly discredited by the recent work of Del Ratzsch. He points out that scientists already have means for detecting when unaided nature could not produce a given phenomenon, and for discerning what sort of agent was responsible. In archaeology, we may conclude that an item is a human artifact, and not the result of a natural process. In the Search for Extra-Terrestrial Intelligence (SETI), a signal exhibiting Complex Specified Information would allow us to infer an alien intelligence. What if we found something which could not be explained by any contingent intelligence (human or alien), such as (if I am right) intentionality or agency itself?[65] Ratzsch spells out how a scientist who is not dogmatically wedded to materialism can argue.

> If unaided nature cannot generate some phenomenon, and there that phenomenon is in front of us, then obviously some other agency was involved. If we add the premise that humans couldn't or didn't produce the phenomenon, whereas aliens could have, we get the aliens-of-the-gaps arguments, which is precisely what underlies SETI. If we add the further premise that aliens couldn't or didn't…then supernatural agency follows.[66]

Here it is important to emphasize that science can make advances by showing that a reduction fails. The alchemical reduction of silver and gold to base metals, the Cartesian reduction of motion to direct contact, and the reduction of electromagnetic phenomena to the aether, were all failures as reductions and yet huge advances for science. If contingent agency cannot be accounted for in materialistic terms, yet can be explained by supernatural agency, then the bridge between science and theology, burned down by the Enlightenment exclusion of the supernatural from science, stands rebuilt.

However, there are others who allow that the idea of a supernatural agent is coherent, but who still deny it can play a role in empirical science, because the actions of any such being is likely to be inscrutable to human understanding. The objection seems to conflate two ways in which actions can be inscrutable. It can be inscrutable what the motives are yet perfectly clear what the effects are (e.g., a school shooting). Or it can be inscrutable what the effects are (e.g., the Enron board made a decision behind closed doors). Even if the motives of a supernatural action are inscrutable, it does not follow that its effects are. Indeed, the effects may be the same as ones observed in nature, with the exception that no natural causes were available to produce them. Thus, water is regularly turned into wine through a natural process. If, on a given occasion, wine appears spontaneously with no such process, the wine is no more inscrutable than natural wine, even if, like the wedding guests at Cana, we have no idea what the motive for making it was, who made it, or how it was made.[67] To be sure, it may be that some supernatural effects are inscrutable, either because our faculties are unable to discern them or because a supernatural agent acts in such a way that the effects are indiscernible from chance or law.[68] But there is no good reason to assume a priori that all such effects should be inscrutable. It may be that the supernatural agent wants to reveal its character to us.

Second, I am happy to acknowledge the fallibility and ignorance of human beings, but for that very reason find the skeptic's argument unconvincing. As Chesterton once said, "we do not know enough about the unknown to know that it is unknowable."[69] In the case of the traditional God of theism, the idea that we know that God is unknowable claims to know too much: surely it is up to God, not us, how much we can know of His actions. If so, it is an empirical question whether God has made His designing work accessible to us. Certainly, the emergence of modern science was made possible by individuals like Johannes Kepler, who saw scientific investigation as a matter of thinking God's thoughts after Him.[70] The assumption was that despite our frail

faculties, there is a natural affinity between human and divine reason and agency, which is one reading of the Biblical claim that humans are made in God's image. Further, the very idea that science is possible depended on the assumption that the same order or logos at work in the cosmos is mirrored in human reason. The fact is that even materialist science requires the assumption that the world and the human mind are such that the mind can discover how the world works; it is just that the materialist seems unable to justify this assumption.[71]

The idea that we cannot explain human agency by appeal to a higher, supernatural agency thus turns out to rest on a prejudice. It is not that no such explanations are possible, since theism does not merely postpone the need for the very same kind of explanation that human agency requires. Nor is it the case that all appeal to the supernatural is necessarily unscientific, since there are scientific procedures for determining what unaided nature cannot do, and these can be extended to show the limits of contingent agents as well. And nor are there convincing a priori arguments to show that the effects of supernatural agency are necessarily inscrutable to human reason. Rather, the real reason so many reject theistic explanations is simply that the explanations are not materialistic or reductive, and this simply begs the question. If materialistic accounts of agency cannot explain it, but at least one non-materialistic explanation can, those with an open mind will follow the better argument. When the reality of agency is acknowledged, it will be seen that an unbiased commitment to the rationality of science requires the rejection of materialism as an a priori doctrine.[72]

Notes.

1. This essay is adapted from chapter 3 of my book, *Agents Under Fire: Materialism and the Rationality of Science* (Lanham, MD: Rowman and Littlefield, forthcoming).

2. Daniel Dennett, "Evolution, Error and Intentionality" in his *The Intentional Stance*, 298-299.

3. Jerry Fodor, "Deconstructing Dennett's Darwin," in his *In Critical Condition: Polemical Essays on Cognitive Science and the Philosophy of Mind* (Cambridge, MA: MIT Press, 2000), 186.

4. See, for example the essays in Paul M. Churchland and Patricia S. Churchland, *On the Contrary: Critical Essays, 1987-1997* (Cambridge, MA: MIT Press, 1998).

5. See Chapter 2 of my book *Agents Under Fire: Materialism and the Rationality of Science* (Lanham, MD: Rowman and Littlefield, forthcoming).

6. Type-identity theory fell into disrepute because of the multiple realizability argument. Identifying a type of mental state (say, pain) with a type of brain state (say, C-fibres firing) seemed implausible because different creatures that experience pain have quite different neural structures, and conceivably might not have neural structures at all. Functionalism was proposed to overcome this difficulty, claiming that mental states are functional / causal roles which can be realized by a variety of physical states. However, the functional / causal transitions are described entirely in blind, impersonal terms, and seem unable to account for qualia ("raw feels"), points of view, the personal nature of an agent's practical reasons (the fact that I think about how *I* will do something in the future), and the aboutness and directness (intentionality) of thought. An excellent, early critique of functionalism is Ned Block's "Troubles with Functionalism," in *Minnesota Studies in the Philosophy of Science* IX (Minneapolis, MN: University of Minnesota Press, 1978), 261-325.

7. Dennett, "True Believers: The Intentional Strategy and Why It Works," *The Intentional Stance*, 16.

8. Dennett, "True Believers: The Intentional Strategy and Why It Works," *The Intentional Stance*, 16-17.

9. Typically we assume optimality ("innocence") until we find a design flaw ("proven guilty"), at which point we downwardly revise to the nearest approximation to optimality consistent with the design flaw.

10. Dennett, "True Believers: The Intentional Strategy and Why It Works," *The Intentional Stance*, 17.

11. Dennett, "Three Kinds of Intentional Psychology," *The Intentional Stance*, 53.

12. Christopher Viger, "Where Do Dennett's Stances Stand?" in eds. Don Ross, Andrew Brook and David Thompson, *Dennett's Philosophy: A Comprehensive Assessment* (Cambridge, MA: MIT Press, 2000) ,134

13. Dennett, "True Believers: The Intentional Strategy and Why It Works," *The Intentional Stance*, 29.

14. Christopher Viger, "Where Do Dennett's Stances Stand?" 137.

15. See Dennett, "Evolution, Error, and Intentionality," *The Intentional Stance*, 287-321.

16. The example is Searle's. See *The Rediscovery of Mind*, 78. Searle, however, seems less comfortable with the idea of derived intentionality beyond language.

17. Dennett, "Evolution, Error, and Intentionality," *The Intentional Stance*, 297.

18. Richard Dawkins, *The Selfish Gene* (Oxford: University Press, 1976).

19. Likewise, Dawkins frequently makes the point that via our memes, we can transcend the dictates of our genes.

20. Dennett, "Evolution, Error, and Intentionality," *The Intentional Stance*, 299.

21. Dennett, "Evolution, Error, and Intentionality," *The Intentional Stance*, 305.

22. Dennett, "Evolution, Error, and Intentionality," *The Intentional Stance*, 315. We need the intentional stance to do reverse-engineering, since we must assume that a biological structure is *for* some work in order to figure out how it does that work.

23. Dennett, "Evolution, Error, and Intentionality," *The Intentional Stance*, 316-317.

24. Millikan argues that we can understand human thought in terms of the evolutionary "proper functioning" of our cognitive mechanisms. See her *Language, Thought and Other Biological Categories* (Cambridge, MA: MIT Press, 1984).

25. Dennett, "Evolution, Error, and Intentionality," *The Intentional Stance*, 300.

26. Dennett, "Evolution, Error, and Intentionality," *The Intentional Stance*, 318.

27. As a theist, I see human intentionality as ultimately deriving from God's. Indeterminacy strikes me as an obvious consequence of the fact that people fail to gain mastery of certain concepts. I deny the Burgean thesis that we should attribute intentional states about arthritis on the basis of the correct public use of the linguistic term "arthritis." (See Tyler Burge's, "Individualism and the Mental," *Midwest Studies in Philosophy*, IV, 73-121, and his "Individualism and Psychology," *The Philosophical Review*, XCV, No. 1, 3-46.) If someone really cannot distinguish arthritis from other similar ailments, his *statement* that he has arthritis may be unproblematically false, because statements are held accountable to public standards of linguistic usage. But I do not think it obviously true that we should ascribe to this person the *belief* that he has arthritis (or even that he has arthritis-or-similar ailments) in his joints, because his concept of "arthritis" is not determinate enough to make these discriminations. The vagaries of what, if anything, natural selection "selects for" are irrelevant, since the problem of indeterminacy arises independently from a consideration of conceptual mastery. Furthermore, it is a red herring in the current debate since our difficulty in expressing certain intentional contents

in public language has nothing to do with whether they really exist. It merely shows that the standards to which we hold language users accountable are sometimes too high to capture people's mental contents accurately. Hence I am sympathetic to the idea that folk psychology can be reformed by the addition of "narrow content," a kind of content which tracks the way the world looks from a subject's conceptual point of view more closely than "broad content," which links the subject to her public environment.

28. Dennett, "Evolution, Error, and Intentionality," *The Intentional Stance*, 317.

29. See Dennett, *Darwin's Dangerous Idea*, 76.

30. Dennett, *Darwin's Dangerous Idea*, 82-83.

31. Dennett, *Darwin's Dangerous Idea*, 374-378.

32. Fodor argues at length that evolution does not explain intentionality, because it cannot account for mental relations to what Brentano called "intentionally inexistent" objects like Santa Claus. See Fodor, "Deconstructing Dennett's Darwin," in his *In Critical Condition* (Cambridge, MA: MIT Press, 2000), 182-184.

33. The long and the short of it is that unfit creatures do not live long enough to reproduce. But it is not true that this was something natural selection intended, since intentions are directed at the future and natural selection has no prevision (or, indeed any other kind of vision).

34. Dennett, "Evolution, Error, and Intentionality," *The Intentional Stance*, 317.

35. "Granny" is invoked as a voice of common sense in many of Fodor's writings.

36. A much better response for Dennett to make would be to claim that Dennettionality is not yet intentionality at all, but does contain a crucial ingredient of it. Then he needs to explain in

detail how the progression from Darwinian to Gregorian creatures uses cranes to supplement and magnify that ingredient. This gradualistic approach will be considered later.

37. Nothing, that is, except Dennett's antipathy to "mind-first" explanations, to which we will return in the next section.

38. Quassim Cassam, "Reductionism and First-Person Thinking," Ch. 13 in eds. David Charles and Kathleen Lennon, *Reduction, Explanation, and Realism* (New York, NY: Oxford University Press, 1992), 361-380, 369. Cassam gives powerful reasons for rejecting Parfit's thesis that personal identity can be reduced to impersonal facts of psychological continuity.

39. Dennett, *Darwin's Dangerous Idea*, 374. Skinner, to be sure, would not accept Dennett's mentalistic description of operant conditioning. Skinner saw conditioning as the physical development of stimulus-response connections, in which representations played no role.

40. Dennett, *Darwin's Dangerous Idea*, 375.

41. A quite different line to take against Dennett is to question his adaptationism. Fodor has pointed out that even if neurophysiological structures were selected for, it does not follow that this was because of the associated psychological capacities. See Jerry Fodor, *The Mind Doesn't Work That Way* (Cambridge, MA: MIT Press, 2000), especially 87-90.

42. Searle, *The Rediscovery of the Mind*, 51.

43. Dennett, *Darwin's Dangerous Idea*, 191.

44. Fodor, "Deconstructing Dennett's Darwin," 182.

45. Elliott Sober defines "selection for" in his *The Nature of Selection* (Cambridge, MA: MIT Press, 1984), 97-102. Sober himself does not make any grandiose connections between this idea and intentionality.

46. This criticism is directed at standard Humean accounts of causation which are void of teleology. It has no force against the richer notion of causation recently defended by Robert Koons in his *Realism Regained: An Exact Theory of Causation, Teleology, and the Mind* (New York, NY: Oxford University Press, 2000). However, Koons' notion of causation is certainly incompatible with materialism.

47. Fodor, "Deconstructing Dennett's Darwin," 180.

48. Perhaps a better one, because if the creature is a Skinnerian creature (who occasionally makes the mistake of trying a non-lethal amount of the poisonous toadstools), we can predict that if its habitat changed to include non-poisonous red toadstools, these would be avoided too, because of the association with poison.

49. Fodor, "Deconstructing Dennett's Darwin," 177.

50. Fodor, "Deconstructing Dennett's Darwin," 178.

51. Fodor, "Deconstructing Dennett's Darwin," 186.

52. Jennifer Hornsby, "Physics, Biology, and Common-Sense Psychology," in eds. David Charles and Kathleen Lennon, *Reduction, Explanation, and Realism* (New York, NY: Oxford University Press, 1992), 155-177, 175.

53. The fictional reading of Mother Nature as natural selection viewed from the Intentional Stance is supported by the fact that Dennett says that we are "more literally" the result of natural selection than Mother Nature (see the first quote at the head of the chapter). Elsewhere, Dennett says that intentional states are "attributed in statements that are *true* only if we exempt them from a certain familiar standard of literality," and makes it clear that he does not endorse fictionalism in general (see Dennett's "Instrumentalism Reconsidered" in his *The Intentional Stance*, 72). By "non-literal," Dennett means that intentional states are abstracta not

concreta. However, as we have seen, there is very good reason to think that Mother Nature *is* an outright fiction.

54. Jennifer Hornsby, "Physics, Biology, and Common-Sense Psychology," 168.

55. Fodor, "Deconstructing Dennett's Darwin," 177.

56. Dennett makes this case in the first three chapters of his *Darwin's Dangerous Idea*.

57. Georges Rey, *Contemporary Philosophy of Mind* (Oxford: Blackwell, 1997), 21.

58. Furthermore, with an enriched notion of causation, e.g. the idea of top-down emergent causation on which Koons and others are currently working, one may also be able to account for the causation of intentional states in the natural world. However, I am *not* here offering any account of mental causation or the mind-body problem; my focus is solely on the ultimate origin of intentionality.

59. We do of course have our own goals. To say that our intentionality derives from a higher being's does not imply that our goals are the same as the higher being's, only that we would not have any intentional states unless such a being existed.

60. If, like Searle, one claims that it is simply a fact about brains that they have the power to generate intentional states, one needs to identify the feature which brains have (but computers lack) in virtue of which brains (but not computers) have this power.

61. John Haugeland, "The Intentionality All-Stars," *Philosophical Perspectives* Volume 4, Action Theory and the Philosophy of Mind, 1990, 383-427.

62. John Warwick Montgomery, *Tractatus Logico-Theologicus* (Bonn, Germany: Verlag für Kultur und Wissenschaft, 2002), 3.8521, 118.

63. Charles Taliaferro, "Naturalism and the Mind," in eds. William Lane Craig and J. P. Moreland, *Naturalism: A Critical Analysis* (London: Routledge, 2000), 133-155, 151. ("Aseity"

means ultimacy.) Taliaferro also points out that, in a sense, the theist is a reductionist: while the materialist thinks that agency reduces to matter, the theist thinks that matter reduces to God's agency.

64. John Warwick Montgomery, *Tractatus Logico-Theologicus*, 3.8542, 118.

65. It doesn't work to suggest that our intentionality might derive from that of superior aliens, because they also are contingent beings and so the origin of their intentionality is left unexplained. That is why appeal to an eternal and necessary agent, whose intentionality does not derive from anywhere else, is explanatory.

66. Del Ratzsch, *Nature, Design and Science: The Status of Design in Natural Science* (Albany, NY: SUNY Press, 2001), 119. Ratzsch considers a variety of other reasons for excluding the supernatural from science and finds them all inadequate.

67. I am not suggesting by this example that all phenomena which warrant a supernatural explanation are direct miracles. While I think intentionality has an ultimately supernatural explanation, I take seriously the suggestion that it could be built into nature, but such an enriched notion of nature is certainly incompatible with any non-trivial version of materialism.

68. Thus Dembski's filter will not detect the design of an agent who simulates chance or law.

69. G. K. Chesterton, *The Quotable Chesterton*, ed. G. J. Marlin, R. P. Rabatin and J. L. Swan (Garden City, NY: Image, 1987), 386, quoted in William Dembski's *Intelligent Design: The Bridge Between Science and Theology*, 60.

70. For more on this, see my "Thinking God's Thoughts After Him: How the Bible and Science View the World." Editorial in *Issues in Christian Education* Spring 2001, Vol. 35, No. 1, 4-5.

71. It may be said that evolution itself explains the affinity of man's mind to his natural environment. I argue against this at length in my essay, "Beyond Skinnerian Creatures: A Defense of the Lewis/Plantinga Critique of Evolutionary Naturalism," *Philosophia Christi*, Vol 5, No. 1, 2003, 143-165. Another good reason to doubt the materialist's claim is given by Robert Koons, who persuasively argues that the authority of science to tell us what is in our ontology depends on an assumption of epistemic reliability that cannot be justified on materialist assumptions. That the laws of nature are such that the human mind can discover them cannot be explained by the laws themselves (including natural selection), but requires a supernatural explanation. See Robert Koons, "The Incompatibility of Naturalism and Scientific Realism," in eds. William Lane Craig and J. P. Moreland, *Naturalism: A Critical Analysis* (London: Routledge, 2000), 49-63.

72. This is a vindication of Phillip Johnson's "wedge" argument, which aims to show that empirical science is not the same as materialistic science and that empirical science is better off without materialism.