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## INSTRUMENTAL INTENTIONALITY\*

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Many physicalists are committed to an austere dichotomy: either beliefs, desires and intentions are scientifically respectable or attributions of such attitudes are all false. One physicalist, Daniel Dennett, offers a third alternative, which seems to permit a kind of instrumentalism concerning attitudes. I argue that Dennett's attempt to reconcile an instrumentalistic account of attributions of attitudes with a thoroughgoing physicalism founders on unresolvable conflicts between his official theory and his actual treatment of key concepts. As a result, instrumentalism concerning attitudes is exposed as inadequate to be a genuine alternative to the physicalist's dichotomy.

The suspicion that beliefs, desires, intentions and other attitudes identified by content resist scientific treatment has driven a number of physicalists to conclude that putative intentional phenomena should be dismissed as illusions of prescientific theorizing (Churchland 1981; Stich 1983). At least one physicalist, however, has come to a different conclusion. Daniel C. Dennett has proposed an instrumentalism that promises to remove attributions of attitudes from the path of science altogether. If the project can be sustained, it will secure a place, shielded from the claims of advancing science, for intentionality construed instrumentalistically.

Although Dennett's bold attempt to combine physicalism with an instrumentalistic account of attitudes is the most developed theory of its kind, I believe that ultimately it is unsuccessful. And it is unsuccessful not just because it has counterintuitive consequences, but because it lacks internal coherence. There runs throughout Dennett's view, I think, a systematic discrepancy between his official theory and his actual treatment of key concepts. My aim is to bring out inconsistencies in the treatment

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†I wish to thank Hilary Kornblith, Derk Pereboom, and Daniel Dennett for comments on an earlier version of this article. Since Dennett continues to develop his position, he may no longer hold all the views that I attribute to him here. (See his *The Intentional Stance*, Cambridge, Mass.: Bradford/MIT Press, 1987). Nevertheless, these views well illustrate the difficulties of working out the details of an instrumentalism about belief.

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of the concepts of belief, rationality and design, to expose difficulties concerning the status of what Dennett calls “stances”, and to show that removal of these defects would jeopardize either Dennett’s realism concerning physical phenomena or his instrumentalism concerning propositional attitudes.

**1. Intentional System Theory.** Dennett’s concept of an intentional system depends upon what Dennett calls “stances”. Stances are strategies that one may adopt to predict the behavior of a person or machine. From the physical stance, objects are described and their behavior predicted on the basis of physical constitution. From the design stance, objects are described and their behavior predicted in terms of normal operation or function. Such predictions assume no breakdown or malfunction. From the intentional stance, objects are described and their behavior predicted by attributing rationality to them—that is, “by ascribing to the system *the possession of certain information* and supposing it to be *directed by certain goals*, and then by working out the most reasonable or appropriate action on the basis of these ascriptions and suppositions” (Dennett 1971, p. 6). In addition to assuming no breakdown or malfunction, predictions from the intentional stance assume that the agent will select an optimal strategy to reach his or her or its goals.

An intentional system is one whose behavior is predictable from the intentional stance, from which attitudes like belief are attributable:

. . . *all there is* to being a true believer is being a system whose behavior is reliably predictable via the intentional strategy, and hence *all there is* to really and truly believing that *p* (for any proposition *p*) is being an intentional system for which *p* occurs as a belief in the best (most predictive) interpretation. (Dennett 1981c, p. 68)

In sum, “being rational is being intentional is being the object of a certain stance” (1976, p. 271). And further:

The success of the stance is of course a matter settled pragmatically, without reference to whether the object *really* has beliefs, intentions, and so forth; so whether or not any computer can be conscious, or have thoughts or desires, some computers undeniably *are* intentional systems, for they are systems whose behavior can be predicted, and most efficiently predicted, by adopting the intentional stance toward them. (Dennett 1973, p. 238)

Since “the choice of stance is ‘up to us,’ a matter of *decision*, not discovery” (1973, p. 239), a system has beliefs and other attitudes attributed from the intentional stance only in virtue of its relation to the (possible) predictive strategies of someone else. On intentional system theory, then,

systems have beliefs, and attributions of beliefs may be unproblematically true; but—here is the instrumentalism—what makes such an attribution true is neither that the believer has any particular property, nor that the believer is related to its physical environment in any particular way, but rather the fact that the believer succumbs to a certain strategy or stance. Dennett's instrumentalism is explicit:  $x$  believes that  $p$  if and only if the belief that  $p$  is predictively attributable to  $x$  (1978a, p. xviii).

An intentional explanation, for all its heuristic value, is never more than an intermediate step on the way to an explanation in terms of design or physical constitution. "Intentional theory is vacuous as psychology because it presupposes and does not explain rationality or intelligence" (1971, p. 15). Although it is a free decision to adopt the intentional stance for convenience, the business of a scientific psychology is to illuminate mentality from the deeper, more explanatory stances: "if one wants to predict and explain the 'actual, empirical' behavior of believers, one must . . . cease talking of belief, and descend to the design stance or physical stance for one's account" (1971, p. 22). In short, the intentional stance, which presupposes neither of the "lower" stances, (1973, p. 240) is only a resting place on the way to the "lower", more mechanistic stances, from which genuine explanations are advanced.

It will be useful in what follows to make explicit a distinction implied by Dennett. I shall use the term 'feature' with next to no ontological commitment: a system  $S$  has a feature  $F$  if and only if sentences of the form " $S$  is  $F$ " are true. Dennett's program invites contrast between those features that a system has by virtue of (possibly) being the object of a stance, and those features that a system has that are independent of (the possibility of) anyone's taking any stance toward it. For example, although one may correctly predict that a certain glass of water will freeze at 0 degrees Centigrade, the water's having the property of freezing at 0 degrees Centigrade does not depend on anyone's (possible) predictive strategies. On intentional system theory, on the other hand, the feature that someone has of *believing* that water freezes at 0 degrees is determined by the (possible) predictive strategies of others.

So, let us distinguish between features that are *stance-dependent*, and features that are *stance-independent* as follows. Suppose that  $x$  has a feature  $F$ . Then  $F$  is a stance-independent feature of  $x$  if and only if  $x$ 's having  $F$  is independent of any strategies, attitudes or ascriptions toward  $x$  of any  $y$ ,  $y \neq x$ ; otherwise,  $F$  is a stance-dependent feature, or a feature by attribution, of  $x$ . Stance-dependent features are those features that a system has only in virtue of its (possibly) being an object of a certain stance.

The distinction between stance-dependent and stance-independent features is motivated by Dennett's ontology. About putative entities like be-

liefs, experiences and pains, Dennett is an eliminative materialist (1978a, p. xx). At the same time, Dennett is at pains to argue that sentences of the form “*S* believes that *p*” have truth value, and not all are false (1981c). As Dennett remarks, “Attributions of belief and desire are not just ‘convenient fictions’; there are plenty of honest-to-goodness instrumentalist *truths*” (1983, p. 380). The innocuous construal of ‘feature’ permits the distinction between stance-dependent and stance-independent features to accommodate both aspects of Dennett’s view: on the one hand, in line with eliminative materialism, we may deny that beliefs are stance-independent features, but on the other hand, we may understand the truth of sentences of the form “*S* believes that *p*” in terms of stance-dependent features of the systems that have them.

The point of distinguishing between stance-dependent and stance-independent features is to contrast Dennett’s instrumentalism about the intentional with his realism about the physical. Since he is explicitly committed to what I am calling the “stance-dependence” of features attributed from the intentional stance,<sup>1</sup> Dennett could reject my formulation of the stance-dependent/stance-independent distinction only by rejecting the stance-independence of features attributed from the nonintentional stances. And since to do that would be to abandon realism about physical phenomena, I think that the distinction is unavoidable for Dennett—as long as he remains in any sense a realist.

It is important to see that the distinction between stance-dependent and stance-independent features is, in the first instance, not between the characteristic vocabularies of the stances, but between the kinds of features that make descriptions in those vocabularies true.<sup>2</sup> On Dennett’s official view, what makes it the case that *x* has *F*, where *F* is a physical feature, is independent of anyone’s strategies (that is, *F* is stance-independent); but what makes it the case that *x* has *F*’, where *F*’ is an intentional feature, depends upon someone’s (possible) strategies (that is, *F*’ is stance-dependent).

The stance-dependent/stance-independent distinction should not be confused with other distinctions in the literature, such as the intrinsic/

<sup>1</sup>The expression “stance-dependent feature” may be eliminated in favor of the more cumbersome, but more explicitly Dennettian, “feature possessed only in relation to someone’s strategies”. (Compare a “particular thing is an intentional system only in relation to the strategies of someone who is trying to explain and predict its behavior” (Dennett, 1971, pp. 3–4).) Not only is my formulation of the relevant distinction shorter, but also it makes plain the unity of my objections. All of my arguments point to a single, central flaw in Dennett’s conception—namely, an inconsistency in the use of the idea of being a feature possessed only in relation to someone’s strategies, or, more briefly, of stance-dependence.

<sup>2</sup>Dennett’s view may be contrasted with Davidson’s here. On Davidson’s view, mental events are simply physical events described in a special (mentalistic) vocabulary. If this were Dennett’s view, as we shall see in the discussion of rationality below, his instrumentalism would collapse.

extrinsic or intrinsic/relational distinction.<sup>3</sup> Velocity is relative to inertial frame, and hence is not an intrinsic feature. But it is not thereby a stance-dependent feature; the velocity of an object does not depend on anyone's possible predictive strategies any more than its temperature does. (To insist here that velocity depends upon someone's *choice* of frame would be misleading.) Not all relational features are stance-dependent, only those whose possession depends upon someone's strategies.

Further elaboration of exactly what stance-dependence is would require explication of what strategies are and would take us afield. (I have characterized stance-dependence as sharply as Dennett has characterized the intentional stance.) What matters for the arguments that follow is that Dennett is explicitly committed to the idea of stance-dependence (if not to the phrase), and that the stance-dependence/stance-independence distinction is exhaustive and hence can ground the premise common to a series of dilemmas.

**2. Belief, Rationality and Design.** Dennett puts his intentional system theory to two distinct uses: one broadly ethical and the other proto-scientific. He uses intentional system theory to vindicate our view of ourselves as persons, as moral and rational agents acting on beliefs and desires; and he uses it as a vehicle of discovery, a source of testable hypotheses in psychology and biology. As we shall see, neither of these purposes is well-served by instrumentalism.

*2.1. Belief and Other Attitudes.* On the official view, believing that *p* and other attitudes are stance-dependent features of systems. However, when discussing ethical issues, Dennett often implies that the features attributed from the intentional stance are more than mere stance-dependent features.

For example, Dennett says, "a belief is essentially something that has been *endorsed* (by commission or omission) by the agent on the basis of its conformity with the rest of his beliefs" (1973, p. 252). Although endorsement by the agent is eminently plausible as a requirement of belief and is required in many contexts of ethical evaluation, it goes well beyond the view of belief as what is predictively attributable. Since what is predictively attributable to an individual need not coincide with what that individual endorses (think of a chess-playing computer), Dennett is not entitled to this claim.

<sup>3</sup>If the stance-dependence/stance-independence distinction is similar to any other distinction common in the literature, it is to the mind-dependence/mind-independence distinction as used in discussions of temporal becoming. (See Adolf Grünbaum 1968.) Nevertheless, I would not want to push the comparison too far, nor is it relevant to current purposes to push it at all.

A natural move for an intentional system theorist to make here is to point out that endorsing is no less intentional than believing, and that the intentional system approach to belief extends to all intentional concepts worth preserving; so, one may counter, a person endorses something if and only if endorsement of it may be predictively attributed to the person. Although Dennett's own remarks lend little support to this interpretation, the interpretation may have the merit of rendering the account consistent by treating intentional concepts like endorsement in terms of intentional system theory—but at the price of robbing Dennett's claims about agency and decision making of any plausibility. If endorsement were taken as no more than what can be predictively attributed, then whether or not I endorse a claim would not be something that I do (with no conceptual dependence on a would-be ascriber), but something that someone else would find it useful to attribute to me. The difficulties that we find in belief understood in terms of intentional system theory would simply accrue to endorsement.

Moreover, throughout *Elbow Room*, Dennett takes beliefs to provide reasons that cause us to behave one way rather than another (1984, chap. 2). But if beliefs have such causal efficacy, they can hardly be merely stance-dependent features of believers. On the one hand, it is difficult to see how an eliminative materialist can suppose that features whose possession depends upon the (possible) predictive strategies of others can cause anything at all. On the other hand, one who takes beliefs to have causal powers is in no position to be an instrumentalist with regard to belief (unless he is also an instrumentalist with regard to causation).

The difficulty would be removed if Dennett were also an instrumentalist about causation and took causal efficacy to be a stance-dependent feature. Not only do I suspect that Dennett would find this move unpalatable and unhelpful in the context of his discussion of free will, but also it would threaten his realism about physical phenomena, a paradigm of which is causation. To be an instrumentalist about causation would leave one very little about which to be a realist.

Thus, the plausibility of Dennett's *rapprochement* of the physical and the intentional seems to require sleight-of-hand deployment of intentional system theory, deployment that conflicts with the theory's official instrumentalism. The conflict is unresolvable, because consistent instrumentalism is inadequate to bear the weight of the ethical claims.

2.2. *Rationality*. Officially, rationality is attributed from the intentional stance, and features attributed from the intentional stance are stance-dependent. Yet, much of Dennett's discussion suggests that rationality is as stance-independent as a design feature like vision. For example, he advises that we think in terms of design "*all the way in*—not just for

eye-design, but for deliberation-design and belief-design and strategy-concoctor design" (1981b, p. 43). And, since Dennett offers an explicitly design-level model of practical reasoning, he further implies that rationality is a design feature (1978b, p. 295). Finally, Dennett accounts for the success of the intentional stance by appeal to adaptation. In evolved organisms, rationality is produced by mechanisms of natural selection.

So, quite often, Dennett emphasizes his construal of rationality as part of a system's design (1971, pp. 5–6). He sounds as if the intentional stance, with its presupposition of rationality, simply offers a handy, alternative vocabulary to designate those design features that make a system predictable in a certain way. But if the intentional stance just offered a convenient vocabulary for designating certain design features, then attributions of rationality and of design would designate a single set of features, and rationality and design features would both be stance-dependent or both be stance-independent.

Rationality, like belief, can not be stance-independent without aborting intentional system theory: if ascriptions of rationality simply ascribed features equally (or better) describable from the design or physical stance, they would be true in virtue of the obtaining of some actual (that is, physical) state of affairs. In that case, the grounds for instrumentalism would be thoroughly eroded. So, rationality is *not* a stance-independent feature of systems that have it.

On the other hand, Dennett often seems to hold that design features, at least in evolved organisms, *are* stance-independent: any feature produced by natural selection may be fully specified and understood without advertent to anyone's predictive strategies or attitudes. For example, whether or not a plant undergoes photosynthesis seems independent of anyone's possible predictive strategies. So, it seems that features produced by natural selection are stance-independent and rationality is stance-dependent. But in that case, Dennett cannot consistently explain rationality as the product of natural selection.

One may be tempted to object: a feature is stance-dependent just in case its attribution allows prediction from the intentional stance. Although mechanisms of natural selection are stance-independent, they may produce features that make an organism predictable from the intentional stance. So, the objection may go, there is no contradiction in supposing that stance-independent features may also be stance-dependent features.

The objection is misguided, because it construes stance-dependence in a way that undercuts Dennett's instrumentalism: if stance-dependence were merely a matter of an alternative vocabulary for designating features which a system has independently of anyone's taking a stance, then there would be a physical fact of the matter as to whether or not the system has the feature, specified in a stance-dependent way, and ascriptions of ration-



ality would be true or false in exactly the same way as physical descriptions. In that case, construing the intentional stance as instrumentalistic but the physical stance as realistic would be wholly unmotivated, and, again, the instrumentalism would dissolve.

An objector may go on to claim that at least, there is a strong similarity between optimality of design (at the design level) and rationality (at the intentional level): they both have survival value. But, I should reply, the appearance of similarity here is vitiated by an equivocation on “has survival value”. Assuming (for the moment) realism about the design level and instrumentalism about the intentional level, to say that optimality of design has survival value is to say that the design causally contributes to an organism’s survival; but to say that rationality has survival value is only to say that certain attributions have predictive power.

Dennett simply treats rationality inconsistently. Although officially a stance-dependent feature, rationality is often implied by Dennett to be a stance-independent feature, a feature that an organism has *per se*, without regard to the predictive strategies of others. And this shift over to suggesting that rationality is a stance-independent feature is nowhere more prominent than when Dennett invokes evolution; he almost always speaks of rationality as something that an organism has *per se*. Indeed, the “creation and improvement of intelligence is one of evolution’s most impressive products” (1984, p. 57; compare 1981a). But a feature that an organism has *per se* is possessed independently of the predictive strategies of others; it is a stance-independent feature.

To sum up the discussion of rationality: On the official theory, rationality can not be understood as a feature that an organism has *per se*, apart from predictive strategies. For, officially, “being rational is being intentional is being the object of a certain stance” (1976, p. 271). But when Dennett links rationality to design in the various ways, he treats rationality as a feature that an organism has *per se*, as opposed to a feature that an organism has in virtue of its (possibly) being the object of a certain stance. One cannot consistently suppose that rationality is acquired by natural selection if one is a realist about the products of natural selection but an instrumentalist about rationality.

*2.3. Design.* Just as the concept of rationality seems to wobble back and forth between the intentional and design stances, the design stance itself wobbles between stance-independent features attributed from the physical stance and stance-dependent features attributed from the intentional stance. This latter instability, I believe, has obscured the inconsistency in the treatment of rationality.

In keeping with Dennett’s scientific realism and the status of theories of natural selection as scientific, I have been supposing that, officially,

Dennett takes design features to be stance-independent. Since descriptions from the design stance assume absence of breakdown or malfunction, however, it is time to question that supposition: Can the relevant concept of malfunction or breakdown be understood in a stance-independent way?

For artifacts familiar to us, the answer is no. As a simple-minded illustration, suppose that someone presses the brake pedal of an automobile and there is no response. One natural way to describe this episode is as a malfunction of the brakes. However, there is no fact of the matter in terms of stance-independent features as to whether an occurrence should be described as a breakdown or, more neutrally, as a reorganization or change of disposition. The “failure” of the brakes is only clearly a malfunction or breakdown relative to someone’s (probably the designer’s and/or user’s) intentions. But since on intentional system theory, beliefs, desires, and intentions are stance-dependent, to describe an event as a malfunction or breakdown, in the case of artifacts, is to attribute to it a stance-dependent feature.<sup>4</sup>

Dennett has observed that Darwin did not dethrone design as an explanatory concept, but rather showed that design need not be construed anthropomorphically (1975, p. 73); thus, to say that a feature is part of the design of a system is not to imply that the system was designed by an intelligent being. Nevertheless, the facts remain that malfunctions are relative to design, that artifacts are designed by intelligent beings, and that what design an artifact has is relative to the intentions of the designer. What warrants the description “breakdown” or “malfunction” depends upon such stance-dependent features as intentions. Therefore, at least in cases of artifacts, features attributed from the design stance can not be understood in a stance-independent way.

Are malfunctions in evolved organisms also stance-dependent features? If malfunctions in evolved organisms are *not* stance-dependent features, then the fact that malfunctions in artifacts are stance-dependent features puts Dennett’s goal of a general theory of intelligence that applies equally to organisms and artifacts permanently out of reach. If, on the other hand, malfunctions in evolved organisms *are* stance-dependent features, then there remains nothing in the design stance untainted by the intentional.

Suppose that Dennett takes design features generally to be stance-dependent. This would seem to allow for a unified view of humans and artifacts: functions of a machine are relative to the intentions of the designers (namely, humans), and functions of evolved organisms are rela-

<sup>4</sup>It may be thought that we can avoid regarding brake failures as dependent on intentions if our theory about cars is an idealization that permits identifying non-responsive brakes as breakdowns relative to that idealization. However, which idealization is the correct one will be determined in part by the intentions of the designers.

tive to the intentions of Mother Nature. But to say that Nature has intentions, officially, is to say no more than that attribution of intentions is predictive. Thus, the cost of taking design features to be stance-dependent seems to be instrumentalism about theories of natural selection.

Dennett thus seems faced with a deep dilemma regarding the design stance. If design features are stance-independent, then there is no place for malfunction, at least in the case of artifacts (since having brakes, etc., is not stance-independent); but if design features are stance-dependent, then theories of natural selection, as theories explaining design features of evolved organisms, must be construed instrumentally. In the first case, the design level tends to collapse into the physical; in the second case, the design level tends to collapse into the intentional. The result is that the design stance is inherently unstable.

The unavoidable inconsistencies in the treatment of belief, rationality and design suggest that instrumental intentionality is an illusion. This suspicion will be further confirmed on consideration of the status of the physical and intentional stances.

**3. The Status of the Stances.** Suppose that Dennett were to fend off the difficulties of design. Still, the problems would persist. The one that I shall focus on concerns another aspect of the relation between the physical and intentional stances; is the intentional stance dispensable without cognitive loss? Attempts to answer this question lead, I believe, to another dilemma, which has been obscured by the inconsistency of treatment of the intentional stance.

Apart from the difficulties engendered by ambiguity, the attempt to render physical and intentional explanations compatible leads, I believe, to a kind of metaphysical dilemma, one which can be resolved within a physicalist framework (if at all) only at the expense of the vocabulary of the intentional stance that Dennett aims to preserve. On the one hand, if there is something that eludes the physical stance, then Dennett's instrumentalism is imperiled; but on the other hand, if nothing eludes the physical stance, then Dennett's intentionalism can not play its assigned role.

If Dennett is correct, then any system, human or not, may be described exhaustively and its operations explained wholly in terms of its physical constitution. Dennett points out that "if some version of mechanistic physicalism is true (as I believe), we will never *need* absolutely to ascribe any intentions to anything . . ." (1976, p. 273). This seems to imply that the intentional stance is in principle (even if not in practice) dispensable.

On the other hand, Dennett has suggested, to fail to take an intentional stance is, in some cases, to miss certain "objective patterns". Surely, this claim, which would help give the intentional stance the weight it needs to be more than a "sham", leads straight to a dilemma for Dennett; for

the existence of *objective* patterns that would be missed by a physical stance would seem to falsify Dennett's instrumentalism concerning the intentional level.

For example, consider Dennett's superior Martians, who can predict all our behavior, every physical movement, from the physical stance. Despite this ability, Dennett says,

if they did not also see us as intentional systems, they would be *missing something* perfectly objective: the *patterns* in human behavior that are describable from the intentional stance, and only from that stance, and which support generalizations and predictions. (1981c, p. 64)

If Dennett's view is that in failing to take the intentional stance, the Martians would miss something objective about us, he would seem to have revised his earlier view that "a particular thing is an intentional system only in relation to the strategies of someone who is trying to explain and predict its behavior" (1971, pp. 3–4). For this example purports to show that our being intentional systems is something perfectly objective apart from the strategies of the ascribers, which *ex hypothesi*, are wholly served by the physical stance. What might be missed from the physical stance?

Take a particular instance in which the Martians observe a stock broker deciding to place an order for 500 shares of General Motors. They predict the exact motions of his fingers as he dials the phone, and the exact vibrations of his vocal cords as he intones his order. But if the Martians do not see that indefinitely many *different* patterns of finger motions and vocal cord vibrations—even the motions of indefinitely many different individuals—could have been substituted for the actual particulars without perturbing the subsequent operation of the market, then they have failed to see a real pattern in the world they are observing. (1981c, p. 64)

But whether or not the pattern Dennett indicates requires the intentional stance for discerning it depends upon how the expression "perturbing the subsequent operation of the market" is understood. If it is cashed out in physical terms, then he has not shown any "perfectly objective" pattern that is missed by the physical stance. On the other hand, if it can not be cashed out in physical terms, then the claim would have to be that there are things that elude the physical stance.

Either way, the example illustrates the dilemma suggested earlier: If there is something intentional that eludes the physical stance, then Dennett's instrumentalism about the intentional is endangered; if there is nothing that eludes the physical stance, then the intentional stance seems, in principle, dispensable without cognitive loss, in which case Dennett's inten-

tional stance is “just a sham and a word game” (Haugeland 1982, p. 616).

**4. Ersatz Intentionality.** Dennett’s instrumentalism concerning intentionality does not deliver the goods. If intentional system theory is genuinely instrumentalistic, if the features that are designated from the intentional stance are stance-dependent features, then the theory can not play either the ethical or proto-scientific role that Dennett assigns to it: it can not play the ethical role unless inconsistently applied, and it can not play the proto-scientific role, because, as mere “interpretation”, the intentional stance swings free of the design and physical stances.

On the other hand, if Dennett means the intentional stance to offer a special vocabulary for describing features equally well describable in the vocabulary of the design or physical stance, and he remains a realist about entities posited from these other stances, then it is not even instrumentalistic. To attribute a belief that  $p$  would be to attribute a design or physical property (that is, a stance-independent feature) in a special vocabulary. This would be a straightforward reduction, to which appeals to hermeneutics would be irrelevant. It also would expose intentional system theory as a “sham and mere word play”, in which case the “legitimacy” that intentional system theory holds out for attributions of attitudes is spurious.

These critical points have been submerged, in part because Dennett has not been altogether consistent in his construal of instrumentalism. Throughout *Brainstorms*, he understands attitudes solely in terms of predictive attributability, and it is on this basis that I distinguished between stance-dependent and stance-independent features. Elsewhere, however, in comparing beliefs to centers of gravity, he implies that all he means by his instrumentalism is that beliefs are not to be identified with any particular inner physical state. But, clearly, nonidentity with a particular inner state is only a necessary, not a sufficient, condition for an instrumentalistic account of belief; one could be a realist about belief and identify a belief with a complex state of a subject and the environment.

In addition, if the aim is to give an instrumentalistic account of attitudes, the analogy between beliefs and centers of gravity is off the mark. Although we do not identify an object’s center of gravity with any inner state or particle, we do not take attributions of centers of gravity to be instrumentalistic, and for good reason: an object’s center of gravity is fully determined by the physical properties of the object; it is not a matter of “interpretation”. Like the use of exponents in mathematics, employment of the concept of a center of gravity provides a kind of shorthand for genuine properties (stance-independent features) that an object really has. Centers of gravity, unlike beliefs on Dennett’s view, are independent of anyone’s attitudes, ascriptions or strategies.

The analogy is further vitiated by the fact that the idea of a center of gravity is ensconced in a genuine theory, while the idea of belief is not. As Dennett says, he derives his conclusions about intentional systems from what “seems . . . to be a slapdash, informal sort of thinking that I explicitly deny to be a theory in the strict sense of the term” (1983, p. 382). Thus, the comparison of the concept of a belief to that of the concept of a center of gravity is likely to mislead and to obscure the deep dilemma of Dennett’s instrumentalism.<sup>5</sup>

It has been easy to see from the outset that on a consistent intentional system theory, too many things (such as game-playing computers, perhaps even lecterns) have beliefs and have them in the same sense that we do: officially, beliefs are nothing but stance-dependent features whose attribution enables the attributor to predict behavior described in certain ways. Although there is little predictive advantage in attributing beliefs to a lectern (since its behavioral repertoire is so limited), it can not be deemed an error to do so by intentional system theory. Moreover, to be consistent on intentional system theory, one must regard one’s own beliefs as no more than aids for predicting behavior, and even the regarding of them must be cashed out in terms of predictive attributability. Although not emphasized here, the wildness of the consequences of the theory should not be overlooked.

Quite apart from its counterintuitive consequences, however, Dennett’s instrumentalism is beset, as we have seen, by difficulties. It is plagued by a series of inconsistencies in the treatment of the concepts of belief, rationality and design; and it is caught in a dilemma concerning the epistemic completeness of the physical stance. For these reasons, I think it unlikely that intentional system theory will be made coherent.

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<sup>5</sup>If, as Dennett says (1983, p. 380), there are “physical facts in virtue of which a monkey believes what it believes”, and if those facts (whatever they are) fully determine the monkey’s beliefs in the way that the comparison to centers of gravity suggests, then there remains little point in calling the position instrumentalistic.

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