

NATURALISM AND THE PROBLEM OF INTENTIONALITY

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1. The ‘idiosyncratic’ properties of the mental

The Austrian philosopher Brentano (1838-1917) is widely credited for having raised a question with which twentieth century philosophy has been grappling ever since. It is the question of how thought can *be about* other things in the world. To answer that, he introduced the notion of *intentionality*. Intentionality is a term used by Brentano in order to denote the fundamental *aboutness* that underlies meaningful mental states. *All* meaningful mental states, like beliefs, desires, perceptions and language, are about things in the world, some real, some possible, some impossible. They have, in other words, *intentional* properties. It is important to note that in Brentano’s view -a view which is adopted by the majority of philosophers of mind- the predicate ‘intentional’ should be attributed only to mental phenomena, because all and only mental phenomena are intentional. Consequently, meaning and intentionality are meant to be used interchangeably. What is more, Brentano argues that the intentional properties of the mental are irreducible, that is, they cannot be reduced to a non-intentional vocabulary. This is what Quine¹ labels as Brentano’s *irreducibility thesis*.

The *intentional* properties of the mental have raised a number of ontological puzzles, mostly due to their non-material nature, which cannot be accounted for by the vocabulary of physical science. Descartes, observing that ideas, unlike bodies, do not consist of spatially extended matter, offered an explanation that accounts for their different ontological status to that of the material nature of physical properties. To explain

1. Quine, W.V.O., *Word and Object*, Cambridge, Mass., MIT Press, 1960, p. 220-221.

thought, which, in his view, is the characteristic property (the main attribute) of all non-physical (non-extended) things, Descartes posed a second realm of immaterial, non-physical properties or substances, especially devised to be the bearers of semantic properties. According to his substance-dualism, human beings should be generally conceived as an amalgam of two different substances; a body that is part of nature and a soul that is not part of nature, mental properties being held to be a function of that soul. Descartes' dualist view, however, elicited a number of problems, which led many philosophers to adopt a *monist, materialist ontological view* according to which everything there is belongs to one world, the world of nature. What monism excludes is putative entities as immaterial souls, Cartesian mental substances, entelechies and vital forces. Unlike substance dualism of the Cartesian sort, ontological monism views the human mental capacity as nothing more than a supremely complicated phenomenon in natural order. Consequently, the mental is part of nature in the same way as the chemical, the biological and the geological and therefore amenable to a unified study, which can be generally called 'the study of nature'.

Under the monist ontological view, there are no mental properties (mental states, mental phenomena) 'over and above' ordinary physical properties (physical states, physical phenomena). The formulation's expression 'over and above' does not commit the advocate of the monist ontological view to an identity theory. What it requires is some form of materialism about the mind, according to which 'mental states... should bear the same general ontic relationship to lower level physical items as do the physical entities quantified over and referred to in higher level physical laws generally'². As P.M. Churchland has noted, not even the property of temperature -a property often cited by reductionists as the model for reduced properties- is really identical with any lower level property³. Temperature is mean molecular energy only in a gas where the molecules are free to move around. In a plasma however, there are no constituent molecules, but there is temperature. Thus, the way temperature is realized in a gas is different from the way temperature is realized in a plasma. As a result, temperature is a higher-level physical property, which is not really identical to any lower level physical property. In general, higher-level

2. Tye, M., "Naturalism and the Mental", *Mind*, 1992, p. 434.

3. Churchland, P.M., *Matter and Consciousness*, Cambridge, Mass., MIT Press, 1984, p. 41.

physical types are not identical with lower ones. The general relationship that obtains between higher-level and lower-level physical properties is one of *realization* or *constitution*. Accordingly, under a monist, materialist ontological view, mental states are *realized* or *constituted* by neural processes, just as neural processes in turn are realized or constituted by molecular processes.

In the context of the monist ontological view described above, explaining the mental becomes the task of providing an account of its semantic properties within a physicalist explanatory framework. In other words, one is in search of an explanation of the intentionality of mental states, which is continuous with the rest of the scientific network of explanations (physical or natural explanations). This project is commonly known as the project of *naturalizing intentionality*. It is the task of explaining how the intentional properties of mental phenomena rise out of non-intentional, physical properties and relations. Naturalists are united by a shared commitment to the *continuity* of mental explanations with the rest of the scientific network of explanations, while they differ among themselves over what form this continuity should take. Naturalists and non-naturalists divide over whether or not such continuity can exist. Naturalistic questions are for example, the following questions: 'How can it be that any part or feature of the universe is a reason for another?' , or 'How can there be norms among the atoms in the void?' and 'How is intentionality compatible with materialism?'⁴.

Understanding what a naturalistic theory of mind entails involves understanding what makes a theory a naturalistic one in the first place and therefore it is included in the wider context of the philosophical debate about naturalism. The point of controversy (what becomes an obstacle to the continuity enterprise) between both naturalist and non-naturalist camps and among the different naturalistic lines of thought themselves is the notion of *normativity*, or else the problem of naturalizing the fact vs. value divide.

The best formulation of this contradiction is exemplified in the *epistemological question of knowledge*: epistemology and science are typically seen as falling on opposite sides of the fact vs. value divide, epistemology on the latter, science on the former, for the following reason:

4. Haugeland, J., *Having Thought: Essays in the Metaphysics of Mind*, Cambridge, Mass., Harvard University Press, 1998, p. 128.

Epistemology, insofar as it is concerned with epistemic value, justification and the truth of scientific propositions, is viewed as a *normative* enterprise. Its role is regulative; it dictates the correct standards/goals of the epistemic enterprise (axiology) and the ways to maximize the realization of epistemic goals (methodology). It is also evaluative of the actual practice of inquiry in relation to the goals/values set by it. Science by contrast, is seen as a theoretical enterprise rendering the world. As Laudan observes, ‘it does not appear to traffic in such normative junctions, it describes and explains the world, but it does not preach about it’⁵. Scientific assertions, concepts and properties are essentially descriptive. They describe and explain in a systematic way the nature of things as they are and generalize and predict how things will turn out to be. Scientific explanations, as a result, tell what *is* the case, not what *ought* to be the case.

In view of the normativity that underlies epistemological discourse and the non-normative character of *episteme* (science), epistemological naturalists have to prove that epistemology is indeed continuous with the rest of scientific explanation by showing how to bridge the discontinuity between values and facts. Since proponents of naturalised epistemology maintain that human knowledge is a natural phenomenon, to be studied by the same scientific techniques we use to study any other aspect of nature, it then follows that any inquiry into epistemic ends should be itself conducted a posteriori, as in any other proper empirical discipline. In contrast with the a priori reflection on the nature of rationality and the a priori foundation of knowledge, suggested by traditional epistemology, naturalistic claims about *metaphysical continuity* entail that epistemic ends should also be grounded in scientific facts.

It is important to make patent at this point that the naturalistic demand for metaphysical continuity between values and facts develops in a *physicalist* context. In this context, physical explanations are prior to any other types of explanations, because the entities and properties that physical science postulates are in some metaphysical sense basic. As Kim describes it, a physicalist is committed to what he calls *causal closure*, or else the fact that ‘if you pick any physical event and trace its causal ancestry or posterity that will never take you outside the physical domain. That is, no causal chain, will cross the boundary between the physical and

5. Laudan, L., “Normative Naturalism”, *Philosophy of Science*, 57, 1990, p. 45.

the non-physical⁶. All physical effects have physical causes, which are adequate to determine all other phenomena. Commitment to causal closure implies commitment to the completeness of physics. Since there are no other forms of causal relation other than physical causation, physics become explanatorily adequate to provide a true, ontologically prior account of all phenomena. Such an ideal language has no need of normative notions, because it is sanctioned with the label of describing the ontology of things, the level where things happen and this is the level of causes.

As a result, values become properties which have an 'idiosyncratic' or 'queer' nature, and therefore should be eliminated. Here is how Mackie expresses that point: 'if there were objective values, then they would be entities or qualities or relations of a very strange sort, utterly different from anything else in the universe. Correspondingly, if we were aware of them, it would have to be by some special faculty of moral perception or intuition, utterly different from our ordinary ways of knowing anything else'⁷. Mackie's argument from queerness is meant to show that value-laden properties defy any kind of natural-scientific explanation⁸.

In this naturalistic context, mental states and cognitive processes are seen as states and processes occurring in natural, physical systems and the language used to explain them is the language of an ideal, scientific community. The project of naturalizing the mental does not have to face a continuity problem (a fact vs. value gap), because what is really at stake for this enterprise is irrelevant to the traditional, normative, epistemological aim. It is rather a matter of a future, successful, scientific account of cognitive functioning, a matter of future, empirical success. This sort of argument has been offered by philosophers such as P.M. Churchland, claiming that given time our folk psychological vocabulary of explaining behaviour in terms of beliefs and desires will be replaced by a proper,

6. Kim, J., "Does the Problem of Mental Causation Generalize?", *Proceedings of the Aristotelian Society*, 1997, p. 282.

7. Mackie, J.L., *Ethics, Inventing Right and Wrong*, New York, Penguin, 1977, p. 38.

8. It is important to note that the argument from queerness rests on the thought that the world is in general value-free so that there are only natural-scientific facts. In this case, it is impossible for values to belong to the same world as the non-evaluative, factual properties. Such position however is question-begging, because it rests on a not-clearly warranted assumption that there are only natural-scientific facts.

neuroscientific account of the brain, namely the underlying mechanisms of belief acquisition⁹. Naturalistic explanations of intentionality become explanations that are deprived of any normative notions, like intensions, cognitive values, means-to-ends, in favour of a scientific account of mechanisms of belief acquisition and meaning formation. The validity of such naturalistic explanations comes from the fact that, anchored into science, they are guaranteed to describe how things are, not how they are supposed to be. As a result, Fodor argues, there is no place for the use of normative, semantic notions in naturalistic mental explanations: ... What is required to relieve the worry is therefore, at a minimum, the framing of naturalistic conditions for representation. That is, what we want at a minimum is something of the form “*R represents S*” is true iff *C* where the vocabulary in which condition *C* is couched contains neither intentional nor semantic expressions¹⁰.

Mental phenomena, however, still remain a puzzle. This becomes very clear in the problem of error or misrepresentation, a problem, which remains inherently recalcitrant to any sort of naturalistic explanation. Respecting the “normativity-free vocabulary” constraint, current philosophical attempts to naturalize intentionality fail to address successfully the issue of misrepresentation. By avoiding the use of normative notions, naturalistic solutions to the problem of misrepresentation stumble on the indeterminacy problem; the problem of offering non-normative criteria for choosing among the possible disjunction of naturalistic conditions (causal relations, indication functions or proper functions) by which intentionality should be explained.

Misrepresentation cases however *can be* explained, if one is allowed to use vocabulary that refers to what the intentional system is supposed to be about; how the intentional system mistook *x* for *x'*, or why the intentional system viewed *x* as *x'*. This type of vocabulary describes some sort of predisposition to behave in some way, an organism's point of view or cognitive aims. It is considered normative, because it refers to the organism's *cognitive values*. It presupposes having a way of talking about what the intentional system *should* look around in the environment when

9. Churchland, P.M., ‘Eliminative Materialism and the Propositional Attitudes’, *Journal of Philosophy*, vol. 78, 1981, pp. 67-90.

10. Fodor, J.A., *A Theory of Content and Other Essays*, Cambridge, Mass., A Bradford Book, MIT Press, 1990, p.32.

trying to survive, or feed itself etc. and having a way of describing how it *ought* to interpret any incoming information in the face of its particular cognitive activity. From the above it becomes apparent that semantic/intentional terms are normative terms in that they appeal to the intentional system's cognitive values in a way that is similar to the way epistemological terms appeal to the knower's epistemological values. In order to determine the cognitive value of a subject one should have a way of 'stipulating' the conditions under which the subject tokens correct thoughts about the world, and having a way of prescribing how it 'ought' to interpret any incoming information in the face of its particular cognitive activity. As a result the naturalistic task of the mental becomes a part of the general task of naturalizing normativity (of bridging the fact vs. value divide) and the indeterminacy problem becomes another formulation of the problem of determining an intentional system's 'privileged' cognitive values in terms of an a 'non-privileged/descriptive account of events.

In the naturalistic context where epistemology and science are a continuous, empirical enterprise, the explanation of intentionality gives rise to the following worry, which Fodor describes as the fear '...that the semantic (and/or the intentional) will prove permanently recalcitrant to integration in the natural order'¹¹. The naturalist fears that failure to place the mental "link" in its proper position in the continuous chain of physical events would threaten his/her ultimate aim of providing a unified science, a science, which can be generally called "the study of nature".

There have developed two ways to deal with such naturalistic worry. These are commonly known as *intentional idealism* and *intentional realism* respectively. Both naturalistic approaches to intentionality have been extensively discussed and criticized in the philosophical literature. There have been raised numerous well-known objections and there have developed equally numerous defences to their positions. It is not the aim of this paper however to offer an analytic presentation of this debate. Rather, this paper will concentrate on providing arguments, which defend the philosophical impetus behind *realist* theories of intentionality. Specifically, the task of the intentional realist is to resist reducing the 'idiosyncratic' properties of the mental to a lower non-intentional level of explanation, by delineating the objective difference underlying physical systems whose responses are mediated by intentional states from those

11. *Ibid*, 32.

that are not. It should be noted however, that the intentional realist, being a naturalist at the same time, has to face the challenge of combining his realist aspirations to the goals of a project that pushes to a diametrically opposed direction. This is the naturalistic task of explaining how the semantic properties of the mental rise out of non-semantic, non-intentional properties and relations.

The first way to argue in favour of a realist account is to present a line of argumentation, which criticizes irrealist approaches for failing to dispense with intentionality.

2. Intentional Irrealism

The 'idiosyncratic' properties of the mental have driven many naturalists towards a rejection of the reality of the intentional properties. From their *irrealist* (naturalistic) point of view, nature is regarded as a causally closed system in which there is no room for intentionality. What is particular about the irrealist doctrine is the way the theorist's epistemological preconceptions inform his strong ontological convictions about the inexistence of intentional properties. In particular, the epistemological bias towards the priority of scientific explanation shapes the irrealist's ontological assertion that physical reality is in fact the way science construes it to be. The concept of reality with which the scientists allegedly operate is the concept of a causally closed system. In effect, the irrealist's epistemological presumptions determine his ontological view of nature as a seamless causal order, which cannot leave room for the emergence of intentionality.

An irrealist, being committed to these epistemological principles, is obliged by virtue of that commitment to take recourse to various theoretical strategies in order to provide a naturalistic account of intentionality. Broadly construed, there have developed two versions of intentional irrealism. The first approach is what Boghossian labels 'the error-theoretic view' and the second approach is the one he labels 'the non-factualist view'¹².

According to the 'error-theoretic view' of intentionality, commonly known as 'eliminative materialism', any utterance of a sentence ascribing intentionality to a person in virtue of ascribing a set of propositional

12. Boghossian, P.A., "The Status of Content", *The Philosophical Review*, 69, 2, 1990, p.158.

attitudes, expresses a *false proposition*. P.M. Churchland argues that any theory, which uses intentional idiom in order to explain our mental properties, is completely inappropriate and constitutes a radically false theory¹³. That is why, he claims, given time, our folk psychological vocabulary of explaining behaviour in terms of beliefs and desires will be replaced by a proper, neuroscientific account of the brain, namely an account of the underlying mechanisms of belief acquisition¹⁴.

The latter 'non-factualist' version of intentional irrealism advocates that our daily use of intentional idiom is practically indispensable, since it serves pragmatic purposes of facilitating prediction of others' behaviour. The most interesting version of this view comes from Dennett. The use of intentional predicates, or what Dennett calls the *intentional stance*, is simply a certain heuristic attitude, an interpretative instrument and as such cannot disclose genuine semantic properties of the system. So what reality beliefs and desires have, Dennett is emphasizing, is purely instrumentalist: 'people really do have beliefs and desires, on my version of folk psychology, just the way they really have centres of gravity and the earth has an Equator'¹⁵. In this sense, the non-factualist view of intentionality shares a common basis to that of the error-theoretic view, since it argues that, despite their pragmatic role in everyday life, predicates, which supposedly refer to semantic properties of an individual's propositional attitudes (beliefs, desires, etc.), do not stand for any genuine properties. In this case, intentionality is a predicate that does not denote a real property, a real fact.

Those two (naturalist) irrealist strands seem to be natural extensions to what is known as Quine's 'double standard'¹⁶. According to this standard, a distinction should be made between two epistemological goals. On one hand, there is the *epistemological* goal of replacing intentional idioms by neurophysiological ones and thus proving 'the emptiness of a science of intentions'. On the other hand, there is the *pragmatic* goal of exhibiting the indispensability of intentional attributions for coping with the demands of daily life, although one is aware at the same time that that this is pure 'make-believe' talk.

13. Churchland, 1981, p. 1.

14. *Ibid.*, p. 67-90.

15. Dennett, D.C., *The Intentional Stance*, Cambridge, Mass., MIT Press, 1987, p. 53.

16. Quine, 1960, p. 221.

It seems very probable that in the fullness of time we might dispense with many of the intentional predicates brought up to explain our cognitive competence, in the same way that the pre-Lavoisier chemical concept of phlogiston in modern physics is a concept devoid of reference and no longer in use. It is also apparent how successful we are in predicting “what a person’s next action will be” in the light of our projection upon that person of certain intentional attitudes -beliefs and desires- that we estimate will lead him to do so. On this first level of analysis, both irrealist doctrines -the error-theoretic and the non-factualist- seem quite obvious and commonsensical.

However, as it will be shown in the rest of this section, intentional irrealism, in its both manifestations, becomes controversial when the full consequences of its principles come into view. For two kinds of related reasons, the error-theoretic view is liable to the following criticisms.

For one, the eliminative materialist claim about the *falsity* of propositional attitudes is ‘circular’: According to eliminative materialism, our folk concepts of beliefs, desires, etc., with their purported semantic properties are best compared to such concepts as the physical and chemical concepts of caloric, phlogiston and other alchemic concepts -i.e., concepts devoid of reference¹⁷. In this error-theoretic view there are no such states as propositional attitudes with semantic properties. When, however, the advocate of eliminative materialism puts forward his hypothesis that our concept of propositional attitudes is much like, for example, the pre-Lavoisier chemical concept of phlogiston, he or she is presumably submitting his belief (that our concept of propositional attitude is much like the concept of phlogiston), so that we can assess it for truth or falsity. Such an attempt to prove the falsity of propositional attitudes is based on beliefs that are already embodied in scientific research. But if this view were right, then it is not clear that the whole procedure would make sense. It is not clear that it would be meaningful for the eliminative materialist to put forth his eliminative materialist belief and for us to examine its truth or falsity. At least, the advocate of the ‘error-theoretic view’ owes us an alternative account of the procedure, which does not presuppose that what he is doing is putting forth his own belief for us to examine its truth or falsity.

17. Churchland, 1984, p. 44.

Furthermore, it seems fair that the eliminativist demand for purification of explanation from intentional categories be extended so as to include requirement that one dispenses with semantic notions like knowledge, inference, proof, truth, falsity, reference, etc. Despite the fact that concepts like truth and reference are objective and trans-phenomenal, they too are fundamentally intentional and they too should be dispensed with. In particular, on the error-theoretic view, any ascription of semantic properties to an individual, that is, any utterance of a sentential structure of the form 'x is P' (where 'P' purports to express or to refer to a semantic property) can never express a true proposition. Following Boghossian¹⁸, let us assume that if there are things having semantic properties, then there are things having truth-conditions. In other words, let us assume that the notion of truth-condition is also a semantic property. Then, one construal of the error-theoretic claim would be that all utterances purporting to ascribe some truth-condition to some representation or other must be false. Such position leads to the following contradicting claims. On the one hand, no utterance ascribing a truth-condition can be true (because no utterance ascribing a semantic property can be true). On the other hand, for any utterance ascribing a truth-condition to be false (as the error theory has it), then any such utterance must have a truth condition.

Although this line of argumentation against the error-theoretic view has been challenged¹⁹ on the basis of the use of the notion of truth-condition, its main strength lies in exhibiting the fundamental impossibility of eliminating semantic properties. The error-theoretic requirement to eliminate intentional terms, like beliefs, desires, etc. was based on the irrealist's epistemological bias towards the priority of scientific explanation and his view that intentional properties have limited prospects of scientific accuracy. Such position however has not been able to come up with a way to eliminate what is particular about intentional

18. Boghossian, 1990, p. 174.

19. Devitt, for example, makes a distinction between two notions of truth-condition: the notion of robust truth-condition and the notion of deflationary truth-condition. His idea is that the eliminative materialist can use the latter notion of truth, the deflationary notion, to say that all utterances ascribing some robust truth-conditions are false. See, Devitt, M., "Transcendentalism About Content", *Pacific Philosophical Quarterly*, 71, 1990, pp. 87-100.

predicates in any discourse (scientific or non). This is what Mohanty describes as the *noetic-noematic correlation*²⁰: The fundamental, intentional property of semantic terms is their correlative structure, that is, the fact that each intentional predicate or state is assigned a meaning, *a noema*. Insofar as intentional states, which are *about* a particular state of affairs, exhibit this correlation-structure, any claim of their elimination seems self-contradictory. As Loewer observes 'it is one thing to be told that *A*'s belief that it is snowing is identical to such and such a neural state (and therefore redundant). It is quite another thing to explain how it is that this neural state is able to represent snow'²¹. That is, even if it were proven possible to reduce folk-psychological talk about beliefs to some other type of naturalistically-defined states, for example, some type of neurophysiological states, still one would need to provide an account of what it is about this type of neurophysiological states that explains their *aboutness*. In other words, it is the *noetic-noematic* properties of semantic concepts that an eliminativist should try to eliminate in order to dispense with semantic/intentional terms altogether.

Dennett's way out of this criticism has been to maintain the use of the notion of intentional terms, but only as a heuristic device. Our intentional talk, he claims, is just a useful story, since it gets predictions right, but it has no hold on the real facts of the matter. According to Dennett, when we describe an organism or an artefact as an intentional system, we are making no commitments about the internal physical workings of the system. To view a system as intentional we must attribute to it a substantial range of beliefs and desires. However, we need not assume that the beliefs and desires attributed to it correspond in any systematic way to internal states, characterized either physically or functionally. Dennett makes the point vivid by bringing up an example involving two robots each designed to be identical to a given person, Mary, whose behaviour is explained with the use of the intentional stance. The first robot, Ruth, is functionally identical to Mary, despite the fact that those two are quite different physically. The second robot, Sally, has a program, which is input-output equivalent to Ruth's, though it uses a quite different computational strategy. Dennett argues that at the level of common-sense descriptions of their actions, all three will behave alike. In this case he says that '...the

20. Mohanty, J.N., "Intentionality, Causality and Holism", *Synthese* 61, 1984, p. 24.

21. Loewer, B., "From Information to Intentionality", *Synthese* 70, 1987, p. 287.

ascription of all Mary's beliefs and desires (etc.) to Sally will be just as predictive as their ascription to Ruth so far as prediction of action goes²². So, when we adopt the intentional stance, Mary and the two robots are indistinguishable. In effect, to attribute propositional attitudes to a system is *not* to disclose or reveal genuine semantic properties of the system. Rather, it consists in adopting a certain heuristic *stance*, which serves pragmatic goals: not so much so explaining the behaviour of the system, as facilitating the prediction of its behaviour. In this case, Dennett argues '*all there is to being a true believer is being a system whose behaviour is reliably predictable via the intentional strategy*'²³.

The first thing to observe with regard to Dennett's pragmatism is that it seems too fortuitous to be credible that our folk-psychological accounts possess immense predictive power, yet at the same time they are not a true, factual picture of anything. When I say that Mary will go home now because she hates crowded areas and when, within a minute or two after I say that, Mary leaves the cinema in order to go home, this is a very precise and true prediction that I have made. It must reflect psychological kinds of some sort, otherwise it looks as if I have made a true prediction in psychology on the basis of a false or 'make-believe' picture of the relevant facts. It looks as though I have made a successful prediction without any firm basis. If that were so, one would have to say that it was quite magical and mysterious how I ever did arrive at any true prediction by employing the intentional stance and more generally, how humans ever did generate their intentional explanations and predictions.

Attributing predictive success on the basis of pragmatic considerations, like the fact that in the past such predictions have turned out to be true, is to push the whole demand for an explanation of the extraordinary success of the predictions made from the intentional stance back into the distant past. It is to base a groundless prediction upon a preceding chain of other groundless predictions, where each individual prediction in the chain depends for its justification on the long chain of similar predictions standing behind it. In effect, to do so is to offer an infinite regress of unfounded but successful predictions as the explanation of success of the most recent groundless prediction made.

22. Dennett, D.C., *Brainstorms*, Montgomery, Vt., Bradford Books, 1978, p. 105.

23. Dennett, 1987, p. 29.

Having in mind those considerations, Dennett attempts to justify the predictive power of intentional stance by claiming that its success is a result of the trial and error of evolution. In his own words ‘we, the reason-representers, the self-representers, are a late and specialized product [of evolution]. What this representation of our reasons gives us is foresight: the real-time anticipatory power that Mother Nature wholly lacks’²⁴. Thus, in Dennett’s view the answer to the question of why the intentional strategy works is that evolution has designed human beings to be rational. Or to put it in other words, the fact that human capacities are the products of a long evolutionary process guarantees that the intentional strategy works. Dennett seems to be admitting that intentional strategy works because evolution has designed human beings to be rational. For instance, Dennett’s position would lead someone to say that evolution has designed humans to say to themselves things as ‘I want to avoid scurvy, and if I believe that a daily intake of vitamin C will ward off scurvy, then I want to have an adequate daily intake of vitamin C’. But this looks as if humans are designed to operate in terms of want-belief (or belief-desire type of reasoning).

Ultimately thus Dennett’s position cannot avoid the implication that human heads must have real contents. For it is at least implicit in Dennett’s account that our ‘intentional stance talk’ is talk based not just on the usual behaviour of humans in given environmental circumstances. It is talk based on the *presumed perceptual input* or *presumed mental content* of their intentional states. For when, via the use of intentional stance, we explain a person’s behaviour, what we do is attribute to this person a belief *that so-and-so* and a desire *that such-and-such*. We attribute content to his beliefs and desires. It is this *content-attribution*, which is the essence of our ordinary talk about propositional attitudes and ultimately that, which gives it its explanatory power. For example, what involves attributing to someone a simple perceptual belief is to attribute to this someone a particular content. We interpret the person’s behaviour in terms of the information he seems to have gathered by means of his senses and in terms of the content of his already existing intentional attitudes and finally, in terms of the behavioural response that he has made on the basis of that content. What interpretation we can make about some person,

24. *Ibid*, p. 317-318.

what predictions we can make about what he will do or about what will happen to him in the end depend on our previous assumption about him bearing contentful mental states. Putting our folk psychological ascriptions in this way should make us see that they imply acceptance of the claim that the human brain is a content utilizing device. Folk psychological explanations work because of the presumption that humans operate as 'content-processing' engines of some sort. Whether they operate in just the way our folk psychology describes them or not is *not* what is important.

The above considerations are meant to show that it is very difficult to dispense with intentionality. On such grounds there has developed a second version of naturalism, commonly known as *intentional realism*. Contrary to its irrealist counterpart, this naturalistic doctrine advocates that a realistic account of intentionality is possible. The impetus behind a realist naturalistic account of intentionality is to provide a theory of content that explains the irreducible, genuine intentional properties of propositional attitudes.

3. Intentionality as a Genuine Property

Intentional realism involves placing intentionality firmly in the head. Proponents of a realist account of intentionality load the mind with *representations*, that is, states of systems, which satisfy Brentano's criterion of *aboutness*. Beliefs, desires, hopes, intentions and all other types of propositional attitudes are representational, that is, each token of any of these state-types *is about* something, it represents something or another. In his paper *Propositional Attitudes*, Fodor, a prominent realist about intentionality, argues that there are a number of a priori conditions, which a theory of propositional attitudes ought to meet. He argues that 'considered together, these conditions pretty clearly demand a treatment of propositional attitudes as relations between organisms and *internal representations*'²⁵. Imagine the following situation, where a person describes his friend's behaviour in the following way: "My friend decided not to wait anymore at the bus stop but rather take a taxi, because she

25. Fodor, J.A., "Propositional Attitudes", in N. Block (ed.), *Readings in Philosophy of Psychology*, Cambridge, Mass., Harvard University Press, 1981, p. 45.

wanted to get to work without delay and she believed that the bus was already late". This form of folk-psychological talk that appeals to beliefs and desires in order to explain a person's behaviour is the intentionalist realist's point of departure. In this realist view, beliefs and desires are real processes in a person's brain, processes, which involve operations over encoded propositional contents. A naturalist who subscribes to intentional realism is committed to the view that there really are propositional attitude states with genuine intentional properties. For that reason, full-fledged beliefs and desires (or states like them) are to figure in the best explanation of human and higher-level animal behaviour.

A naturalist, who is considered a realist about intentionality, must be able to put forward arguments that show why intentional properties are genuine properties. What this means is that a realist should be able to explain the objective difference underlying physical systems whose responses are mediated by content-bearing states from those that are not mediated. In this case, the intentionality of states like beliefs and desires must be shown to entail a distinctive set of semantic powers that cannot be reduced to a lower, non-intentional level of explanation. Thus, in the previous example involving Mary and the two robots, the realist should be able to argue that despite the apparent similarity in explaining the behaviour of those three entities and the success of the intentional stance to predict their behaviour, still Mary, because of her ability to employ contentful states, is in an essential way different from the other two entities. The aim of this final section is to provide some arguments that show that a system's possessing genuine intentional properties provides it with the ability to do things, which physical systems lacking them can't.

First, one important feature of propositional-attitude expressions is their 'referential opacity'. The realist's appeal to the existence of representational states in the subject's brain accounts for referential opacity in the following way: Representations not only have the property of being about things in the world, but they also have the property of being perspective-relative. As Lloyd says 'no representation represents all of the properties of its proper object. Instead, representations ascribe selected properties to their objects, representing some aspects only'²⁶. Two representations may represent the same object, but do so from different perspectives. In effect, one may be prevented from substituting co-referential representations into different intentional contexts, because

those contexts determine the perspective from which the two intentional states represent the same object or state of affairs. Thus, proponents of a realist account of intentionality argue that the perspective-sensitive properties of representational states provide the origin of one of the properties central to intentionality, namely referential opacity.

Secondly, no non-mentalistic account, i.e., no account that doesn't assume intentional realism, can explain the productivity and systematicity of thought. It is difficult to see how any physical mechanisms could be sensitive in the way humans are to such an extraordinary range of arbitrary, non-physical and non-local properties of the world, such as being a Rembrandt portrait, being a person's favourite red blouse, being a collapsing star. These sensitivities are particularly impressive given that they seem to be *productive* and *systematic*. People seem capable of discriminating a potentially infinite class of distinct stimuli of increasing logical complexity (productivity). As Fodor argues 'there is a (potentially) infinite set of, for example, belief-state types, each with its distinctive intentional object and its distinctive causal role'²⁷. This is immediately explicable on the assumption that belief states have combinatorial structure; that they are somehow built up out of elements and the intentional object and causal role of each such state depends on what elements it contains and how they are put together'. People are also capable of discriminating different logical permutations (systematicity). If one can discriminate something of the form 'if q then p', then one can discriminate 'if p then q'. Systematicity involves facts such as that no native speaker comes to understand the form of words 'John loves Mary' except as he *also* comes to understand the form of words 'Mary loves John'. It is difficult to see how any physical mechanism could be sensitive in this way to such an extraordinary range of arbitrary properties of the world without exploiting internal processes of logical combination, inference, and hypothesis confirmation that essentially involve intentional properties. Proponents of a realist theory of intentionality advocate that the appeal to representational states can provide the grounds for the systematicity and productivity of our intentional states, because representations are *articulate*: representations can have parts which are themselves

26. Lloyd, D., "Mental Representation From the Bottom Up", *Synthese* 70, 1987, p. 27.

27. Fodor, J.A., *Psychosemantics: The Problem of Meaning in the Philosophy of Mind*, Cambridge, Mass., The MIT Press, 1987, p. 147.

representational. What is more, individual representations can be combined into more complex representations. Some representations however must be atomic and therefore indivisible into further representations, in order to escape the consequences of infinitesimal representations.

Finally, propositional attitudes have executive responsibilities. In other words, they are causally implicated in the production of behaviour. In the example of Mary, who ended up taking a taxi to go to work, her action was an effect/outcome of her previous beliefs and desires. Her intentional attitudes had causal force. They determined the course of her behaviour. In general, an individual's beliefs have, as we might say, a hand on the steering wheel: they guide one's intentional behaviour. They have motivational force in regard to one's actions and explanatory force, including making sense of one's actions to oneself. A realist's appeal to the existence of representations inside a person's brain can explain the causal efficacy of intentional states. Being physical states of a system, representations have effects. Some of the effects of representations must arise in virtue of their encoding of content. That is, organisms or systems are able to use representations to mediate behavioural responses, which vary with the content of the representations. Those systems possess the capacity either to interpret representations or to respond as though they were interpreting them and act according to that interpretation. It is, as Fodor would point out, as if a person really has inside oneself, inscribed in the brain, a real operative sentence. In Fodor's account, this means that this person has a real language of the brain, a language of thought, in which the inscribing takes place. Thus, when that person believes that 'such-and-such-is-the-case', this must involve some part of one's brain operating over some sentence which expresses that 'such-and-such-is-the-case' and which causes a person to act in a particular way in virtue of the content of that sentence.

To recapitulate, there are several properties of our mental workings, like the referential opacity of our beliefs about the world, the productivity and systematicity of our thoughts and finally the causal efficacy of intentional attitudes, that provide *prima facie* grounds for the realist's claim that there really are intentional/representational states in one's head (states like beliefs, desires) with genuine intentional properties.

Conclusion

An intentional realist who subscribes to physicalism is committed to the view that the semantic properties of an individual's propositional attitudes are genuine properties of an individual's brain. That is, semantic properties do not occur as the result of an interpreter's projection onto a system. If semantic properties are genuine properties, then having a mind must make a difference -a causal difference. Minded systems must be able to do things, which systems lacking a mind are unable to do. So the research program of intentional realism is twofold: On the one hand, the intentional realist needs to show that the fact that minds occupy states with semantic properties can explain why physical systems having a mind can do things, which physical systems without a mind can't do. On the other hand, the intentional realist, being a naturalist at the same time, must show how an entirely physical system could nevertheless exhibit intentional states. It is important to note however, that these two projects push in diametrically opposed directions. While the naturalization project works on the idea that the mind is just part of nature and therefore should fall under the umbrella of other natural sciences, the intentional realism project is fuelled by the intuition that there really is something special about minds, that differentiates them from other natural things.

Π ε ρ ί λ η ψ η

Νατουραλισμός (naturalism) είναι το φιλοσοφικό πλαίσιο σύμφωνα με το οποίο η επιστημολογία και η επιστήμη αποτελούν ένα συνεχές, εμπειρικό έγχειρμα. Μέσα στο πλαίσιο αυτό η εξήγηση της προθετικότητας της νόησης (intentionality) καθίστατο προβληματική, καθώς μοιάζει αδύνατη η ενσωμάτωση των ιδιότυπων σημασιολογικών της ιδιοτήτων μέσα στη φυσική τάξη. Μια τέτοιου είδους άποτυχία ένταξης των νοητικών φαινομένων στο επίπεδο των φυσικών γεγονότων απειλεί τον απώτερο σκοπό κάθε νατουραλιστή, που είναι η ένοποίηση όλων των επιστημονικών πεδίων σε μια ολοκληρωμένη επιστήμη, ή όποια γενικώς θα αποκαλείται 'ή επιστήμη της φύσης'.

Οί ιδιότυπες 'σημασιολογικές ιδιότητες της νόησης οδήγησαν μια μερίδα νατουραλιστών στο συμπέρασμα ότι η προθετικότητα δεν είναι ένα πραγματικό φαινόμενο. Κατά την άποψή τους, η φύση αποτελεί ένα κλειστό σύστημα αιτιακών σχέσεων, μέσα στο οποίο δεν υπάρχει

χώρος για φαινόμενα όπως η προθετικότητα. Έπομένως, ο *έπιστημολογικός* στόχος ενός νατουραλιστή, ο οποίος είναι δεσμευμένος από τις *οντολογικές* του πεποιθήσεις περί προτεραιότητας των φυσικών κατηγοριών, είναι να δείξει με ποιό τρόπο οι προθετικές κατηγορίες μπορούν να αντικατασταθούν από νευροφυσιολογικές κατηγορίες. Επίσης, ο *πραγματοστικός* στόχος του είναι να εξηγήσει ότι, αν και στις καθημερινές πρακτικές των ανθρώπων η χρήση προθετικών όρων είναι απαραίτητη για την έρμηνεία συμπεριφορών, παρ' όλα αυτά η εξήγηση αυτή είναι πλαστή, μια και δεν βασίζεται σε επιστημονικά δεδομένα και επομένως είναι απολύτως εσφαλμένη.

Σκοπός του παρόντος άρθρου είναι να παραθέσει επιχειρήματα τα οποία καταδεικνύουν πώς είναι αδύνατη η εξάλειψη της προθετικότητας από το πλαίσιο εξήγησης των νοητικών φαινομένων και η αντικατάστασή της από άλλους επιστημονικά αποδεκτούς όρους. Ο λόγος έγκειται στην σχέση *νόησης-νοήματος*. Κάθε προθετικός όρος προσδιορίζεται από το νόημα ή αλλιώς την έννοιά του. Με άλλα λόγια, χαρακτηριστικό κάθε νοητικού φαινομένου είναι η προθετική του σχέση, δηλαδή η ιδιότητά του να κατευθύνεται προς ήν αναφέρεται σε κάτι εκτός εαυτού. Αυτό σημαίνει ότι ακόμα κι αν στο μέλλον αποδειχθή δυνατό να αντικατασταθῇ η χρήση προθετικών όρων, όπως πεποίθηση, επιθυμία, φόβος, κ.λπ., από αντίστοιχους νευροφυσιολογικούς όρους, η ανάγκη εξήγησης της προθετικής τους σχέσης θα εξακολουθήσει να υφίσταται. Και αυτό γιατί προθετικότητα είναι εκείνη η *πραγματική* ιδιότητα που διαφοροποιεί τα νοητικά από τα φυσικά φαινόμενα.

Μέσα σε αυτό το θεωρητικό πλαίσιο, το έργο ενός νατουραλιστή αποκτᾷ τὸν ἐξῆς διττὸ στόχο: ἀπὸ τῆς μιάς, νὰ ὑποστηρίξῃ ὅτι οἱ προθετικὲς ιδιότητες τῆς νόησης εἶναι πραγματικὲς ιδιότητες, οἱ ὁποῖες προσδίδουν στὰ νοήματα ὄντα ἰκανότητες ποὺ ἀπουσιάζουν ἀπὸ ἄλλους φυσικοὺς ὁργανισμοὺς καὶ ἀπὸ τὴν ἄλλη νὰ ἐξηγήσῃ μὲ ποιό τρόπο αὐτὲς οἱ ιδιότητες ἀναπτύσσονται μέσα σ' ἓνα κόσμο φυσικῶν γεγονότων. Εἶναι σημαντικό νὰ τονίσωμε ὅτι τὰ δύο αὐτὰ προγράμματα φαίνονται ἐκ πρώτης ὄψεως ἀντιδιαμετρικά. Ὁ νατουραλιστὴς πρέπει νὰ δείξῃ τόσο ὅτι ὁ νοῦς εἶναι μέρος τῆς φύσης καὶ γι' αὐτὸ τὸν λόγο ἡ μελέτη του ἀνήκει στὸ γενικὸ πλαίσιο μιᾶς ἐνοποιημένης ἐπιστήμης τῆς φύσης, ὅσο καὶ ὅτι οἱ ιδιότητες νοῦ εἶναι πραγματικὲς καὶ διαφοροποιοῦν τὰ ὄντα ποὺ τὶς κατέχουν ἀπὸ τὰ ὑπόλοιπα φυσικὰ ὄντα.