

SOME PROBLEMS FOR FODOR'S THEORY OF CONTENT

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In this paper, I will discuss Jerry A. Fodor's theory of content. I will first expose it and will then point to some problems for it. More specifically, I will claim that Fodor's theory can't live up to standards Fodor sets for rival theories.

1. *Introduction*

It is well known that both linguistic expressions and mental states have the peculiar property of intentionality or 'aboutness'. A word, a sentence, a thought or a desire can all be about something else: 'Paris', 'Paris is in France', a thought of Paris and the desire not to be in Paris are all about the French capital.

A question that has puzzled philosophers for ages is what makes this aboutness possible: what makes it possible for one thing (a linguistic expression or a thought) to stand for another thing (or a set of things or even something abstract).

In the beginning of the century, Franz Brentano proposed the theory that all intentionality (in particular the intentionality of linguistic expressions) was derived from the intentionality of mental states. That kind of intentionality he regarded as a primitive irreducible mental phenomenon. Indeed, in his view, intentionality is what divides the mental from the physical: no description or explanation of it can be given in the terms in which physical phenomena are described or explained.

Odd though it may seem at first sight, a version of Brentano's thesis has been defended in the influential writings of W.V.O. Quine, a dedicated physicalist. Though he does not accept Brentano's dualism, Quine

also has argued that talk about linguistic meaning, or about the content of mental states, cannot be translated in talk that is used to describe physical things. According to Quine, there is no way to reduce intentional speech to nonintentional speech: there is no breaking out of the intentional circle. Instead of taking this as evidence for the existence of a separate realm of the mental, however, Quine sees this as a symptom of the fact that there is something definitely wrong with intentional idiom. He proposes that talk about meaning and mental content, should not be taken seriously for scientific purposes, indeed that it should be eliminated from the scientific point of view. Quine's position, which has attracted many philosophers, therefore has been called eliminativism (1).

A large part of recent philosophy of mind and language consists in efforts to steer a middle course between Brentano and Quine. Many philosophers nowadays, want to take intentional idiom seriously (pace Quine), but want to find a place for it in the natural order (pace Brentano). Perhaps the most influential of these is Jerry A. Fodor, whose work could indeed be described as a sustained effort to provide the sort of treatment of intentional idiom that Brentano and Quine argued could not be given.

Fodor's theory of intentionality can be seen as existing of two parts. First Fodor has proposed a theory about propositional attitudes, in which they are interpreted as attitudes towards sentences of a 'language of thought'. More recently, he has developed a theory of the content, or meaning, of the expressions that figure in the mental language.

This paper will mainly be concerned with Fodor's theory of content. This theory cannot be understood without knowing Fodor's ideas about propositional attitudes, because the nature of the theory of content is determined by implications of the theory of propositional attitudes. Therefore I will first sketch the latter.

2. *Fodor's Commitment to Propositional Attitude Psychology (2)*

Fodor believes that physicalism is true. There is no need for our present purposes to treat this problematic issue beyond pointing out that it implies that all events in the universe are ultimately physical events. Thus, from his point of view, there is no room for irreducible intentionality.

Next, Fodor takes intentional idiom, and especially propositional

attitude talk, not simply seriously, but VERY seriously. According to him, the paradigm case of intentional idiom is to be found in the ascription of propositional attitudes, which are, roughly, specifications of an attitude of a subject towards a sentence (or a proposition, which gives the content of the propositional attitude). Examples are: 'John believes the girl languishes in Latvia', 'She desires to languish in Latvia' or 'Most people fear that they will awaken and languish in Latvia'. Now Fodor thinks that such ascription of propositional attitudes are the main vehicles of a lay psychology, or folk psychology, by means of which we describe, explain and predict each others behaviour. This folk theory, of which we all have an implicit mastery, contains such 'laws as 'if S desires P, and S knows Q is a means towards achieving P, then, ceteris paribus, S will do Q', or 'if S promises P, then S will do P'.

Fodor thinks this folk psychology is more than superficially analogous to a real scientific theory. He thinks the folk theory has the same deductive structure as a real scientific theory, in that it casts its underlying generalisations in terms of unobservables (the propositional attitudes) which are not directly but only via complex causal interactions related to observable behaviour.

What strikes Fodor as the most remarkable aspect of this theory, is that it works so well: it allows us very successfully to explain and predict each other's behaviour. Moreover, Fodor contends there is at present no reason to expect that there will emerge a different kind of psychology that will do better than the folk theory.

Fodor believes this success of folk psychology, together with the absence of a serious rival theory that could do the same explanatory work, to allow, and even compel one to infer to the existence and the causal efficacy of its postulated unobservables. More precisely, he believes that there are psychological states that have content and that are involved in causal patterns that make the implicit generalisations of the folk theory true.

Fodor thinks this implies that there exists a system of inner representations a language of thought such that, for every propositional attitude of the organism, there is an inner mental representation towards which the organism has to stand in a certain computational relation. The inner representation has to have the same content as the proposition ascribed in the propositional attitude, and the kind of attitude that is spoken of in the propositional attitude (whether it is a belief, a desire or a hope or any

other) has to be reflected in different kinds of computational relations the organism has to have vis à vis the representation. What this differences in computational relations precisely amount to, Fodor is not exactly clear about. What does transpire, however, and what is sufficient for our present purposes, is that the type of the computational relation constrains the way the inner representation the relation is had towards interacts with other representations and with behaviour. As said, these mental representations have to stand in causal interactions with another and with behaviour in a way that honours the generalisations of folk psychology.

A point that will turn out to be important for the rest of this paper, is that Fodor makes a distinction between two kinds of laws of the propositional attitude psychology, a distinction between what I will call quantifying laws and content sensitive laws. We will see that Fodor accepts metaphysical functionalism with regard to the first kind of laws, but not with regard to the second kind of laws.

For quite a time now, functionalism is the prevailing doctrine about the nature of mental states. Functionalists say that the essence of mental states does not lie in their specific material constitution, but in the relevant set of abstract causal relations they entertain with other mental states, with stimulus conditions and with behavioural outputs. Thus, the identity conditions according to which mental states are typeindividuated, do mention causal role but abstract away from physical specification. Fodor is committed to functionalism, but only to a very specific, restricted version of it. In order to understand this, we will have to discuss a difference he makes between two kinds of laws of the propositional attitude psychology.

As said, Fodor thinks that mental states like beliefs and the other propositional attitudes are the theoretical constructs of folk psychology, and that they are defined by implicit laws which relate them counterfactually to other mental states, to stimulus conditions and to behavioural outputs.

This means Fodor believes that mental state types are type individuated "by reference to the generalizations that subsume them", which leads him to state: "On a functionalist analysis, a pair of mental states will be type distinct just in case there are psychological generalizations that subsume one but not the other." (PS, p. 70). The point Fodor makes implies that in order for two individuals to be believers, the same set of laws of the (propositional attitude) psychology has to be true of them. There is a

peculiar aspect Fodor thinks to mark most of the functional laws of folk psychology, namely that they treat contents (the P and Q's in 'S believes that P', or 'S desires that Q') as variables, over which is quantified. Here is a crucial passage, in which Fodor explains what he means by this:

"Well, my point is that (...) psychological theories typically achieve generality by quantifying over the objects of the attitudes. In consequence, many of the most powerful psychological generalizations don't care about content per se; what they care about is only relations of identity and difference of content.

Suppose that the 'practical syllogism' is more or less true (as, after all, it surely is). What it says is that if you want that P and you believe that notP unless Q, then all else being equal, you try to bring it about that Q for any P and Q whatever. So formulated, the generalization purports to apply to all beliefs and wants, regardless of their contents. So the taxonomy of mental states that it implies distinguishes believing from wanting, but not believing that such and such from believing that so and so. If, as I rather suspect, the best candidates for taxonomically relevant psychological generalizations are like this, then Psychofunctionalism can't reconstruct individuation by content; the psychological generalizations that it relies upon for its criteria of individuation are, de facto, insufficiently fine grained" (PS, p. 70).

Notice that Fodor qualifies his claims about the laws of propositional attitude psychology quantifying over the objects of the attitudes: they only do it 'typically', and it is only true of 'the most powerful psychological generalizations', or 'the best candidates for taxonomically relevant psychological generalizations'.

What this qualifications seem to point to, is that Fodor thinks there are also laws of propositional attitude psychology that treat content in another way, viz. that are sensitive to specific contents. And indeed, this comes out in a passage like the following:

"Presumably an event (e.g. the production of behavior by some organism) would fall within the domain of such a <a propositional attitude> psychology in virtue of instantiating one of its generalizations. And presumably such generalizations would apply to an organism at a time in virtue of the intentional state(s) that the organism is in at the time. The way it ought to go is that the theory says things like: From any organism that believes such and such and desires so and so, you get behaviors of the type ...blah.' You can, therefore, use the theory to predict

that this organism x will give behavior of the type ...blah if you can identify this x as believing such and such and desiring so and so. This is just a long form of the truism that one way that intentional psychologies achieve generality is by quantifying over all the organisms that are in a specified intentional state." (PS, pp. 5657) (Notice that in this passage Fodor apparently claims in contradiction with the passages quoted above that this kind of laws (i.e. contentsensitive) are typical for the propositional attitude psychology.)

- "... laws that quantify into opaque contexts, e.g.: $(x) (y)$ (if x believes that y is dangerous then *ceteris paribus* x tries to avoid y) ... purport to generalize over organisms in virtue of the shared intentional contents of their mental states." (TC I, note 2).

The reader should notice that the law in the last quote, despite the appearance of variables in it, is sensitive to the content of the believed proposition: it is because the belief has the specific believed content that y is dangerous, that x will try to avoid it.

Thus there seem to be two kinds of laws of propositional attitude psychology, which I will call quantifying laws and contentsensitive laws respectively. The former formulate generalizations between beliefs, desires and other propositional attitudes, by quantifying over contents, while the latter formulate generalizations that hold in virtue of the specific contents of propositional attitudes. In order to instantiate a quantifying law, one has to have some propositional attitudes, of which the content is not further specified, but that interact in a certain way; in order to instantiate a content-sensitive law, one has to have one or more propositional attitude(s), with specific content(s). According to Fodor, what I call the quantifying laws stipulate the functional type individuating conditions that determine what it is to be a belief, a desire, or any other propositional attitude. He thinks functionalism with regard to attitude types, as functionally defined by these quantifying laws, is a correct doctrine. This is not true, however, of functionalism with regard to the more fine grained content sensitive laws. Thus he writes: "... all you need is the claim that being a belief is a matter of having the right connections to inputs, outputs, and other mental states. What you don't need (...) is the much stronger claim that being the belief that P , being a belief that has a certain content, is a matter of having the right connections to inputs, outputs, and other mental states." (PS, p. 69)

The doctrine Fodor refers to at the end of this quote, and which he

dislikes, is known as functional role semantics (3). Functional role semantics applies functionalism to the contents of mental representations. It interprets contents as the functional role of (physically realized) mental representations that are typeindividuated by reference to their stimulus conditions, their relations to other representations, and to behavioural outputs. So for example, according to functional role semantics, your mental representation 'dog' is an element of a network, in which, most probably, also the representations 'animal', 'animate thing', 'pet', 'cat', 'poodle', dog stimuli and dog related behaviours, figure in quite definite relationships with your representation 'dog'. The links a mental representation has determines how it is involved in perception, thought, action and inference. In our terminology, it could be said that functional role semantics tells us that the content of a mental expression is given by a (probably very very) large set of content sensitive laws, which specify relations between mental states with specific contents with other such states, with stimuli and with behaviour. An example of such a law could be: 'If your expression token 'dog' gets activated, there is some probability that your expression token 'animal' might get activated', or 'If you percieve a poodle, you are likely to infer that you see a dog'. Because functional role semantics is a functionalist doctrine, it implies that the identity conditions for being a mental expression with a specific content C are given by the set of laws that the expression figures in.

What Fodor thinks is terrible about making the content of one representation depend upon its relations with other representations and with behaviour, which he calls semantic holism, is that it seems to him to imply very severe conditions on identity of content. For he thinks it implies that, for two persons ever to share one concept, they should share all of their concepts (and all of the links between them), which means the persons would have to be identical. The only way to combine semantic holism or functional role semantics, with strict identity conditions for sameness of content, Fodor thinks, would be to regard only some of the links in the network as relevant to content determination. This however, Fodor feels, would commit one to a synthetic/analytic distinction, which, as Fodor agrees with Quine, is undefendable (4).

If semantic holism were true, Fodor thinks the applicability of the content sensitive laws of propositional attitude psychology would become impossible, and eliminativism would be true. He writes:

"One important way that psychological laws achieve generality is by

quantifying over all the organisms that are in a specified mental state (all the organisms that believe that P, or intend that Q, or whatever). But holism implies that very many mental states must be shared if any of them are. So the more holistic the mind is, the more similar the mental lives of two organisms (or two time slices of the same organism) have to be in order that the same psychological laws should subsume them both. At the limit of holism, two minds share any of their intentional states only if they share all of them. And since, of course, no two minds ever do share all of their intentional states, the more (ii) <that intentional states are intrinsically holistic> is true, the more the putative generalizations of intentional psychology fail, de facto, to generalize.” (TC, p. 5152).

It is crucial to note that meaning holism does not have to interfere with the applicability of what I have called the quantifying laws. Fodor concedes this, cfr.: “Some intentional laws constrain the relations among the states of a given organism at a given time (e.g. *ceteris paribus*, if you believe P&Q then you believe P). These laws could generalize even over organisms that had none of their mental states in common; in the present case, there’s no P or Q that two organisms both have to believe in order that both should fall under the law.” (TC I, note 2). The reader should convince himself that the same goes also for the practical syllogism, (cfr. the quote from p. 70 of *Psychosemantics*, given above), ‘if you want that P and you believe that not-P unless Q, then all else being equal, you try to bring it about that Q for any P and Q whatever’. It is clear that the worst kind of meaning holism could be true, implying that no two persons would ever share a belief, yet the practical syllogism could be true of both of them. Indeed, the fact that meaning holism does not interfere with the application of the quantifying laws, is essential to Fodor’s thesis that you can have functionalism without functional role semantics, or functionalism about belief (and the other attitudes) without functionalism about belief content .

To summarize: Fodor thinks that there are two kinds of laws of propositional attitude psychology, which I have called quantifying laws and content sensitive laws respectively. The former lay down identity conditions for attitude types (conditions for what it is to be a belief, a desire, etc...), while the latter define identity conditions for content. Fodor is committed to metaphysical functionalism with regard to attitude types, but not with regard to contents. He thinks functionalism with regard to content is pernicious, because in his view it leads to eliminativism because

it makes the applicability of the content sensitive laws of propositional attitude psychology impossible.

3. *The Theory of Content* (5)

In his earlier work (roughly from the midseventies to the mideighties), Fodor has devoted most of his attention to the structure — one could say the syntax — of the language of thought (6). His main point was to argue that the system of inner representations had the same structural features as a language — a hierarchical recursive structure that allows the systematic composition of an infinity of compound expressions from a finite vocabulary and rule set. In recent years however, he has directed his efforts towards the problem of the content of the inner representations.

3.1. three constraints

There are three constraints Fodor wants his theory to honour: it has to be physicalistic, it has to be atomistic, and it has to ascribe determinate content

a) physicalism: This constraint is consonant with Fodor's rejection of dualism. Fodor takes its most important implication to be that the analysis of the content of the inner representations should be carried out in nonintentional idiom. For if there were no way of explaining content in such idiom, this could serve as an argument for the existence of a separate realm of the mental (remember Brentano). If however, the intentional can be explained in terms of the nonintentional, this route to dualism is blocked.

b) atomism: whatever entity has content, must have this content independently of the having of whichever content of any other entity. The reason Fodor wants to adhere to this constraint, is his eagerness to avoid meaning holism, which he sees as a route to eliminativism.

c) determinacy: for Fodor, if any entity has to have content, it has to be a definite, perfectly determinate matter exactly which content it has. Fodor is seldom explicit about this constraint, but, as we shall see, its looms large in his rejection of rival theories. More specifically, we shall see it is the reason why he rejects teleological accounts of content. This constraint owes its importance probably to the fact that indeterminacy of

content seems to implicate eliminativism about folk psychology, and thus about the propositional attitudes. For if it is not a completely determinate matter which content a mental state has, it is not clear which propositional attitude should be ascribed. Thereby, one loses one's handle on the tools of propositional attitude psychology, and it becomes inapplicable.

Remember that Fodor is committed to functionalism with regard to attitude types. Combined with semantic atomism, this implies that in order for two persons to believe P, two conditions have to be in order:

1) in order for them to believe, the quantifying laws of the propositional attitude psychology have to be true of them

2) in order for them to believe that P, P (or rather, each of the concepts which constitute P) has to be a physicalistically and atomistically specifiable and determinate content,

3.2. the theory

The way Fodor tries to honour his constraints, is by combining a denotational semantics with the reduction of content to causal patterns. The content of a representation then is the property it expresses, and it comes to express that property by some — to be specified — sort of causal contact it has (or could have) with it.

By embracing a denotational semantics, Fodor commits himself to a world of properties. He assumes this not only to be legitimate and not in conflict with physicalism, he also assumes that these properties are perfectly determinate. It can be easily seen that if he can explain the having of content by a sort of causal relation between an internal expression token and such a determinate property, he will have honoured his three constraints. If properties are allowed in a physicalist worldview — which Fodor takes to be the case — a fortiori will be the relation of causation. Determinacy is gotten by straightforwardly assuming it. Moreover, *prima facie* there seems to be no objection against the view that the causal transactions between properties and internal expression tokens be atomistic in the sense that for any property-internal expression token link, one can at least imagine the link to be in place without any other such link being in place. For example, one can imagine a causal relation between dogs and 'dog'-tokens to be in place without the animal-'animal' relation being in place.

So, at first sight, Fodor's theory simply could be: Representation token

R expresses property P iff P causes R is a law. However, Fodor sees a major problem for this simple theory. For any representation that we feel to have a determinate content, is caused not only by instantiations of the property that it denotes, but also by things that instantiate properties we feel not to be in its denotation. A horse might, on a dark night, cause the 'cow' token to become active. So, the token 'cow' is not only caused by cows, but also by horses on dark nights. This causal relation between horses on dark nights and 'cow'-tokens might even be lawful. But now the simple theory has the annoying property that in this particular case, it specifies as the content of 'cow': cow or horse on a dark night. This problem that the simple theory implies, Fodor calls the disjunction problem.

Fodor points out that a simple and intuitive way out of this problem, is to distinguish between two sorts of situations — type one situations and type two situations — and to stipulate that only the causal patterns in one of these situations are to count as content determining. A natural way to try to obtain such a distinction between situation types, is to appeal to evolutionary considerations (in any case, it is the way Fodor devotes most attention to) (7). To stick with the cow-example, one could identify the type one situations — those in which causation is to count as determining content — as the ecologically normal situations. Ecological normal situations could then further be specified as those conditions under which the (perceptual) mechanisms that mediate the relation between the property (cowness) and the token ('cow'), function optimally. This functioning optimally could be analysed as: functioning in such a way that it contributes positively to the survival value of the organism. The fact that the mechanism functions optimally in normal conditions could then be taken as its evolutionary rationale, as — to speak nonintentionally — the cause of its being retained and reproduced in the process of natural selection. 'Cow'-tokens would then mean COW and not COW OR HORSE ON A DARK NIGHT, because in normal situations, in which the perceptual systems operate in the way that caused their selection, only cows, and not horses, would cause 'cow'-tokenings.

Fodor rejects this teleological solution because he thinks it leads to indeterminacy-problems. This, he tries to illustrate with the following example. Ever since the classical article 'What the Frog's Eye Tells the Frog's Brain', it is known that the snapping of frogs at flies is mediated by cells in its visual system that react selectively to any little black dots

that move across its visual field (8). Now Fodor accuses the teleological account of the following vice: it is not able to determine the content of the state the frog is in when a little black dot moves in front of it. In particular, it cannot distinguish between ascribing the state the content of having detected a fly and having the content of having detected a little black dot. The reason is that, according to Fodor, the process of natural selection is unable to make a difference between a visual mechanism that detects little black dots in a world in which all black dots are flies, and visual mechanisms that are fly detectors. So, Fodor thinks, trying to solve the disjunction problem by appeal to evolutionary considerations implies 'massive intentional indeterminacy' (TC, I, p. 75), which he thinks is reason enough to reject this approach. He states:

"In the notorious frog and bug case, for example, one would think that a good theory of content should decide — and should give some reasons for deciding — whether the intentional objects of the frog's snaps are flies or little black things" (TC, II, p. 106).

Fodor thinks he can reformulate his simple theory so that it makes do with the disjunction problem. His theory then becomes: A representation R expresses a property P iff

- (1) it is a law that P causes R
- (2) if R is also caused by P', than this causation is asymmetrically dependent upon the causal relation between P and R
- (3) that one causal relation is asymmetrically dependent upon another means that you can break the former without breaking the latter, but not the other way round.

Fodor claims this theory can handle the disjunction problem nicely. For it is plausible — at least according to him — that the causal relation between horses on dark nights and 'cow'-tokens is asymmetrically dependent upon the cow-'cow' relation, in the sense that the former would not exist if the latter would not exist, but not the other way round. Fodor credits his theory not only for solving the disjunction problem, but also for its capacity to handle a related problem concerning the meaning of tokens that are caused by thoughts. For it is a mundane matter that 'cow'-thoughts can be caused by 'horse'-thoughts (or by thoughts about anything), yet this does not make 'cow'-tokens mean cow or horse-thought. Again, this can be explained by asymmetrical dependence: horse thought caused 'cow'-tokens do not mean horse thought because the relation between horse-thoughts and 'cow' tokens is asymmetrically dependent

upon the relation between cows and 'cow'-tokens.

4. *Problems for the theory*

I will now point to what are two major — indeed I think fatal — problems for the theory of content that's sketched above.

The first one has to do with ontology: I will claim that the ontological assumption of the existence of fully determinate properties, if tenable at all, will do Fodor's semantics no good. Such kinds of properties either don't exist or they are in practice unknowable. In both cases a semantics (such as Fodor's) which requires determinate properties, turns out to be impossible.

The second problem has to do with the fact that Fodor, with his meaning atomism, has to deny that there are any ties between the content of the mental state of an organism and the (even counterfactual) behaviour of the organism. This leads him to make a radical difference between content and belief. But by cutting the connection between content and behaviour, his content becomes an epiphenomenon, that has little to do with the laws of psychology. Thus, while the major motivation for the theory was to make possible the ascription of propositional attitudes to different individuals, at the end it turns out that the sharing of content does imply nothing about the sharing of propositional attitudes.

1. The major step Fodor makes towards making his notion of content determinate, is tracing the determinacy of concepts back to the determinacy of properties. This implies however, that the content of concepts can only be as determinate as the content of the properties those concepts express. It matters very much whether such determinate properties really exist (on the ontological side) and, if they exist, whether we ever can know them (on the epistemological side).

For every representation token caused, it should be a determinate matter whether or not the property that caused the token, is or is not in its extension (whether it is a proper or all wild tokening). If it were not so, it would be indeterminate in which state the organism in which the concept token occurs, is. And because its concepts would be indeterminate, it would also be indeterminate which propositional attitude to ascribe to it. Now it is a well known fact that there are concepts or predicates that we differ in opinion about when and whether they apply.

In the terminology of Fodor's ontology: we don't know whether the property is present or not. Take, for example, the concepts 'virtuous or 'justified'. It does not really need an argument that people disagree about when one of these predicates apply. For example, according to skeptics, the concept 'justified' never applies, and surely, not everybody is a skeptic. In the face of the obviousness of this all, it is remarkable that Fodor can write: "The semantics of the word "virtuous", for example, is determined by the nomic relation between the property of being a cause of tokens of the word and the property of being virtuous. It isn't interestingly different from the semantics of "horse"" (TC II, p. 111).

Alas for Fodor, shouting out loud that there is no problem does not make it go away. And the problem of course is that people will differ in opinion about just when the property was present to be 'a cause of a token of "virtuous"'

Most interestingly, the same lack in univocality seems to affect not only normative concepts such as 'virtuous' or 'justified', but also 'scientific' 'natural kind concepts'. For example, different schools in biology differ in opinion about what is the extension of the biological term 'fish'. What is a fish according to one school is not a fish according to the other (read: there is a range of cases in which according the one school the property fishness is present, but according to the other, it is absent (9) . Ironically, the semantics of 'virtuous' and 'horse' (taken as a natural kind concept) are indeed analogous, but in a way orthogonal to Fodor's purposes. A possible way for a Fodorian to react to all of this, is to point to the difference between ontology and epistemology. Thus, one can say that the fact that we don't know which property is present, does not imply that it is not a determinate fact that the property is present or not. One might point out that the case is exactly analogous to the following: despite our being forever epistemically isolated from it, it surely is a determinate matter of fact how much, exactly down to the milligram, Aristotle weighted at his birth.

However, this sort of move is not open to Fodor. For he rejects the doctrines he is opposed to because they make he thinks they make content ascription impossible: teleology because of indeterminacy and functional role semantics because of its holism. Now for Fodor's theory to be an improvement, it should show how content ascription is determinate and possible. But, I've just argued, with Fodor's theory, content ascription becomes in practice impossible as well. In other words, it turns out that

the atomistic notion of content that Fodor proposes has in practice the same vices as the theories it is opposed to: it too leaves it — at least in practice — determinate which content to ascribe. Fodor's theory cannot live up to the standards Fodor sets up for other theories.

2. To introduce the second problem, let's start with the fact that Fodor's theory has the seemingly absurd consequence that there is much more content in the world than one would be disposed to allow for. For, if asymmetric dependence is all that is needed to make content, it seems to ascribe content in the following cases:

- the height of the column in a thermometer has the content, means, that it is x degrees. For surely, it is a law that a temperature of x degrees causes this height. And (maybe) it is plausible that other causes of the same height are asymmetrically dependent on this one.

- suppose it is a law that the darker the sky, the darker are my neurons. Suppose, at night, they are really dark, and on a bright day, they are really light. Suppose also that the colour of my neurons in no way affects how they function. Now according to Fodor's theory, that my neurons were light would have the content that it was bright outside, while my neurons being dark would mean that the sky was dark. I might also sometimes be thinking about the brightness of the sky, and I might entertain the thought that it is bright or dark. The perhaps amazing thing is that there is nothing in Fodor's theory to make a difference between the content of the colour of my neurons and the content of my thoughts 'The sky is blue' and 'The sky is dark'. Both kinds of states are caused by the blueness and the darkness of the sky.

- suppose there is someone who is in the particular condition that he has an internal token that gets activated whenever there are cats around, but that the result of this tokening is that he utters 'horse', and that he runs to get a saddle and other horse linked things, and begins telling stories about what wonderful kinds of animals horses are. The remarkable thing here is that, according to Fodor's theory, his internal token would definitely mean 'cat'.

Now Fodor is aware of such cases, and he cheerfully admits them. They only seem problematic, he argues, if one fails to make the difference between content and belief. For content, only asymmetric dependence is necessary. But for a state with a content to become a belief, Fodor argues, there might be additional conditions that have to be honoured, such as cohering in definite ways with other beliefs and with

behaviour. Thus, ascribing content to thermometers and to the colour of my neurons seems OK to Fodor, but ascribing beliefs to them he thinks would indeed be absurd. He says: "... a good theory of content might license the literal ascription of (underived) intentionality to thermometers, thermostats and the like; that is, it might turn out on a good theory of content that some of the states of such devices are semantically evaluable. I don't think that should count as *reductio*, though (in my view) the ascription of beliefs and desires to thermometers and thermostats certainly would." (TC II, p. 130).

Yet, his theory still seems to imply that you can have the belief that has the content 'There is a cat', by being lawfully caused by cats, but that functions in the same way as the belief 'There is a horse' functions in other (normal) people, in being connected to horse-related talk and horse-related behaviour. This has to be possible if semantic atomism is true, viz. if content is exclusively a matter of causation, and if functional role (e.g. behaviour) does not determine content. Presumably, Fodor would try to exclude such cases by saying the 'There's a cat state' wouldn't be a case of belief. In order for the mental state (with the content 'There is a cat') to become a belief, it would have to satisfy additional conditions. More precisely, the quantifying laws of the right propositional attitude psychology should be true of this mental state. The state should be related with other beliefs, desires, etc..., in ways the quantifying laws of the propositional attitude psychology prescribe. That Fodor would say such thing is consonant with a passage like: "Sufficient conditions for being in a state with intentional content needn't also be sufficient conditions for having a belief or a desire or, indeed, for being in any other psychological condition.

It's arguable, for example, that beliefs aren't just states that have content; they're states that have content and whose causal relations obey the axioms of some reasonable decision theory; and the axioms of some reasonable theory of inference, etc. (...) one does not refute a theory that entails that state S has content such-and-such just by showing that S is not a propositional attitude." (TC II, p. 130).

Now presumably, the quantifying laws of the propositional attitude psychology would include such laws as 'If you perceive something as a C, you will be likely to call it a C in your conversations about it', and the like, which would, after all, preclude the 'There's a cat'-state of the person in question to be a belief. So, in order for someone to have a

belief (or any other propositional attitude), in contradistinction with having a state with content, the quantifying laws of the propositional attitude psychology would have to be true of this someone.

There are two remarks I want to make concerning this move. First, Fodor has to require that the complete set of quantifying laws of the propositional attitude psychology should be true of this person. Fodor cannot make a distinction between a subset of essential and a subset of nonessential laws, because that would require some sort of synthetic/analytic distinction, which, as I mentioned above, he rejects. Now, if, as it seems to be the case, all the (at least psychologically) interesting cases of states with content are cases of propositional attitudes, all the interesting cases of contentful states have to comply with holistic conditions after all. In other words: what is the use of semantic atomism, if you are, after all, a holist about belief (and the other propositional attitudes). The only cases of events with content that would not be infected with holism, would be cases in which most people would feel the ascription of content is dubious, and of little conceivable use, for example, the ascription of content to thermometers and thermostats, to nonfunctional properties of neurons or to the states of irrational men.

Secondly, recall that Fodor saw his theory of content as an improvement upon functional role semantics. The problem for functional role semantics was that it implied meaning holism which made the content sensitive laws of propositional attitude psychology inapplicable, and thus led to eliminativism. Remarkably enough, however, Fodor's atomistic causal theory does not bring the applicability of the content sensitive one inch nearer. For the content sensitive laws describe relations between mental states with specific content, other such states and behaviour. Now the whole point of Fodor's causal theory was to deny that such relations determine content. In his view, the content of a representation is solely a matter of its causal contact with things (properties) in the world. But this implies that the fact that a mental state has a certain (Fodorian) content does not imply anything about the applicability of the content sensitive laws of propositional attitude psychology to it. For example, suppose that it is law of propositional attitude psychology that if you see a dog, there is some probability that you'll infer that you're seeing an animal. Suppose also that there is a creature that has a mental state with the (Fodorian) content 'There's a dog', and that his representation 'dog' has its content solely in virtue of its causal contacts with dogs. Absolutely

nothing guarantees us that the law will be applicable to the creature.

Again, Fodor's theory does not seem to offer advantages over the theories he criticizes.

5. *Conclusion*

The source of the problems just sketched clearly are Fodor's exaggerated requirements of strict determinacy of content and of strict atomism. Vagueness, indeterminacy and holism seem to be intrinsic aspects of meaning, and Fodor seems to have shown that if you try to subtract them, what remains has little to do with meaning.

Fodor's determinacy and his atomism seem to me to be unreasonable a priori requirements for what should be an empirical theory: the theory of how biological species use signs to communicate and think.

There are at least two aspects to such a theory: how content and meaning has emerged in biological evolution, and how content and meaning function in the most complex form they have ultimately taken: the human linguistic system (which might include a language of thought).

With regard to the first aspect, there seems to me to be little doubt that the origin of meaning lies in such cases as that of the fly-catching frog, viz., in goal-directed behavior that is oriented towards a certain class of (physical) objects. It seems a bit hard-pressed however, to demand absolute determinacy in cases such as these: to demand that it be a hard fact what precisely the frog Really is snapping at. It might be right to ask of a talking human being trying to catch butterflies what is the content of his behaviour. But maybe even here there might be no hard facts. Maybe even the butterfly-catcher might admit that he does not know what species he is hunting for, or he might tell us honestly that he was catching species A, while on close inspection of the butterflies he has already caught, they all turn out to be of species B. And even in the last case, what we take to be species B, might be, according to another school of butterfly-ologists, or according to the future ultimate science of butterflyology, species C, or two species, no species at all.

At the far end of the evolutionary story about the emergence and evolution of content, will be the theory of how we, humans, deal with words and their meanings. An important part of that story will have to deal with how we come to have the intuitions about meaning that we

have, and how these intuitions are involved in our ascribing meaning to the words and sentences of ourselves and of our fellows. Probably, we ascribe contents by relying on a lot of factors, some having to do with causation, others having to do with complex behavioural patterns. So, we would say of a child that cried 'dog' each time it encountered a horse, that it meant HORSE by 'dog', while we probably would not say that a person meant SQUARE ROOT by 'square root', if all he ever did was shouting out 'square root' when he saw , without the person being able to answer our question which is the square root of 4 etc....

Here again, there is no guarantee that precludes that different people have different intuitions about what the content of a particular expression is. Indeterminacy and conflicting intuitions about content ascription, seem to be empirical facts. They explain in part why there is so much disagreement about philosophical theories of meaning. What is more remarkable, however, and what demands to be explained, is that these facts do not stand in the way of the many successful conversations and communications we have with one another.

In the light of this, it is definitely a wrong strategy to deny indeterminacy and to construct an a priori theory, that buys (apparent) determinacy only at the cost of artificiality.

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NOTES

1. For an excellent discussion of the notion of intentionality, see Dennett & Haugeland (1987). For Quine's position, see Quine (1960).
2. This section is primarily based on chapters 1 and 3 of Fodor (1987).
3. For expositions of functional role semantics, see Field (1978) and Block (1986).
4. See Quine (1956). For Fodor's statement of the nonapplicability of the distinction in this context, see Fodor (1990) b, p. 52.
5. This section is based on Fodor (1990)b and Fodor (1990)c.
6. See Fodor (1975) and Fodor (1981).
7. The teleologists Fodor has in mind are Ruth G. Millikan and Daniel C. Dennett. See Millikan (1984), (1986) and Dennett (1969), (1987). For Fodor's comments on teleology, see Fodor, (1990b).

8. See Lettvin, Maturana, McCulloch & Pitts (1951).
9. See Gould (1981), and for an extensive treatment, Lakoff (1987).

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