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Two-factor theories, meaning holism, and intentionalistic psychology: A reply to Fodor.

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TWO-FACTOR THEORIES, MEANING HOLISM, AND INTENTIONALISTIC PSYCHOLOGY: A REPLY TO FODOR

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ABSTRACT In the third chapter of his book *Psychosemantics*, Jerry A. Fodor argues that the truth of meaning holism (the thesis that the content of a psychological state is determined by the totality of that state's epistemic liaisons) would be fatal for intentionalistic psychology. This is because holism suggests that no two people are ever in the same intentional state, and so a psychological theory that generalizes over such states will be composed of generalizations which fail to generalize. Fodor then sets out to show that there is no reason to believe in holism by arguing that its primary foundation (i.e. functional-role semantics), when properly understood (i.e. when construed as a two-factor theory of content), is demonstrably false. In this paper, I argue two claims. First, I try to show that Fodor has seriously misrepresented two-factor theories and that his arguments against his strawman do nothing to indicate the falsity of the genuine article. Second, I argue that if one accepts meaning holism in the form of a two-factor theory, there is no particular reason to think that one is hereby committed to the futility of intentionalistic psychology. In making this point, I make a brief excursion into the psychological literature during which I discuss the belief perseverance phenomenon, the encoding specificity hypothesis, and a problem in human deductive reasoning. My second argument leads to a discussion of how such a psychology could be developed even if no two

people are ever in the same intentional state.

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I. Introduction

According to conventional theories of mind, there are three significant levels of descriptor: the physical, the syntactic and the semantic. Currently, there is little debate about the first of these. Nearly everyone (except, interestingly, certain neurophysiologists) agrees: the mind is just the central nervous system. Whatever is realized mentally must be realized in this part of the body [1]. There are a few more detractors regarding the standard characterization of the syntactic level of description; eliminativists like the Churchlands think that propositional attitude psychology should be done away with root and branch (i.e. we should abandon both the semantics and the syntax of folk psychology). And while connectionists presumably want to adopt a computational model of some sort, it is unlikely that the syntax of the PDP model will closely resemble that of its more traditional counterpart. Despite the contentious nature of the syntactic level, however, it is clear that the most controversial and talked about level of description is that of the semantic. The controversies surrounding semantics revolve around the following questions: Is semantics needed for the purposes of cognitive science? And how is it that states of the brain come to have meaning? It is the second of these questions that Jerry A. Fodor seeks to answer in this book, *Psychosemantics: the problem of meaning in the philosophy of mind* (Fodor, 1987). However, in this paper I will not be interested in Fodor's positive view as much as I will be concerned to defend a position against which he argues.

The third chapter of *Psychosemantics* is primarily an attack on the doctrine of 'meaning holism' which Fodor takes to be a serious challenge to a realistic intentional psychology. In an effort to undercut the motivation for accepting meaning holism, Fodor also argues against functional-role semantics and against what are known as 'two-factor' theories of content. While I have no general desire to be a defender of meaning holism, I do not find Fodor's arguments against functional-role semantics convincing. In this paper, I will defend a particular variety of functional-role semantics, via the two-factor theory, against Fodor's criticisms. Furthermore, I will contend that even if meaning holism is true, it is far from clear that there is no place for a realistic intentional psychology.

II. Some preliminaries

I will begin by making clear the terminology that is essential for understanding Fodor's discussion. Since Fodor's third chapter is primarily about meaning holism, it is vital to know what this doctrine is. The following is Fodor's definition:

(D1) Meaning holism is the idea that the identity--specifically, the intentional content--of a propositional attitude is determined by the totality of its epistemic liaisons. (Fodor, 1987, p. 56)

In order to understand (D1), however, one must know what an "epistemic liaison" is. Hence:

(D2) P is an epistemic liaison of Q for system S at $t =_{df}$. At t, S takes the semantic value of P to be relevant to the semantic evaluation of Q [2]. (Fodor, 1987, p. 56)

The rough idea is this: when evaluating a proposition, one takes certain things as semantically relevant and others as irrelevant. What the Gazette reports in its sports page this morning will be relevant when I am trying to decide whether or not the proposition 'The Razorback basketball team won last night' is true. But my beliefs about the greenness of the grass, say, will not matter in the least. Now, according to meaning holism, propositional attitude types [3] are individuated by all of the propositions that one believes to be semantically relevant; so the content of one's belief that P is determined by the set of P's epistemic liaisons. No two tokens are the same belief state type unless their set of epistemic liaisons is identical.

It is clear how meaning holism can be thought to threaten realistic intentional psychology. Presumably, the set of epistemic liaisons that determine the content of a belief will be quite large; couple this with the claim that difference in sets means difference in content and it begins to look as though no two persons will ever have the same belief. So even though one might accept meaning holism and still remain a realist about the attitudes, since meaning holism cuts mental states into extremely thin slices, it will turn out that such states are never (or at least hardly ever) shared by more than one subject. Thus, even though there may still be generalizations that advert to content, the fact that the antecedents of such statements will usually be satisfied only once might suggest that a psychology couched in such terms (i.e. an intentionalist psychology), would be practically useless.

III. The argument for meaning holism

Given the apparently devastating effect that meaning holism has on propositional attitude psychology, one might wonder why anyone would accept it. After all, if a theory has a consequence as prima facie implausible as this, then isn't it doomed from the start? The answer, of course, is 'No'. A theory's having an implausible consequence might mean that the burden of proof is on that theory's proponent, but it certainly does not follow that the theory is not true. Very well, then, what evidence can be marshalled by the friend of meaning holism to support her view? Fodor suggests that every argument for meaning holism has essentially the same form; the argument, which Fodor refers to as the "Ur-Argument," goes like this:

Step 1. Argue that at least some of the epistemic liaisons of a belief determine its intentional content.

Step 2. Run a 'slippery elope' argument to show that there is no principled way of deciding which of the

epistemic liaisons of a belief determine its intentional content. So either none does or they all do.

Step 3. Conclude that they all do. (1, 2: modus tollens). (Fodor, 1987, p. 60)

Fodor stresses that step 2 of the argument only takes you to meaning holism if you have already established the connection between epistemic liaisons and intentional content. If you can demonstrate that there is a relationship, then Fodor thinks that argument goes through [4].

How, then, do the proponents of meaning holism attempt to establish step 1 of the Ur-Argument? According to Fodor there are three ways: via confirmational holism, via psychofunctionalism, and via functional-role semantics. In this paper, I am primarily interested in examining the latter of the 'three ways'. I focus on this mostly because I believe that the best case for step 1 can be made from functional-role semantics and partly because it is the most popular way among philosophers of mind and language of supporting the first step of the argument. Furthermore it is the argument that Fodor takes most seriously and spends most time with.

Let me point out before proceeding that it is by no means clear that acceptance of step 1 lands one in the bog of meaning holism. That is, one might very well argue that the meaning of a sentence (of either public language or a language of thought) is determined in large part by certain of its epistemic liaisons but that nevertheless step 2 of the Ur-Argument is false--that in fact there are principled ways of deciding which liaisons are relevant and which are not.

The relationship of functional-role semantics to the first step of the Ur-Argument is, I suppose, obvious. But just in case it is not, here is the idea: functional-role semantics is a theory of meaning. In particular, it is the theory that the meaning of a term or sentence is determined by the way that it functions in the language of which it is a part. For example, the meaning of a sentence of Mentalese is determined by the role that it plays in the inferences, both theoretical and practical, of the organism that has it. Now step 1 claims that at least some of the epistemic liaisons of a belief are relevant to determining its content; functional-role semantics entails that what determines the content of an intentional state is its inferential relations with, *inter alia*, other intentional states. And if that is the case, then some of the semantic relations that a belief has will be relevant to (indeed, determinants of) its content. This is precisely that to which step 1 commits us.

Fodor takes the case for functional-role semantics to be largely negative. It is generally held that the only other candidate theory of meaning is the denotational theory; and this theory is subject to some rather severe objections. Furthermore, the stumbling block for the denotational theory is easily hurdled by functional-role semantics. So, to steal a phrase used by Fodor in another context, one might suppose that functional-role semantics has to be right since it is the only game in town. Since the objection to the denotational theory is well known, it can be rehearsed rather quickly. The problem is that the theory slices things too thickly. To borrow Fodor's example, it is true that Oedipus wanted to marry Jocasta but it is also true that Oedipus did not want to marry his mother. But since Jocasta is Oedipus's mother, the denotational theory can only make sense of Oedipus's predicament by assigning contradictory beliefs to him. However, this accusation is not fair or plausible; the right thing to say is that the desire to marry Jocasta and the desire to marry his mother are separate desires because they differ in content. Yet according to the denotational theory these desires are content-identical. Hence the denotational theory slices things too thickly; hence it is false [5].

Functional-role semantics, on the other hand, seems to get things right. Because Oedipus wants to marry the woman who is his mother not under that mode of presentation but under a different one, the functional-role of the sentences 'I want to marry Jocasta' and 'I want to marry mom' will differ substantially; and since functional-role determines meaning, according to functional-role semantics, the two sentences will express different contents and so will be different propositional attitude states.

There is, according to Fodor, a very hard problem for functional-role semantics that the denotational theory does not have. Fodor writes:

The hard problem is this: Functional-role semantics says that content is constituted by function. Very well, then, just how is content constituted by function? How does the fact that a symbol or a thought has the content that it does manage to be--how does it manage to 'reduce to'--the fact that it has the function that it does? (Fodor, 1987, p. 76)

There is, Fodor admits, a *prima facie* plausible solution to this difficulty. Just as there is a network of causal interactions between mental states so there is a network of semantic interrelations. That is, a mental state will have various causal interrelations with other mental states; and a proposition will have various semantic relations with other propositions. The suggested solution, then, is that there is a mapping of the causal relations of mental states on to the semantic relations of propositions. Thus, for contentful mental states there is an isomorphism between their causal interactions and their semantic interrelations. So mental states get their content by having a role in a causal network that mirrors the role that the appropriate proposition has in a semantic network.

A brief recap: we want to know why someone would accept meaning holism. Fodor offers a general argument schema, the Ur-Argument, that shows how to get meaning holism from the claim that at least some of a belief's epistemic liaisons are relevant to its content. But why should we accept this claim? There are three arguments for it, the best of which would appear to come from functional-role semantics. So, on Fodor's view, a good case for functional-role semantics is a good case for meaning holism. Prima facie, there would seem to be a decent argument from elimination to functional-role semantics. So what, then, is to stop us from accepting it and meaning holism as well?

IV. Fodor's argument against functional-role semantics

Any realistic intentional psychology will postulate mental states that represent the world, i.e. which have reference or denotation. Since the functional-role semantics advocate wants to account for at least a great deal of meaning by virtue of functional-role, the question about the relationship of this role to denotation naturally arises. There are, Fodor claims, two ways that these could be related, although it doesn't take much to see that one of them won't work. The clearly wrong suggestion is that denotation is determined by functional-role; the familiar Twin Earth thought experiment demonstrates the inadequacy of this view. Such thought experiments ask us to imagine a planet just like earth inhabited by people just like you and me, some of whom speak a language just like English. The only difference between Earth and Twin Earth is that the stuff that they call 'water', which looks, smells, and tastes just like our water, is the chemical compound XYZ rather than H₂O. By hypothesis, my water thought and my Twin's 'twin water' thoughts have just the same functional-role although they differ in denotation. So denotation is not determined by functional-role. The second way of relating functional-role and denotation is in the fashion of the currently popular two-factor theory [6]. According to such a view, the intentional properties of a mental state are determined by two components: functional-role and the way that the system is causally connected with the world, or in Fodor's clever words "... [the sense] in virtue of its domestic relations and the [denotation] in virtue of its foreign affairs" (Fodor, 1987, p. 81). Among those who hang their hats here are Brian Loar (1982), Colin McGinn (1982), and Ned Block (1986). The two-factor theory claims that functional or conceptual role determines 'narrow' or solipsistic ('in the head') content and causal connections to the world determine 'wide' ('outside the head') content. Taken in tandem the two determine the content of intentional states.

It is precisely the two-factor aspect of this theory that Fodor finds objectionable. Fodor complains that the two components can become unglued thus yielding two incompatible contents for the same thought. Since the way the argument is stated is very important for my criticisms that follow, I will quote Fodor at some length here.

The problem is most obvious in the Twin cases. My Twin's WATER₂-thoughts are causally connected with XYZ; so his thought WATER₂ IS WET is true in virtue of the wetness of XYZ. But also the propositional content of my Twin's thought WATER₂ IS WET is identical to the propositional content of my thought WATER IS WET. For (1) by assumption, propositional content is determined by functional-role; and (2) by assumption, my thoughts and my Twin's thoughts have the same causal roles. Well, but surely my thought WATER IS WET expresses the proposition water is wet if it expresses any proposition at all. And now we've got trouble. Because, notice, the proposition water is wet has, intrinsically, a certain satisfaction condition; viz., it's true iff water is wet. But being true iff water is wet is not the same as being true iff XYZ is wet, what with water not being XYZ. So it looks as though there is a flat-out contradiction: the theory says of my Twin both that it is and it isn't the case that his WATER₂ thoughts are true in virtue of the facts about water. (Fodor, 1987, pp. 81-82)

In the above quotation, Fodor is giving us an example of a fundamental problem that he thinks he sees with the two-factor theory; there are possible cases in which the two factors come apart. He goes on to claim that things can, in principle, break down even more. There is nothing built into the theory that keeps these two contents in sync; there is no mechanism "... to prevent a situation where a thought inherits, for example, the truth condition dogs are animals from its causal connections and the truth condition grass is purple from its functional-role" (Fodor, 1987, p. 82).

So Fodor's argument against functional-role semantics is really this: our propositional attitude states have intentional objects that represent the world, so the functional-role semantics advocate must explain the connection between functional-role and the objects in the world that get picked out, i.e. the denotation. There are two possible ways of doing this: either functional-role determines denotation, or causal relations to the world determine it. Twin Earth cases show us immediately that the first way is bankrupt. So that means that the functional-role theorist must adopt a two-factor view of content. But in such a view there is nothing to keep together the content that is assigned via functional-role and that which is assigned via external causal relations. Thus, one will often get incoherent contents and so the two-factor theory can't be right and so functional-role semantics must be false. Hence, the most promising way of arguing for step 1 of the Ur-Argument is unsuccessful; and hence, the most promising way of arguing for meaning holism is unsuccessful; and, hence, the most promising way of arguing against a realistic intentional psychology is unsuccessful.

V. Contra Fodor on the two-factor theory

In this section I will argue that Fodor is wrong on two important fronts. First, I think that the way that he

characterizes the two-factor theory is most unfortunate; he makes the theory look preposterous. of course it could turn out that the two-factor theory is false, but it isn't a crazy theory. I will try to show how Fodor's explication is inaccurate and how being more careful in one's portrayal of the two-factor theory makes it clear that Fodor's primary objection is misguided. The other criticism that I will make has to do with the relationship between meaning holism and realistic intentional psychology. It seems to me that even if meaning holism is true, there might still be a useful and important place for such psychological theorizing.

First, let me explain why Fodor has been unfair to the two-factor theory. In order to do this, I will need to quickly gloss the positions of two philosophers who subscribe to it. Hence, I shall briefly spell out the positions of Block and McGinn.

As a two-factor theorist, Block claims that the semantic properties of mental states are determined by two components. In order to get any sort of propositional attitude content, one must put both of these factors together. According to Block, the relevant components are narrow content (or conceptual-role) and wide content [7] (or reference). Now one can be misled by the terminology 'narrow content' and 'wide content' into thinking that there are two different kinds of content. However, Block insists, such is not the case. Narrow and wide individuation should be seen, instead, as specifying different aspects of meaning; narrow and wide contents are not kinds of content, but are "only aspects or determinants of meaning" (Block, 1986, p. 620). It goes without saying, I suppose, that Block has only given us a skeletal theory of content. Nevertheless, it is clear that Block envisions an account of the semantics of mental states according to which their contents are determined by two factors, neither of which is sufficient to pick out propositional contents.

McGinn's view is somewhat different. The underlying motivation of McGinn's two-factor theory comes from a commitment to mental representations (McGinn, 1982, pp. 211-216). According to McGinn, if one is committed to representations' playing an explanatory role in behavior, and to their doing this in part because of the way that they represent the environment in which the organism is imbedded, then one will need to explain their contents in terms of two factors. Since the representations help generate behavior, one factor should explain their role in the organization of the organism; and since the representations at least purport to represent something outside of the organism, one factor should be their referents. So far, we have nothing here to distinguish McGinn from Block; but there is more to come. McGinn suggests that a theory of content should be construed as the ordered pair $\langle R, C \rangle$, where 'R' is replaced by a theory of reference and 'C' is replaced by a theory of conceptual role. The content of any given intentional state will then be an ordered pair consisting of a truth-condition (ascertained via the theory of reference) and a conceptual role. Thus, it looks as though you can get some kind of content from at least one of the components of meaning; at least you can get a proposition that expresses the truth conditions of the attitude. From what Block says (although he is less explicit about this than one might like) it is not clear that he thinks that one of the components of meaning is sufficient to give truth-conditions. However, both Block and McGinn want to claim that the content of a propositional attitude is what you get from combining a causal, reference fixing component with the conceptual role of the state.

Recall Fodor's characterization (perhaps 'caricature' is the better word) of the two-factor theory. Fodor claims that each of the factors is sufficient to fix a propositional content; a state gets truth conditions from its functional-role and from its causal relations to the world. Thus, there are two independent ways of getting truth conditions and there is no mechanism for making sure that the two hang together. Now, if the two-factor theory required this, it would really be an awful theory, even worse than Fodor thinks. Suppose, for a moment, that Fodor's characterization is right. Then each belief has its content because there are two factors, each of which contributes a truth condition. Now as Fodor has pointed out, there is nothing in the theory that is capable of keeping the two parts together. So it could turn out that the two factors determine different truth conditions. But then a single belief would have more than one condition of satisfaction and they might very well prove inconsistent; that is the lesson we are to draw from the above-quoted paragraph. on the other hand, the two-factors might determine the very same truth condition. But in such a case, what has been gained by having more than one factor? If the two-factor view is what Fodor claims that it is, then it looks pointless. Either the two factors determine different truth conditions, in which case we have a single belief with more than one truth condition, or they both determine the same truth condition. The former looks bad because, as far as I can see, the only way that a belief could seem to have two truth conditions is if the belief is either disjunctive or conjunctive; and both of these options are unattractive. If beliefs with two truth conditions are disjunctive, then should I go to Twin Earth, look at XYZ and think 'That's water', I would be right since one of the disjunctive truth conditions (the one determined by conceptual role) is satisfied. If we say that they are conjunctive, then my believing that 'that stuff is wet', where that stuff picks out H₂O, and water's being wet are not sufficient for my truly believing that water is wet, since the truth condition determined by my conceptual role may not be satisfied. So if the view allows, or even worse insists on, each factor determining a different content, then it looks hopeless. on the other hand, if it is required that they both determine the same truth condition, then there is no point in having a two-factor theory; one factor will do just as well. So if the two-factor theory looks anything like this, it is really much worse off than Fodor's arguments against it suggest.

All of this might lead one to suspect that Fodor has been a bit sloppy in his explication. And if we reflect for a moment on either Block's or McGinn's view, we will see that this is indeed the case. on Block's account, the content of a belief is determined by its conceptual role and its reference. Now Block is explicit that

neither of these conditions, by itself, is sufficient for any real content. As quoted above, Block explicitly warns that the word 'content' after 'narrow' and 'wide' might mislead one into thinking that there are two kinds of content. But, says Block, that is wrong; there are two determinants, and not two kinds, of meaning. Thus, it appears that on Block's view, neither is sufficient to determine any propositional content. McGinn is clear that the first member of the ordered pair of content, viz., reference, determines truth conditions. And presumably any truth condition can be specified propositionally. So it might reasonably be claimed that one could get some kind of propositional content from reference alone. However, for familiar reasons, the kind of content that you get from denotation alone simply won't do for the purposes of cognitive psychology. As McGinn stresses, it matters not only what the truth conditions of the representation are, but it is crucial, from the perspective of cognitive science, how the system has represented the object. So Fodor's characterization of the two-factor theory as a theory that insists that each factor determines a propositional content is inaccurate. on Block's view it isn't clear that one even gets a truth condition from the reference fixing component of content; and on McGinn's view, one does get truth conditions in this way, but there is no reason to think that truth conditions and content are the same thing. I would suggest that Fodor's partiality to denotational theories might be doing some work in his argument. Fodor very quickly shifts from truth conditions to contents; but this is at best a contentious move. Surely the two-factor theorist will claim that truth conditions do not, by themselves, specify any content for mental states; content only comes as the result of both factors. Even on a view like McGinn's, according to which truth conditions get determined by one component, content is what you get when truth conditions are conjoined with conceptual role. So the idea of there being two 'propositional contents', as Fodor claims, is not one in which the two-factor theorist takes any stock.

It seems to me that part of what causes Fodor some problems is that he is discussing the two-factor theory under the general heading of 'functional-role semantics'. After making his claim that the two factors can come apart, Fodor states that

Functional-role theory works by associating functional roles with semantical objects; viz., with objects which-like propositions--are assumed to have semantical properties essentially. However, at least as far as anybody knows, you can't be a thing that has semantical properties essentially without also being a thing that has satisfaction conditions. In short, it looks unavoidable that two factor theories are going to assign satisfaction conditions to a mental state not only via its causal connections to the world but also via the propositional interpretation of its functional role. (Fodor, 1987, p. 82)

Now it seems that a part of the problem with Fodor's interpretation of the two-factor theory might be the way that he comes at it. He begins this section of Chapter 3 by claiming that one popular way of attempting to establish step 1 of the Ur-Argument is via functional-role semantics. But then, when the question of how functional role is related to denotation arises, he claims that the only initially plausible way to account for this is to move to a two-factor theory. It seems then that he keeps everything that a functional-role semantics theorist accepts and then simply adds to it a reference-fixing factor. Thus, he claims in the quotation above that functional-roles are associated with semantic objects, i.e. truth conditions. of course if one wants to account for all of meaning in this way (as does Gilbert Harman, 1982), then of course functional-roles will be so associated. But it seems that the friend of the two-factor theory (like Block or McGinn) should not be seen as simply an advocate of functional-role semantics who tacks on a second way of establishing truth conditions. The two-factor theorist has significantly changed simple functional-role semantics; for now functional-role does not determine a truth condition. Rather, functional-role fills out the content of the representation by adding to the truth condition established via the system's causal connections to the world.

VI. Contra Fodor on meaning holism

Thus far, I have not challenged Fodor's claim that the truth of meaning holism entails the demise of realistic intentional psychology. However, that assertion strikes me as eminently questionable. In this section, I shall show why.

First, however, I need to say a few words about the relationship of the two-factor theory and meaning holism. Following Fodor, I defined the latter as the doctrine that the content of a propositional attitude is determined by the totality of its epistemic liaisons. Now this could be understood in one of two ways, only one of which is compatible with the truth of the two-factor theory. Meaning holism can be taken to entail that all and only the epistemic liaisons of a state are relevant to its propositional content; if that is right, then the two-factor theory and meaning holism are inconsistent, since the former insists that the content of a mental state is determined in part by its denotation. However, one might hold that meaning holism only commits one to the claim that no states with different sets of epistemic liaisons have the same propositional content. That is, every liaison is essential for determining the content of a particular state. This reading will allow another determinant of content, as long as any difference in epistemic relations entails difference in content. Whichever of these positions Fodor takes, it seems clear that, if his argument that meaning holism entails the denial of realistic intentional psychology works at all, it works against them both. Even if content is fixed in part by denotation, if every epistemic liaison is content-essential to a given mental state, then it seems unlikely that many people would ever be in just the same intentional state. Thus, for the purposes of Fodor's anti-meaning holism argument, we can understand meaning holism in such a way that it is compatible with the two-factor theory.

Recall the argument from meaning holism to the hopelessness of realistic intentional psychology: if meaning holism is true, then it is doubtful that any two people will ever share the same mental state. A realistic intentional psychology will generalize over the contents of propositional attitudes, but if no two people ever share the same mental state, then no two people have states with the same contents. So only one person's attitude will be captured by any given generalization. But, of course, a generalization that doesn't generalize is rather pointless. And this makes a psychology based on such generalizations pointless as well.

However, the truth of meaning holism doesn't rule out the possibility of an explanatory-powerful intentionalistic psychology. In what follows I will offer three reasons for thinking that the two are compatible.

Reason 1. Content similarity and psychological generalizations. First, it isn't obvious that the truth of meaning holism is inconsistent with the existence of significant psychological generalizations that advert to content. For example, it has been suggested by both Block (1986) and Stich (1983) that we do away with the notion of strict content identity and opt for the more realistic notion of content-similarity. Acceptance of this shift allows one to grant the meaning holist that our psychological states are not content identical; but one is, nevertheless, able to insist on the importance of content similarity. So the psychologist can employ generalizations which advert to contents, but such generalizations will have antecedents that contain disjunctions of content-similar states. The defender of this position can point out that, with the meaning holist, she is individuating intentional states very finely, and that our folk psychological generalizations which mention single intentional states in their antecedents will capture roughly as many actual and possible cases as these more scientific generalizations, the antecedents of which refer to numerous content-similar intentional states as disjuncts. So, in principle, meaning holism won't prevent the psychologist from making important use of generalizations that apply to many subjects.

Though initially attractive, this view can seem to have a potentially significant problem. Fodor had discussed a similar suggestion in the third chapter of *Psychosemantics*. There, he considers the possibility of one's having "'more or less' the belief that P" (Fodor, 1987, pp.57-59). If this move were employed, you and I might fall under the same generalization because, say, you have the belief that P and I have 'more or less' the belief that P. If this suggestion would work then the relevant generalizations really would generalize. The problem with this solution can best be brought out by considering an example: suppose that you and I both have a belief that we would express as follows: [S]: 'Shawson Dunston should be the National League's starting shortstop in the All-Star game.' You think that one reason for believing that what [S] expresses is true is that Dunston plays most of his games on natural grass and it is harder to field well on grass than it is on astroturf. I think this point is irrelevant to the truth expressed by [S]. Suppose furthermore that all of the other epistemic liaisons are the same for each of our beliefs. Nevertheless, according to meaning holism you and I have different beliefs. So it cannot be that both of us have a belief with [S] as its content. But then, Fodor will ask, which of us is the imposter? That is, we would use a sentence type identical with the one above to express our belief but one of us is wrong. Who is it? Fodor's point is that there is no non-arbitrary answer to this question.

However, the defender of both holism and realistic intentional psychology might want to reply to Fodor that it is a mistake to think that the antecedents of psychological generalizations will refer to content states as coarsely individuated as the belief with the content of [S]. Remember, on the present proposal, such generalizations will have as antecedents disjunctions of finely individuated intentional states. It is just wrong to suppose that any one of these states will have the coarse-grained content expressed in [S]. And since none of them have the content of [S], the above objection does not even get started since there is no identity claim to be called 'arbitrary.'

There is another suggestion, very similar to the view we have just been considering, that does not even appear to have the problem Fodor raises. This alternative grants Fodor that psychological generalizations will have single content states in their antecedents; it then identifies one of these more coarsely-individuated content states with a disjunction of more finely individuated content-similar states. That way, you and I will both fall under a generalization that refers to a state having [S] as its content even though, strictly speaking, our states are only content similar, not identical.

Now I don't mean to claim that there are no problems with this suggestion. While we will want our two beliefs about Dunston to count as beliefs of the same kind, there will be many other beliefs that one could use [S] to express that clearly don't have the same content. So it would be very nice to have a principled way of deciding which differences make a difference and which do not. Realistically, it is likely that the boundaries between certain coarse contents will be fuzzy; but it is not clear that a psychological theory which attempts to make sense of our folk attributions should not have fuzzy boundaries. on the contrary, it is easy to think of cases in which we just don't know whether we should count two folk contents as the same. Stich (1983, Chapter 4) has probably done more than anyone to make this point plain. Consider the content of the belief of a 2-year-old who thinks that 'Mommy is going to have a baby soon'. Does this belief have the same content as the corresponding belief of the child's 10 year-old sister? How about the belief of her 5 year-old brother? The approach that I am suggesting here would answer that there is no doubt that these states are each type distinct if we are thinking of fine-grained, theoretically useful content; on the other hand, if the current question involves folk attributions, then the answer just is not clear and

this is because it is not clear how much deviation in functional role such attributions can tolerate.

Reason 2. Variable generalizations. So there isn't any good reason for thinking that meaning holism is bad news for a realistic intentional psychology even if the latter needs generalizations that appeal to particular contents. However, one might also question the assertion that realistic intentional psychology needs generalizations that advert explicitly to contents. To see why, we must now mark an important distinction. One can generalize over contentful mental states in two very different ways. First, one can refer to the contents themselves in the generalizations. If one is proceeding in this fashion, the hypotheticals, 'If you want ice cream, and if you believe that you can't get ice cream unless you go to the store, then, *ceteris paribus*, you will do what you can to get to the store', and 'If you want cake, and if you believe that you can't get cake unless you go to the bakery, then, *ceteris paribus*, you will do what you can to get to the bakery' count as different generalization types (call these kinds of generalizations 'content generalizations'). However, an alternative way of generalizing over contentful states is by doing so in a way that requires quantification over them but does not require mentioning the particular contents in the generalizations (call these kinds of generalizations 'variable generalizations'). An example of this is: 'If you want P, and if you believe that not-P unless Q, then, *ceteris paribus*, you will do what you can to bring about Q'. On this way of generalizing, the ice cream and cake conditionals are tokens of the same psychological generalization type. And now we can see how this looks promising as a way of saving a realistic intentional psychology in light of meaning holism. For it does not matter what particular contents are plugged in for P and Q; the generalization is content neutral. So even if no two people ever have mental states with the same contents, they would still have lots and lots of states that would be subsumable under this psychological law (that is, if this were one). And this is clearly a way of generalizing over contentful states, although it might not be generalizing over contents.

Now the important issue is to what extent psychology can get by using variable generalizations. I'm inclined to think that it can do rather well with them, but I don't know how to argue this. Therefore, what I propose to do very quickly is look at three examples from the psychological literature in which explanations of phenomena are clearly intentionalistic and see if such explanations require content generalizations. These examples are chosen willy-nilly; I have not selected them simply because they lend support to my claims (although, of course, they do).

The first example that I will consider is what is known as the 'belief perseverance' phenomenon. Nisbett & Ross summarize it with the following three hypotheses:

(1) When people already have a theory, before encountering any genuinely probative evidence, exposure to such evidence (whether it supports the theory, opposes the theory, or is mixed), will tend to result in more belief in the correctness of the original theory than normative dictates allow.

(2) When people approach a set of evidence without a theory and then form a theory based on initial evidence, the theory will be resistant to subsequent evidence. More formally, people's response to two sets of evidence with opposite implications does not adhere to the commutativity rule which demands that the net effect of evidence A followed by evidence B must be the same as for evidence B followed by evidence A.

(3) When people formulate a theory based on some putatively probative evidence and later discover that the evidence is false, the theory often survives total discrediting. (Nisbett & Ross, 1980, p. 169)

We have in these hypotheses generalizations that are clearly intentionalistic. All talk of people having 'a theory' or 'theories' can be translated into people having sets of beliefs. So, for example, hypothesis (1) indicates that if I have a certain set of beliefs about the value of capital punishment as a deterrent of crime, and I receive some data which suggest that my beliefs are wrong, it is likely that I will not revise my beliefs to the extent that normative considerations suggest that I should. And any generalization that makes explicit reference to intentional states such as 'belie is clearly intentionalistic.

Now it should be clear that in the above quotation Nisbett & Ross are offering variable, not content, generalizations. The generalizations are not content specific. So it would seem that generalizations about belief perseverance would be unaffected if content generalizations were forbidden, so long as variable generalizations are allowed.

A second example is from the literature on the psychology of memory. The particular thesis that I want to look at briefly is called (by E. Tulving) "the principle of encoding specificity". It is the very familiar thesis that the probability of one's being able to successfully recall an item is directly related to the strength of similarity of the context of the test and the context of encoding. In other words, the more the context in which you are remembering resembles the context in which you learned the to-be-remembered item, the more likely it is, *ceteris paribus*, that you will recall that item. Now to get a generalization from this that is intentionalistic at both ends (that is, that has both an intentionalistic antecedent and consequent [8], one will have to include an intentional state of the subject's in the learning context. But that is not hard to do; the experiments that are taken to confirm this hypothesis (see Watkins & Tulving, 1975) are ones in which subjects must first remember certain pairs of terms and then later are asked which of a list of words were ones that they had studied earlier. It turns out that to-be-remembered terms which are not recognized

when the context of recall is significantly different from the learning context can often be recalled when the recall context closely resembles the learning context. I discuss the encoding specificity thesis here because it provides us with another example of the content independence of standard psychological generalizations. For the following generalization seems to be at the heart of the encoding specificity hypothesis: If S learns a term T by associating it with another term A, then, *ceteris paribus*, she will be more likely to recall T when she is thinking of A than she will be to recognize T (as a previously studied term) in the absence of A. once again, we have what is clearly an intentionalistic generalization (note the terms 'learns' and 'thinking of') that is not content sensitive. of course, it matters that there be contentful states, otherwise the antecedent will never be satisfied. But it doesn't matter what the particular content is.

For a final example, let us examine a hypothesis concerning human deductive skills. There is ample evidence to suggest that while people do not have a hard time recognizing the validity of *modus ponens*, they have great difficulty seeing that *modus tollens* is also valid. While it is true that there are contexts in which people do decidedly better (see Johnson-Laird et al., 1972), generally people fail miserably at tasks that require them to use *modus tollens*. In one much discussed experiment (for a review see Wason & Johnson-Laird, 1972, Chapters 13 and 14), an amazing 96% of subjects failed a rather simple task that required use of *modus tollens*.

These and other results have compelled John R. Anderson to conclude that "Inability to reason with *modus tollens* is a major weakness of human deduction" (Anderson, 1986, p. 269). What is important for our purposes is that this claim is not content specific. It doesn't matter what the content of the particular conditional is, if the consequent is negated, people will have a hard time seeing that this entails the negation of the antecedent. Now as I mentioned before, there are contexts in which people do much better than they do in others; but there is no reason to think that there is something intrinsic to particular contents which makes the validity of *modus tollens* more transparent. Rather, it seems clear that certain kinds of tasks involving the employment of *modus tollens* are more familiar and so can be done more easily than can other simple, more novel tasks which require a more explicit formulation of this logical rule.

Let me be clear about what I take these examples to show. of course, they do not show that psychology can make do with only variable generalizations. The only way that one could successfully demonstrate this is to either develop a completed intentionalistic psychology that doesn't require content generalizations or present some kind of argument to the effect that, in principle, psychology doesn't need them. I don't know how to do either of these things. I take these examples to indicate that psychology can do a great deal without content generalizations and that one who thinks it cannot needs to present an argument to that effect. Unless or until we have such a demonstration, I think that it is reasonable for us to conclude that a realistic intentional psychology might be powerful and explanatory even if it didn't have content generalizations (but do remember that I have previously argued that there is no reason to think that a realistic intention psychology cannot have content generalizations even if meaning holism is true).

Let me note that a psychology which includes only variable generalizations might look superficially like a syntactic theory of mind (a la Stich, 1983); but such a resemblance would be misleading. For it must be kept in mind that the 'P's and 'Q's of the generalizations are to be replaced by propositional contents. And according to the syntactic theory, the only psychological state entities that a mature cognitive science will need to quantify over are syntactic. But variable generalizations apply to states like belief and desire; and I take it that nothing could be a belief or a desire without having content. So these generalizations belong to an intentionalistic psychology and not to a syntactic theory of mind.

Reason 3. Truth condition generalizations. There is, I believe a third reason to think that meaning holism and intentionalistic psychology are compatible, and a second reason to think that the latter might do all right without content generalizations. To see it, however, one must keep the following in mind. The sort of position that I am interested to defend here is the two-factor theory of Block and McGinn. As I said earlier, such a view can be squared with meaning holism if the two-factor theorist grants the holist that any difference in epistemic liaisons entails a difference in content. The two-factor theorist will insist, however, that you don't get content just from liaisons-you need a reference-fixing causal component too. In fact, a natural way to understand this kind of theory is that the reference-fixing component generates a truth condition. But the content of the state is not identical with the truth condition; you get the former only when you combine the latter with the state's functional role.

Now admittedly, this is quite sketchy. But if this kind of theory can be fleshed out, it could provide us with significant generalizations which look very much like the content generalizations that might be imperilled by meaning holism. This point can be further clarified by considering an objection to my claim that psychology can get by with variable generalizations. Here is an example of a rather silly, but more or less accurate, psychological generalization [9]:

[P]: If you eat peanuts, then, *ceteris paribus*, you want to eat more peanuts.

Now [P] looks like a true content generalization; furthermore, if you convert it into a variable generalization, it will no longer be true. As a variable generalization, [P] becomes:

[P]: If you eat x, then, ceteris paribus, you want to eat more x.

[P] is a rather pitiful generalization; one can think of a whole host of counterexamples (e.g. dog food, rotten peanuts, and Brussels sprouts). So [P] appears to be just the sort of principle that will help make Fodor's case. Now if meaning holism does require that psychologists cannot employ content generalizations, how can we successfully capture what is expressed by [P]?

The two-factor theorist has what appears to be a promising answer: the content of a desire will be a combination of its satisfaction conditions and its functional role, just as the content of a belief will be its truth conditions and its functional role; so instead of taking the consequent of [P] to refer to the content of a desire, take it to refer to the state's satisfaction conditions. Since satisfaction conditions are independent of functional role in that they get fixed by other factors, the considerations that might tempt one to think that meaning holism makes content generalizations useless for an intentional psychology should be seen to be irrelevant to the question of the theoretical utility of satisfaction (and truth) condition generalizations.

Getting back to the peanut case, it seems very plausible that the truth of this generalization is independent of the particular functional role of the state. [P] indicates that if you eat peanuts then it is likely that you will enter a desire state which will only be satisfied if you eat more peanuts. And this will be the case whether or not you think that peanuts have too much cholesterol or are the preferred food of elephants. Block makes essentially this same point:

[T]o the extent that there are nomological relations between the world and what people do, wide meaning [or 'truth conditions'] will allow predicting what they think and do without information about how they see things. Suppose, for example, that people tend to avoid wide open spaces, no matter how they describe these spaces to themselves. Then knowing that Fred is choosing whether to go via an open space or a city street, one would be in a position to predict Fred's choice, even though one does not know whether Fred describes the open space to himself as 'that', or as 'Copley Square'. (Block, 1986, pp. 620-621)

The point here is that if the particular content of an intentional state matters for the purpose of psychological generalization, it is reasonable to suspect that this is because of certain nomological relations between the external state of affairs that the mental state represents and the behavior of the subject. But if that is what is important, then, once one recognizes that truth conditions [10] are only one determinant of content, one will see that it is not the content per se that is of psychological significance here, but only the state's truth conditions. So, with regard to the peanut generalization, if in fact there is a nomological connection between one's eating peanuts and one's entering a desire state with the satisfaction conditions 'I eat more peanuts', then it is plausible to think that folk generalization [P] is true in virtue of the connection between the behavior and the satisfaction conditions, and not the content, of the state.

Having said all of this, let me now back off just a bit. This third response (as well as the second) seems to me unnecessary. For it seems clear that Fodor has given us no good reason to think that meaning holism entails that psychology cannot usefully employ content-generalizations. My first reply to Fodor in this section is meant to show this. And if for some reason I cannot see, content generalizations were illegitimate or useless, then I would think that psychology could be composed primarily of variable generalizations; what I have called 'truth condition' generalizations would play a quite minor role, if any.

Let me sum up section VI. The two-factor theorist has a three-pronged response to Fodor's argument that meaning holism is inconsistent with a realistic intentional psychology. For even if meaning holism is true: (i) there is no good reason to think that content generalizations are useless since the psychologist can either include a disjunction of finely-individuated, content-similar intention states in the generalization's antecedent or he can identify more coarse-grained folk contents with disjunctions of more finely-individuated content-similar states, and leave the antecedents with single contents; (ii) in the event that (i) is not satisfactory, the psychologist will still have variable generalizations to use, and it appears that a great number of psychological generalizations are of this kind; and (iii) finally, even if there are a few content generalizations that cannot be converted to their variable cousins without becoming false, it is plausible that such generalizations are true in virtue of the truth conditions of the intentional states; the content generalizations are true only because the truth-condition generalizations are. And the truth of meaning holism clearly does nothing to imperil the theoretical utility of the latter. So it seems that Fodor's worries about meaning holism are ill-founded, at least for holism combined with a two-factor theory of content.

VII. Conclusion

The question of how mental states get their content is among the more important questions in contemporary philosophy of mind. Answers do not come easy and neither do refutations of views incompatible with one's own. It seems to me that Fodor does a disservice to functional-role semantics in general and two-factor theory in particular; they are not as readily disposed of as he thinks. Furthermore, even if it should turn out that meaning holism is true, I don't see any reason to think that we should despair over the chances of getting a realistic intentional psychology. Such a psychology is compatible with meaning holism; or at very least, Fodor has done nothing to give us good reason to suspect otherwise.

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Notes

[1] *I do not mean to be asserting any strict supervenience thesis. The only point here is that humans have a mental life in virtue of what goes on in the central nervous system.*

[2] *The words are Fodor's, although I have things arranged a bit more formally than he does.*

[3] *The expression 'propositional attitude type' is ambiguous. Such types can be either believing, desiring, and the like or they can be believing-that-p, believing-that-q, desiring-that-p, desiring-that-q, etc. I intend this second, more fine-grained understanding.*

[4] *Actually, Fodor admits that, strictly speaking, step 1 is true. However, he insists that once you understand how it is true, you see that, on the reading, there is no reason to suppose that step 2 is true. What Fodor is willing to grant is that if step 1 is true in the way that meaning holism proponents think that it is, then step 2 follows and meaning holism is established.*

[5] *of course Fodor thinks that the denotational theory can solve this and other difficulties. He spends the final part of Chapter 3 and all of Chapter 4 explaining how that is the case.*

[6] *I am using the term 'two-factor theories' to pick out a class of theories of psychosemantics (i.e. theories about the meanings of psychological states). The expression is sometimes used in a more general way to denote certain theories of linguistic meaning as well.*

[7] *In his discussion of narrow and wide content, Block often uses the expressions 'narrow meaning' and 'wide meaning.' Early in his essay, he is interested in meaning in general and he wants to make the narrow/wide distinction for sentences (and perhaps words) as well as for mental states. However, when he is talking of the semantics of propositional attitudes he uses the locution 'narrow (wide) content'. Since it is the semantics of mental states that I am interested in here, I will use 'content' and not 'meaning' when I speak of the narrow/wide distinction.*

[8] *of course, having an intentional state mentioned in both the antecedent and the consequent is not necessary for a generalization's counting as 'intentionalistic'. It is sufficient that references to such a state be made in either clause of the conditional.*

[9] *I take this example from the comments that I received on an earlier draft of this paper by an anonymous referee for Philosophical Psychology.*

[10] *From here on, when I speak of truth conditions and their role in content, I should be taken to mean 'truth conditions or satisfaction conditions' since satisfaction conditions are to desire content what truth conditions are to belief content.*

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