PSYCHOLOGICAL EXPLANATION AND BEHAVIOR BROADLY CONCEIVED

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ABSTRACT. I argue that a broad conception of behavior makes considerable headway toward an account of psychological explanation that preserves the intuitive correctness of belief/desire (folk) psychological explanations and whose explanatory utility is not undercut by neurophysiological explanations. The rough idea behind a broad conception of behavior is that the basic units of behavior, which constitute the primary explananda of psychology, are themselves essentially goal-directed. As such, behavior supervenes on more than the (local) physical properties of the bodily motions which (in part) comprise it; it supervenes also on the historical/teleological properties that give it its goal (or function).

I do not argue here directly for broad behavior; this can found elsewhere. My case for a broad conception of behavior consists of arguing that such a conception leads to an account of psychological explanation that is more successful than standard accounts. I begin by setting out the problem of psychological explanation and then develop adequacy conditions for (naturalistic) accounts of psychological explanation that attempt to reconcile belief/desire (folk) psychological explanation schemes and neurophysiological explanation schemes. I consider three prevailing accounts of psychological explanation with respect to the proposed adequacy conditions. Finally, I present a sketch of an explanation scheme that utilizes broad behavior and argue that it fares better than prevailing accounts with respect to the adequacy conditions.

The adequacy conditions that I develop are not conditions necessary for adequacy simpliciter; rather, they are conditions necessary for a neurophysiological-based account to make sense of belief/desire explanations. Failing to satisfy these adequacy conditions means that the account fails to make essential (indispensable) explanatory use of the content of mental states. Thus such an account is inadequate (or mistaken or wrong) only relative to the desideratum of making essential use of the content of mental states. If one believes (as I do) that this desideratum is a reasonable one, then he may be willing to conclude from this that such accounts are mistaken simpliciter; I am not, however, arguing for that further step here.

Nor am I attempting directly to contribute to the case for broad mental content even though the explanation scheme for which I argue construes broadly the mental

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states invoked to explain the broad behavior. The adequacy conditions are motivated by considerations from explanation in general and the requirement that belief/desire explanation be meaningfully preserved, and as such they do not depend on particular views of content. So while it might be possible to argue for the adequacy conditions based on arguments for broad mental content, I attempt to motivate them independently of such arguments. In the end, if successful I will have shown that the best approach with respect to the adequacy conditions makes use of broad mental content as well as a broad conception of behavior, and this of course may be taken as an independent and indirect case for broad content.

Psychological Explanation

Within psychology, belief/desire explanation is being threatened with a fate similar to that of thermodynamic explanation within physics: Being reduced to a different type of explanation in a way that undercut its explanatory role. Thermodynamics (laws relating the macro-properties of temperature, pressure, volume, and flow of heat) is no longer regarded as explaining the regularities it describes; instead, statistical mechanics (laws relating molecular-level properties that correspond to, among other things, temperature, pressure, and volume) provides the explanations.2 Belief/desire psychology, which explains behavior in terms of the agent’s belief and desires, is being similarly threatened by neurophysiology which proposes to explain the same behavior solely in terms of the neural/physical properties of the brain. But why should this be a worry? No one grieved for thermodynamics. Why resist progress? The difficulty in giving up belief/desire psychology is that intuitively it seems so right to invoke beliefs and desires to explain behavior, and regretfully, nothing in the neurophysiological scheme seems up to replacing beliefs and desires in this respect. Hence the hue and cry over its future. The challenge is to come up with an account of psychological explanation that somehow reconciles neurophysiology and all its scientific credibility with belief/desire psychology and its intuitive plausibility. Of course, what makes this difficult is that the reconciliation (not reduction) must be brought off in a way that preserves the essentials of each approach. So now a few words on the essentials of each.

The explanandum is behavior; exactly how this behavior is to be construed shall be left vague for now. The explanation is to have a psychological flavor: It will involve invoking mental states. Traditionally these mental states have been beliefs and desires: I played the spade queen because I believed it would draw the remaining trump and I desired to have them gone. (This is intuitively strong but short on scientific specifics.) What is essential to these mental states (and hence to this approach) is that they are intentional, that is, they have content. The mental states are about something in the world.

Developments in neurophysiology have suggested that why bodies do what they do can be (causally) traced back along the peripheral nervous system through the spinal cord to the brain. Thus what one does can be explained by explaining how and why the brain does what it does. This explanation will naturally be a function of all
sorts of (neural) inputs and preexisting (neural) states, but—and this is crucial—it will not involve any intentional mental states. The “mental” states invoked by such an explanation will be purely neurophysiological states. This is the neurophysiological approach to psychological explanation: My body moved the way it did because my neural function $A$ executed neural function $B$, which in turn executed motor function $M$. (Scientifically sound, but intuitively it leaves something to be desired, so to speak.)

Accounts of psychological explanation that attempt to reconcile folk psychological and neurophysiological explanation schemes are not scarce. Much of the discussion surrounding these accounts has to do with the idea of causality: causal efficacy of content, supervenient causation, etc. In working out adequacy conditions by which to evaluate these accounts, I propose to approach things from the perspective of explanation, as opposed to the more prevalent, though more problematic, causal perspective. Considerable effort has been directed towards trying to work out general causal principles that legitimate belief/desire explanations, and yet none of these efforts seems to be very successful. The lesson is that there probably is not a general causal principle that will suffice. Since explanation is really the issue here, it seems well-advised to dwell upon it and let causation fall where it may. Certainly the ideas of explanation and causation are related.

Explanation is notoriously difficult to characterize in general and equally thorny when restricted to science. I will follow the “naturalized” program in assuming that the examples of good explanation found in science should be taken as our guides. For the purposes of this paper, the working conception of explanation I employ can be characterized in terms of illustrating what “makes it the case” that $X$, where $X$ is the phenomenon to be explained. This characterization is useful because it is compatible with two importantly different but equally legitimate species of explanation: 1) explanations that involve exhibiting efficient causes that “make it the case” that $X$, and 2) explanations that involve exhibiting structural properties that make it the case that $X$.

In summary, what we seek is a position that somehow links mental states to neurophysiology in a way that makes use of the explanatory, ontological, and causal legitimacy of the neurophysiological account, while still allowing an essential explanatory role for mental states.

**Adequacy Conditions for Psychological Explanation**

Accounts of psychological explanation typically begin by distinguishing different levels of explanation: Belief/desire explanations explain what we do at a different level from neurophysiological explanations. At the core of this hierarchical arrangement of explanation schemes is the notion that higher-level explanations (belief/desire) are explanatorily dependent upon lower-level explanations (neurophysiological). The relationship of “explanatorily dependent” should be understood as “can be explained in terms of.” The relationship of explanatory dependence holds between explanatory schemes in virtue of the explanatory machinery of one scheme being “explained by” the explanatory machinery of the
other. Thus even the explanations of as “basic” a science as chemistry explanatorily depend on the concepts of atomic physics, (e.g., the concept of pH is dependent on the concept of hydrogen ions), and so too with the other sciences such as biology, psychology, geology, and economics.

Explanatory dependence must be carefully distinguished from another relationship that may obtain between explanatory schemes: A higher-level explanation scheme, even while being explanatorily dependent upon a lower-level scheme, may nonetheless be able to capture (describe) and explain something above and beyond what the lower-level scheme is able to explain. In this sense a higher-level explanation scheme need not be explanatorily contained in the lower-level scheme upon which it explanatorily depends. Explanatory containment holds between explanatory schemes in virtue of the scope of the explanatory power of one being greater than the scope of the other; it holds when the set of possible explananda of one scheme contains the set of possible explananda of the other scheme. Notice that explanatory containment concerns what the explanation scheme can explain, while explanatory dependence concerns the concepts used by the scheme to do the explaining. I take it as a given that at least some higher-level (non-physics) science (e.g., chemistry, biochemistry, biology, psychology) are not explanatorily contained in physics.

What is it, then, that chemistry, for example, describes/explains that physics does not? The short answer is structure. Chemistry characterizes and organizes particles based on how they act and react with other particles under different conditions, that is, based on their chemical structure. It picks out certain types and patterns among physical particles—chemical types and patterns. This is why a chemistry explanation can in turn be recast in terms of physics; however, the resulting explanation is a different one from the chemistry explanation. Only the chemistry explanation shows how the phenomenon fits into chemical types and patterns. Any particular chemistry explanation can be recast into a physics explanation, but this is not to say that the whole of the explanatory scheme that is chemistry can be “reduced” to physics.

This idea of different levels of explanation seems to embody the spirit behind several of the most important accounts of psychological explanation. This rough idea is present in Kim (1984a, 1984b) in the idea of supervenient causation, in Fodor (1987, 1989) in his syntactic/semantic distinction, and in Dretske (1988) and the triggering/structuring cause distinction. These accounts can be seen as partitioning what is naively taken to be psychological explanation into two domains: Quite naturally, the belief/desire domain is taken to be explanatorily dependent on the neurophysiology domain. The challenge is to pull off the partitioning act in a way that the belief/desire domain is not also explanatorily contained in the neurophysiological domain, thereby avoiding an (eliminative) reduction.

Attempts to reconcile the two explanation schemes by means of this partition will be successful to the extent that their respective accounts of (higher-level) belief/desire explanations depend on the essential feature of the mental states—their content. Content (or intentionality) is what distinguishes a mental state from a brain state, thus the content of the mental state must be explanatorily indispensable if a
reduction is to be avoided. This is the meta-condition for the adequacy of an account of psychological explanation:

(MCA) A successful account of psychological explanation will make essential use of the content of the mental states it invokes to explain behavior.

From this meta-condition and the above considerations, we have the following restriction on accounts of psychological explanation:

(AC1) An adequate account of psychological explanation must not render belief/desire explanations as explanatorily contained in the neurophysiological explanation scheme.

Violating (AC1) is sufficient but not necessary for violating (MCA); there is another way an account of psychological explanation could fail to satisfy (MCA). In other words, an account of psychological explanation might not construe belief/desire explanations as being explanatorily contained in the neurophysiological explanation scheme, and yet still violate (MCA). This could happen if the higher-level explanation scheme’s additional explanatory power were explanatorily irrelevant with respect to the explanandum. As an illustration, consider the following example.

Suppose the explanatory goal of some fictitious science were the same as chemistry (i.e., something like characterizing the “chemical” patterns, types and structures of physical things), except that in addition to being explanatorily dependent on physics (as ordinary chemistry is), it also explanatorily depends on $L_u$-properties, where $L_u$-properties are properties having to do with where, relative to the center of the universe, objects are located. $L_u$-chemistry would have the ability to capture and explain more structure than chemistry (it could generate a finer-grained classification system and pick out patterns within this), and hence would not be explanatorily contained in chemistry. But $L_u$-chemistry would not be using $L_u$-properties in an explanatorily indispensable way. The problem with $L_u$-chemistry is that the structure it captures (beyond that which chemistry captures) is not reflected in the phenomena it is supposed to explain. The phenomena that $L_u$-chemistry (and chemistry) explain are not sensitive to $L_u$-properties. The explanandum does not explanatorily require the (further) structure-capturing capability of $L_u$-chemistry—it is not justified by the phenomena to be explained. Thus we have the second (and final) adequacy condition:

(AC2) A psychological explanation scheme’s additional (beyond that of neurophysiology) structure-capturing capability must be justified by the phenomena it is to explain (behavior).

Before considering particular accounts of psychological explanation with respect to the adequacy conditions, it would perhaps be helpful to review precisely what sort of “adequacy” is at issue.
I offer the adequacy conditions as conditions that must be met by an explanation scheme, if it is to meaningfully preserve belief/desire explanations. I use these conditions in the next section to critique prominent accounts of psychological explanation. The adequacy conditions are motivated by considerations coming from explanation in general and the desideratum that belief/desire explanation be meaningfully preserved, and as such they do not depend on particular views of the nature of content. So while the accounts of psychological explanation that I consider below might be critiqued on the basis of how plausible an account of content they employ, this is not my project. My critique is intended to be independent of the narrow/broad content debate.

**Adequacy Conditions Applied**

This section falls into four parts; the first sets the theoretical stage for the subsequent parts which deal with each of the three prevailing accounts of psychological explanation. I take these three accounts to be representative of three important approaches to the problem. They include a narrow (individualistic) approach, a broad (anti-individualistic) approach, and Dretske’s (1988) approach.

**Functionalism, Physicalism, and Supervenience**

In their respective accounts of the relationship between belief/desire explanations and neurophysiological explanations, each of these three approaches employ a standard type of account of the mind within philosophy of psychology/mind circles: a functionalist account. Functionalist accounts, while committed to an ultimately physicalist account of the mind, reject the reductive identification of mental states with brain states. Hence, they construe mental states as functionally characterized by their causal role in the organism’s system of responses, both internal and behavioral, to its environment. Accordingly, a mental state $M$ (say, of believing that $p$) is what it is because it is a state that is caused (either directly or indirectly via other mental states) by certain environmental conditions appropriately related to $p$ and in turn causes other mental states or external behaviors also appropriately related to $p$.

The notion of function that is employed by these functionalist accounts varies; the philosophical literature is rife with appropriately objective accounts of function. The general type of the one I employ in this paper is etiological: Functions are identified with dispositions having a particular causal history. The appropriate history may involve the causal role of an intentional representation of the goal state during a learning period, or for “inherited” functions, the disposition in question may have been “selected” by advantageous consequences it had for its possessors. Accordingly having a function is an objective property consisting of two distinct components: (a) a dispositional component realized in some structural property of the character, and (b) a historical component that includes the etiology of the disposition. Thus the property of having a function depends (supervenes) on more than the structural/physical properties involved; it also depends on the historical properties
that give us the etiological component. Two dispositions that have the same structural (physical) instantiation may nonetheless differ in functional properties if they do not share the same historical properties. So, for example, the heart has the disposition to make certain motions that result in the circulation of blood; to attribute to the heart the function of circulating blood, however, is say more than this: it is also necessary that the (causal) history of hearts be such that the reason that hearts have a structure that realizes this disposition is due to the fact that exercising this disposition in the past had advantageous consequences for organisms possessing them. It follows then as a logical possibility that there could be a physically identical structure to the heart that did not have the function of circulating blood; in particular this would be the case if such structures had come about by means not having to do with advantageous consequences and hence did not have the necessary historical (etiologial) properties. (See Enç and Adams 1992 for discussion and examples.)

This functionalist approach to the mind severs any sort of “identity” connection between a mental state and the particular physical material of which it is composed. A particular kind of mental state, say, believing that the earth is round, can be physically instantiated in any number of functionally equivalent ways in a given mental (functional) system, and mentality in general is theoretically realizable in any sort of physical system that allows for appropriate functional/causal relationships between environment, behavior, and other internal states. This relationship between functional (mental) properties and underlying physiological properties, which is not one of identity in any straightforward sense and yet does involve sufficient ontological dependence to remain physicalist, is characterized by the term supervenient.

The notion of supervenience is used to describe a relationship between families of properties (e.g., mental/physical, or aesthetic/physical) that is one of asymmetrical determinate dependence. To say that a family of properties $M$ supervenes on another family of properties $P$ is to say that given a particular set of $P$ properties, this determines a unique set of $M$ properties, and yet there may be multiple $P$ property configurations that determine this same set of $M$ properties. In other words, it allows for a one-to-many determinate dependence of $M$ on $P$: If two objects have all the same $P$ properties, then they have all of the same $M$ properties; and equivalently, if they differ in $M$ properties they must differ in $P$ properties. An example of supervenience can be seen between the goodness (understood functionally) of a kitchen knife and the underlying physical properties. Any particular good kitchen knife is entirely physical, and yet there is no determinate set of physical properties that make a knife good; the goodness of a kitchen knife consists in an open-ended disjunction of physical properties (see Enç 1986, p. 419). This is precisely the sort of relationship philosophers have in mind in asserting that each particular mental state is identical with a neurophysiological state, and yet mental kinds (functionally characterized) are not identical with determinate neurophysiological properties. But this is not to maintain that there is anything mysterious about mental states. The function of a character is always physiologically represented: There is a physiological structure that allows it to do what it does. The result of adding the etiological properties to the supervenience base is that then the physiology itself does
not determine function. Thus on the (etiological) functionalist account, the function of a mental state supervenes on the physiological and etiological properties and this entails that it is possible to have two physiologically identical brain states that are not the same mental state. As described above, this is because the etiological/historical properties play an essential role in individuating functions, and thereby play the same role in individuating mental states. But the historical properties (“past experience”) do of course result in physiological changes to the brain; in fact, this is called for in order for the mental state to have the function it does: The historical/etiological component has to be such that the reason the disposition is currently present is due to favorable consequences of its exercise in the past. Roughly speaking, a brain state or bodily motion gets appropriately reinforced (or selected), which naturally has an effect on the brain (and/or gene pool), and this disposition in concert with the etiological/historical component gives rise to a function which constitutes a novel mental state.

What is different in the accounts of psychological explanation that follow is not whether mental properties supervene on physical properties, but rather how broad the supervenience base of physical properties needs to be. Narrow accounts require that mental states supervene on only the internal neurophysiological properties of the organism; broad accounts broaden the supervenience base to include relational and/or historical and/or etiological properties in addition to the neurophysiological properties. Finally, while this sketch is clearly an oversimplification of the functionalist account, it should provide a framework for critically approaching the three prevailing accounts of psychological explanation with respect to the adequacy conditions developed above.

A Narrow Approach

The narrow approach has probably been most notably advanced by Fodor (1987, 1989, 1995) and is an approach to psychological explanation based on a narrow approach to the individuation of mental states. According to Fodor, science (including psychology) is concerned with causal explanation. As such, the individuation of the explanatory building-blocks, in this case intentional states, must be based on their causal powers. While certain broad, relational properties of intentional states (e.g., properties relating an organism’s bodily states to external factors) might be relevant to the semantics of the intentional states, since these properties do not affect the causal powers of the intentional states, they are irrelevant to how psychology should individuate the intentional states. Hence the taxonomy relevant to psychology is one in which the intentional states supervene on only the physiological properties of the organism.

The account of explanation that Fodor advocates goes as follows. Even though it is the “syntactic” (neurophysiological) properties of the mental state that causally produce the behavior (taken to be raw bodily motion), the “semantic” (intentional) properties are “respected” by the causal route taken via the syntax. Thus, explaining a piece of behavior in terms of the content of a mental state constitutes a perfectly good
explanation in virtue of the “mirroring” relation between the mental state and its
neurophysiological (functional) role within the system.

In Fodor (1989) this sort of (causal) explanation scheme is likened to how
higher-level (causal) explanation works in other (non-physics) sciences in which an
underlying “causal mechanism” underwrites the explanation. Thus, explaining
behavior in terms of meaning is just like explaining why a chemical dissolves in
terms of the solvent’s pH—both depend on lower levels (neurophysiological
properties and properties of H+ ions, respectively). But this apparent credibility
borrowed from science is illusory according to (AC1). Because of the “mirroring”
relation between the syntax-level and semantic-level, semantic-level explanations are
precluded from capturing any more structure than is captured by syntactic-level
explanations. Thus the belief/desire (semantic) explanation scheme fails to go beyond
the neurophysiological (syntax) explanation scheme, and thereby fails to satisfy
(AC1). This makes the mental states (qua content) explanatorily dispensable (in
violation of MCA).

Notice that this account does satisfy (AC2): The additional structure-capturing
capability of the mental states (beyond that of neurophysiology) employed by this
explanation scheme is justified by the phenomena—vacuously, however, since there
is no additional structure-capturing capability beyond that of neurophysiology. A
moral here seems to be that if explanatory containment and its unhappy consequence
is to be avoided, then the mental states had better not be too closely tied to the
neurophysiological states. The obvious way of accomplishing this is to construe the
mental states as supervening on more than the neurophysiological properties of the
organism.

A Broad Approach

The broad account, unlike the narrow one, individuates mental states based on a
conception of content that depends on things “outside the head” (relational
properties) in addition to the internal physical properties of the organism. Thus the
mental states supervene on the internal physiological properties of the organism and
on such external, relational properties: It is in this sense a “broad” account.

Leading proponents of broad views of content are Putnam (1975) and Burge
(1979, 1986). In this section I consider and critique a naive broad content account of
psychological explanation. The account is naive in that it takes the explanandum to
be raw bodily motion as opposed to (intentionally, relationally or otherwise
individuated) behavior; I do this in order to illustrate and motivate the direction I am
urging for psychological explanation—a direction which does in the end involve both
broad content and a “broadier” conception of behavior. The naive psychological
explanation scheme that broad content gives rise to is something like the following:
A piece of behavior (construed as raw bodily motion) is explained by showing how
the mental state, which accounts for the behavior in virtue of the neurophysiological
state on which it partially supervenes, fits into the mental types and patterns in virtue
of the historical properties on which it also partially supervenes.
Notice first that this explanatory scheme does capture more structure than does the neurophysiological scheme. It does so by being sensitive to the external properties (content) of mental states as well as their neurophysiological properties; this allows it to generate different types and recognize different patterns, thereby capturing more structure. Thus the broad content approach is not explanatorily contained in the neurophysiological scheme and avoids being undone by (AC1). But it is not out of the woods yet. Consider again the explanation. The phenomenon it is supposed to explain is a piece of behavior (bodily motion), but as we know, relative to the phenomenon of mechanical bodily motion, the neurophysiological account seems to be complete—just as chemistry completely explains what it does. Thus the underlying neurophysiological state, upon which (among other things) the belief/desire state supervenes, seems to account completely for the bodily motion (behavior). This urges the following question: What explanatory work is left for the content?

A broad content proponent must, presumably, answer this by maintaining that the content of a mental state explains how the mental state fits into the world of mental types and patterns: It helps capture the additional structure that prevents the explanatory scheme from being contained in neurophysiology. With respect to the phenomenon to be explained, however, this is not explanatorily relevant work. This additional structure is not justified by the phenomenon to be explained. Bodily motion does not explanatorily require this further structure-capturing capability; it is not sensitive to content—just like the phenomena that chemistry captures is not sensitive to Lu-properties.9

The content-insensitivity of behavior (so conceived) can be seen by considering the taxonomy based on content. Such a taxonomy could not be explanatorily motivated by the behavior because indefinitely many of these content types may correspond to a given behavior. Consider a behavior B and the (broad) mental state MS = NS + EP that purports to explain it, where NS is the underlying neurophysiological state, and EP are the further historical/external properties that help individuate it. One may then pick any other mental state MS′ that supervenes on the neurophysiological state NS plus some other historical/external properties EP′, and this new mental state also explains the behavior—regardless of its content. Thus the scheme falls prey to (AC2).

Like the narrow approach, this simplistic broad approach has problems satisfying the adequacy conditions, and thus (MCA). It did succeed in satisfying (AC1) by “broadening” the supervenience base for content and thereby easing the tie between its belief/desire states and the neurophysiological states. Unfortunately, however, this “broadening” of the mental states by injecting more into the supervenience base seems to disrupt the explanation scheme’s focus on the phenomena to be explained (behavior as bodily motion). There seems to be a rock and a hard spot looming. On one hand, if one omits the extra element from the supervenience base one suffers the fate of the narrow approach—(AC1) problems. On the other hand, if one includes the obvious extra element and goes the way of the naive broad content approach, one suffers (AC2) problems. Two options come to mind at this point: 1) search for less disruptive (but also less obvious and more
contrived) ways in which to broaden the supervenience base, or 2) defuse the
dilemma by rethinking behavior. Dretske deftly opts for the latter approach.

*Dretske’s Approach*

Dretske’s account of content is a broad account. A mental state $C$ *indicates* $F$ if it is tokened only when $F$ is present. The mental state $C$ may come to *represent* $F$ if it is recruited (via a *learning period*) as a cause of a bodily motion $M$ *because* of what it indicates. A mental state has content precisely when it has come to represent something. Thus content supervenes on historical properties as well as the internal physical properties of the organism.

As mentioned above, Dretske’s explanatory scheme redefines behavior: Behavior is taken to be the *process* of the mental state causing the bodily motion. Dretske calls the cause of the *motion* (neurophysiological events including the tokening of the mental state) the *triggering* cause; he calls the cause of the *behavior* (the historical events that constitute the learning period and lead to the mental state being recruited as a [triggering] cause of the motion) a *structuring* cause. Dretske takes the explanation of behavior to fall into the camp of structuring causes:

> In *Explaining Behavior* (1988) I identified behavior with a causal process (some internal event, $C$, causing bodily motion, $M$). A causal explanation of behavior was then a description of (what I am now calling) the structuring cause of $M$: the earlier event or state that caused the system to be in the condition ($B$) in which tokens of $C$ cause tokens of $M$: . . . Behavior, what it is we invoke mental states to explain, is a causal process ($C \rightarrow M$) having (typically) bodily movement ($M$) as its product, not the bodily movement ($M$) itself. Hence, to explain behavior, why $C$ is causing $M$, we need to find the cause (or explanation) for $C$’s causing $M$ or what I am now calling the structuring cause of the movements, $M$, that (in part) constitute the behavior. (Dretske 1993, p. 126n.)

It should be clear from the preceding discussion that, as a *broad content* approach, this scheme captures more structure than does a neurophysiological scheme, and so is not explanatorily contained in the neurophysiological scheme. Thus, (AC1) is not a problem.

More importantly, on the revised conception of behavior, mental states do not explain behavior *merely* in virtue of their underlying neurophysiological properties. They explain the behavior in virtue of their content. Content explains why the mental states cause the bodily motion they do—and this is behavior. So it appears that this scheme has cleared (AC2) as well. There are more subtle difficulties, however, with Dretske’s account. To draw them out we must look more closely at his account of how the mental state acquires content:

> Once $C$ is recruited as a cause of $M$ *because of what it indicates* about $F$, it thereby acquires the function of indicating $F$. It becomes a representation of $F$. At the same time it comes to represent $F$, the fact that it represents $F$ becomes relevant to explaining the behavior ($C$’s causing $M$) of the system of which it is a part. (Dretske 1990, p. 785)
PERESSINI

Notice the structure of this process: suppose at time $t_0$, $C$ is recruited as the cause of $M$ and comes to represent $F$; thus presumably prior to $t_0$ (the time of $C$’s recruitment as the cause of $M$), the behavior $B$ ($C$’s causing $M$) did not yet exist since $C$ had not yet been recruited as the cause of $M$. This means that $B$ becomes $B$ and $C$ comes to represent $F$ at the same time $t_0$. But then the phenomena to be explained ($B$) and the fact that helps explain it (the fact that $C$ represents $F$) came into being, as it were, simultaneously. The simultaneity of explanandum and explanans is prima facie troubling—especially if one is seeking causal explanation. The “closeness” of explanation and causation, and causation’s distinctly non-simultaneous character, is probably why the simultaneity of explanandum and explanans is troublesome. If explanation necessarily required exhibiting a cause in the efficient sense, then this would likely be a problem; but as we have seen it does not and so we must look elsewhere to determine whether this is a genuine problem for explanation.

Such a close link between two events often indicates a common cause. And indeed, it does appear that there is a common explanation for both the behavior $B$ and $C$’s representing $F$, namely, $C$’s indicating $F$ (through a learning period). So perhaps it is wrong that $C$’s representing $F$ explains $B$, and instead $C$’s representing $F$ and $B$ are both explained by $C$’s indicating $F$. But if this is so, it explains each in different ways, for $C$’s indicating $F$ (through a learning period) explains $C$’s representing $F$ in a constitutive sense, while it explains the behavior $B$ in a causal sense. Additionally, it is not clear that this explanatory setup proscribes explaining $B$ by citing $C$’s representing $F$—similar explanations seem to work in science. Consider the case of a liquid dissolving a plastic cup. This might be explained by saying (perhaps among other things) that “it dissolved because the liquid had pH=2.” In this case we are explaining the fact that the cup dissolved by citing the fact that the liquid had pH=2, but there appears to be a common explanation for each of these facts, that is, that the number of $H^+$ ions per liter was greater than $10^4$. Furthermore, this fact explains the liquid’s having pH=2 in a constitutive sense, while it explains the fact that the cup dissolved in a causal sense. If this sort of explanation works in chemistry, why should it be a problem for Dretske’s scheme? Rather than pursue whether this result is a genuine problem, I will argue that the very feature of Dretske’s account that gives rise to this explanatory structure is wrong for different, though related reasons. The problematic feature is his conception of behavior itself.

It should be clear that it is Dretske’s conception of behavior as consisting of the process of mental state $C$ causing motion $M$ that gives his explanatory scheme this particular structure: That the explanans (the representational mental state) constitutes (in part) the explanandum (the behavior) enables what (causally) explains the explanans (the proto-mental state indicating through a learning period) to also (causally) explain the formal explanandum. There is, however, a problem with this conception of behavior: It entails too fine-grained identity conditions for behavior.

Dretske’s account of (intentional) behavior introduces a further link between behavior and explaining mental state—a constitutive link. This is definitely a departure from other accounts of psychological explanation: On such accounts the phenomena to be explained (behavior) by a mental state(s) begins after the mental state that explains/causes it. I will argue that there are distinct drawbacks to
construing behavior in this way with respect to a) scientific utility; b) continuity of scientific vocabulary/conceptualization with the ordinary pre-theoretical usage; and c) the problem at hand, namely, the explanatory/causal efficacy of the content of mental states.

Notice first that the constitutive link leads to a way of individuating behavior that has the following result: The same behavior cannot be explained by different mental states, or equivalently, different mental states explaining the same motion give rise (necessarily) to different behaviors. Consider the following example as an illustration of this result.

**Example 1**: Suppose I am in the habit of running 10 miles before breakfast because I believe it will help me remain healthy, but then suddenly I become convinced that it will really have the opposite effect on my health. Suppose further though that I also become convinced that I will not be able to study philosophy efficiently if I change my running practices, and so, of course, opting for philosophy over health, I do not change my running practices.

In this example, there is an important sense in which what I do (my behavior in the pre-theoretical sense) does not change—I continue to produce all of the bodily motions that together constitute running ten miles before breakfast; however, the mental state that explains this “behavior” does change. It changes from a belief/desire pair concerning running and health to a belief/desire pair concerning running and philosophizing. On Dretske’s account, the original behavior, being (in part) constituted by the mental state that explains it, does not survive the change in the explaining mental state and thus becomes a different behavior. Consider a second example from a learning perspective.

**Example 2**: Consider a one-year-old child, Mason, who has learned that when he makes a certain grunting sound he will get the smiling eye-contact of a parent, and he makes this sound when he wants such attention. Suppose Mason goes on to learn that if he makes this sound when his parents are eating something, he will get a bite and does so when he wants a bite.

Again, Dretske’s account would suggest that the baby has developed a new behavior in learning to grunt for a bite, since the mental state that explains the sound is different from the one that explains the sound made for eye-contact. But again, there is an important sense, a neurophysiological sense, in which what the child does remains constant, namely, the same grunting motor program is being executed, albeit with a different explanation/cause. This sense is especially important in describing and explaining what the child is doing during an intermediate learning period in which he is “experimenting” with the same “behavior” and eventually learning to use it to bring about new outcomes. On Dretske’s account we will get a new behavior at the end of the learning period once a new belief/desire mental state has been
recruited as its cause; however, no behavior persists during the learning period because the cause of the grunting is not the original mental state associated with it.

Thus I submit that Dretske’s account unhelpfully and unnecessarily ties behavior too closely to the underlying mental state that causes it. It is unhelpful in that it restricts our (scientific) conceptual scheme in a way that limits our ability to express important similarities in the data: Certain ensembles of bodily motions need for scientific/theoretical reasons to be able to be recognized as the same kind of phenomena (behavior) to be explained, despite the fact that they may in some instances have different mental states as their cause. Dretske’s way of individuating the phenomena (behavior), lacks the terminological/conceptual flexibility required to reflect such similarities in the phenomena. That this is an unnecessary move I show in the next section when I argue that the broad behavior scheme preserves the virtues of Dretske’s account without this restriction.

Secondly, while departing from ordinary usage of terms in a scientific vocabulary and conceptualization is inevitable to some extent, to do so without sufficient cause is to be eschewed. That Dretske does make such a departure in construing the explanandum (behavior) of psychological explanation as a process which includes the mental cause of the bodily motion is undeniable: Ordinarily speaking, what we do (voluntarily) is caused by and explained by what we think. Dretske’s construal of what we do as this causal process itself is not the same thing at all. Again, my case for broad behavior, if successful, constitutes an argument that this departure is insufficiently motivated.

Finally, the problem that motivates both this paper and Dretske’s account of behavior as presented in Explaining Behavior (and his other work) is one of the principle problems in contemporary philosophy of mind: the problem of what (if anything) the content of mental states can explain about what we do beyond what is explained by the physiological/neurological causes. Consequently, in this paper I am interested in psychological explanation schemes insofar as they attribute explanatory (if not causal) efficacy to the reasons a subject has for what he does. A solution to this problem will therefore be an account of psychological explanation that makes essential explanatory use of reasons (the content of mental states) in addition to neurophysiological causal properties of brain states. Such a solution need not preserve intact all the conceptual notions of folk-psychology, but it must preserve the essential role of reasons (content) in explaining what we do. But with respect to the problem of the efficacy of content there is another constraint on all this as well—the account of psychological explanation will be successful in solving the problem, which is necessarily framed in pre-theoretical terms, to the extent that its theoretical concepts match up with the terms of the (pre-theoretical) statement of the problem. It is clear enough that if someone cast the problem into a theoretical framework in such a way that behavior, which is the theoretical term for the thing to be explained (i.e., what we do), was defined to be something way off like “state of mind,” or “thunderstorms,” then we would not be inclined to concede that the problem had been solved—regardless of how elegant or useful the explanatory scheme was. I am arguing that Dretske’s definition of behavior (the thing to be explained, i.e., what we do) as the process of an internal cause C causing a bodily motion M hurts his case for
having solved the problem of the efficacy of content. Construing behavior as the process of \( C \)’s causing \( M \) is damaging because an essential part of the problem is generated by the tension between explaining what we do by invoking reasons and explaining what we do by invoking the neurological cause(s). By construing the explanandum as this process, the tension is eliminated because one of the competing explanation schemes (the neurological) has been removed from contention by incorporating the neurological cause of the motion into the explanandum. Now Dretske’s construal of behavior is not way off like “state of mind” or “thunderstorm”; in fact, it is downright brilliant, nevertheless it is enough of a departure to be fairly characterized as not directly solving the problem, but rather dissolving it. In some instances, dissolving the problem is the best we can do, but I do not think it is in this case. Broadly conceived behavior, as I argue in the following section, leads to an account that is more directly a solution to the original problem of the efficacy of content.

While Dretske’s novel conception of behavior is what enables his account to satisfy (AC1) and (AC2), it also is the source of problems for his account. His move to rethink behavior, however, is a move in the right direction. What is needed is an alternative conception of behavior that, like Dretske’s, succeeds in satisfying the adequacy conditions, but unlike Dretske’s, does so without sacrificing important characteristics of it.

**Broad Behavior**

Broad behavior is behavior broadly individuated. That is, it is behavior taken to supervene on more than the (local) physical properties of the bodily motions which (in part) comprise it.\(^\text{12}\) My development of broad behavior is built upon Enç’s (1995) idea of “molar units of behavior.”

**A Sketch of a Broad Behavior Explanatory Scheme**

Molar units of behavior are behaviors that an organism can directly produce. These units may be complex in that they may consist of a series of nervous/muscular system events which may include feedback moving from muscles up to higher-level control systems within the organism’s nervous system, as well as signals from higher-level control systems down to muscles. The units are produced directly in that they are “triggered” by higher-levels of the organism’s nervous system, and once triggered, require no further attention from the higher-levels to be completed; they may, in fact, be inaccessible to the higher-levels. Enç suggests that these are the “basic acts” that should comprise the explananda of psychology; his argument consists of first showing how simple learning (by Skinnerian operant conditioning) must suppose that such molar units exist, and then showing how current physiological theories of motor capacities of various organisms support the existence of such molar units by providing them with a neuromuscular basis.

Enç suggests further that there is evidence that (at least primitive versions of) these molar behavioral units are essentially goal directed, with the goals having been
selected by evolution. This line of reasoning is naturally headed toward the idea that more than just primitive versions of the molar behavioral units are essentially goal directed, and that in fact, most molar units are. My goal here is not to argue directly for this view, which Enç (1995) does, but rather to show that if it is right, it will help answer some old puzzles. I will, however, describe some examples to illustrate the approach.

The final ingredient in the broad behavior approach is the idea that goal-directed behavior must supervene on more than the physiology of the organism; it also supervenes on the historical/teleological properties that give it its goal (or function). Enç and Adams (1992) argue for precisely this claim. A rough summary of the case for broad behavior is as follows: The proper explananda of psychology are molar units of behavior; molar units of behavior are essentially goal directed; goal directed behavior supervenes in part on “broad” properties; therefore the proper explanandum of psychology is “broad” behavior.

As mentioned above, Enç (1995) focuses primarily on primitive organisms and what I will call simple units of broad behavior, but as he suggests, this should provide insight into how intentional behavior should also be viewed broadly. I will make this a bit more explicit.

Human behavior starts out (in infancy) just this primitive. Among our early units of broad behavior are crying, sucking, grasping, squirming, and babbling with the inherited goals or functions of (something like) getting attention, obtaining and ingesting nourishment, and developing motor and language skills. This repertoire of behavioral units comes in contact with various conditioning forces and various units are recruited for other goals/functions—these are goals/functions that are acquired though a learning process. Consider the child of Example 2: his grunt behavioral unit with an initial function of, for example, making an audible sound has been recruited through a learning process to achieve the goal of satisfying his desire for attention; he later learns that the same behavioral unit, when triggered while a parent is eating, will satisfy another of his desires—the desire to eat something.

Of course the repertoire of behavioral units is not static; it evolves via learning (variation seems to be naturally built into some inherited behavioral units to facilitate this, cf. Enç 1995, 528-29), and also as result of the physiological development of the individual. An example of a learned unit of broad behavior might be tying a tie. For some people, tying a tie has been sufficiently worked into their motor-memory that they simply “trigger” the motor program and, without further conscious attention, the result is a tied tie. The behavioral unit is simple in that it consists of one molar unit.

More complicated scenarios, such as Example 1 in the previous section, seem to involve complex behavioral units. The behavioral unit of “running ten miles before breakfast” clearly consists of many other behavioral units: some simple units (pounding the snooze button, tying running shoes, shuffling down the stairs, running), and some complex units themselves (getting appropriately dressed, stretching, etc.). But like the simple units (and this is what makes the complex unit a unit), this unit is unified by its function/goal; namely, to make it the case that I run ten miles before breakfast. There is an important sense in which I perform this complex unit directly as well: When I make the decision to “run ten miles before
breakfast” and trigger this behavioral unit, no further attention from my “higher-level control system” is required. This is not to say that I have a program in my motor memory to “run ten miles before breakfast” in the same way that I have one to, say, tie my tie. Nonetheless, at the higher-level where I decide what I will do tomorrow, I do not have to process the details of how and in what way I will do it and in this sense the complex unit is performed directly. The details are taken care of at a different, lower level of processing.

In explaining this complex behavior by citing belief/desire pairs, as folk psychology does, it is explaining the behavior not by explaining its component units of behavior, but rather by explaining the complex unit as a whole via its function—just as in the case of simple units of behavior. What is explained by my mental state consisting (in part) of the desire to be healthy is not the narrow behavior consisting of the bodily motions that I make in order to run 10 miles before breakfast. What is explained is the broad behavior consisting in part of the bodily motions that I make in order to run 10 miles before breakfast, and whose function it is to make it the case that I run 10 miles before breakfast. The function of the behavioral unit is “recognized” as a means of serving the function of the mental state under the prevailing conditions. My belief/desire mental state is required to explain why I produce a behavior whose goal it is that I run 10 miles before breakfast. A neurophysiological explanation explains the motions; it does not, however, explain the broad behavioral unit consisting of the bodily motions and its unifying function/goal.

There need be nothing mysterious about how the functions/goals of behavioral units are “recognized” as a means of accomplishing the function/goal of the mental state. The association will be the result of a learning period, during which time certain mental states are linked with certain behaviors (via their underlying physical instantiations). The term “learning period” should be understood in a broad sense. In non-intentional behavior, the function of the behavior is trivially a means to performing the function of the (triggering) “mental state,” as these both have evolved together serving one and the same function; in this case the “learning period” is an evolutionary “learning period.”

Though the above is merely a sketch of how the essentials of a broad behavior explanatory scheme would work, it will be enough to evaluate how the general approach fares with respect to the adequacy conditions.

The Adequacy of a Broad Behavior Explanatory Scheme

As the sketch of the broad behavior scheme suggested, the (content-bearing) mental states invoked to explain the (broad) behavior are also conceived of broadly. They are both broad in precisely the same sense: Both have a broad nature because they have a function which supervenes (in part) on the historical properties that give each their function.

It should be clear that this account, like its fellow broad content accounts, satisfies (AC1). It carves up mental states based on their function, where the function of the mental state is taken to supervene on more than the neurophysiological
properties of the brain. The function of a mental state supervenes also on the etiological properties by which the mental state came to have a function (content). The broad behavior account is able to generate different types and recognize different patterns, thereby capturing more structure. So like its fellow broad content approaches, the broad behavior account is not explanatorily contained in the neural physiology scheme.

An objection that might be raised at this point takes the form of a dilemma: if mentality can be “reduced” to neurophysiology plus other naturalistic schemes describing relevant external/historical features, then folk psychology would still be explanatorily contained, but within a broader naturalistic account; thus, either (a) appealing to broad behavior does not rid us of the (explanatory containment) problem, or (b) the explanatory containment problem is not really a problem. The reply to this is to embrace the first horn: The sort of explanatory containment described in (a) is perfectly acceptable for a naturalistic account of psychological explanation. As I elaborated above, the desideratum for the psychological explanation scheme is that it make essential explanatory use of the content of the mental states (MCA). I argue that this desideratum, along with some features of explanation in general, leads to (AC1), which specifically requires that an adequate psychological explanation scheme not be explanatorily contained in the neurophysiological account. Thus it is only the explanatory containment of a scheme in the neurophysiological account that violates MCA; explanatory containment in the broader naturalistic account suggested above does not.

As for (AC2), the broad behavior scheme follows the spirit of Dretske’s lead and construes behavior in such a way as to make its content-bearing mental states explanatorily relevant qua content in explaining the behavior. Since a particular piece of broad behavior is made up of more than mere bodily motion (it is also made up of a function/goal given by its historical properties), it cannot be explained merely by the neurophysiological properties of a mental state. Such an account would fail to explain the broad behavior qua broad behavior. It might explain why the motions were produced, but not why the motions having the particular function/goal that they do were produced; to explain the latter, the function/goal of the mental state must be invoked, that is, its content.

Thus on the broad behavior explanatory scheme, the additional structure (beyond that of neurophysiological schemes) embodied in further classifying brain states according to types based on their functions/goals (content) is justified by the explanandum: bodily motions individuated by their functions/goals (broad behavior). It is justified in that the function/goal of a mental state is required to help explain why the mental state leads to the behavior—learning event(s) recruited the behavior (via its function/goal) as a means to achieving the function/goal of the mental state. Thus (AC2) is satisfied.

One might naturally wonder whether there are cases in which a psychological explanation is called for in order to explain narrowly individuated behavior, and if so, whether such cases constitute violations of adequacy condition (AC2). As a possible example, one might ask either:
(a) “Why did he call for a time-out?” (broad behavior), or
(b) “Why did he place his hands in the form of a T?” (narrow behavior).

The second why-question might naturally be asked by someone unfamiliar with the game, yet still wishing for a psychological explanation. Does a psychological explanation of (b) violate the adequacy condition (AC2)? If there were a plausible example of narrow behavior appropriately explained by psychological explanation, then it would indeed violate (AC2). As it turns out, however, such examples do not seem to arise. Psychological explanation is not appropriate for a why-question in which the explanandum is narrow behavior, and this example (and ones like it) do not constitute an exception.

It may well be appropriate to give a psychological explanation to the utterance as in (b); however, this utterance is not “picking out” a narrow behavior for explanation but rather a broad behavior specified in narrow terms. Utterances such as these are not themselves why-questions, but rather, with the help of context, determine a why-question in much the same way as an utterance itself is not a proposition but rather determines a proposition with the help of the context (see van Fraassen 1980, Ch. 5 for discussion). In this example (and ones like it) the why-question indicated actually involves broad behavior. Consider the following interpretations of (b):

1. Why did his hands take the form of a T?
2. What does it mean to place ones hands in the form of a T?
3. Why did he make that T-gesture with his hands?

The first of these involves a narrow interpretation of the behavior; it is not a plausible interpretation in this example, and I include it only for purposes of contrast. The second interpretation recognizes the (unfamiliar) behavior as intentional and having something do with the rules of the game, and asks for an explanation of this relation, i.e., how the rules “make sense” of the behavior. The third interpretation also recognizes the (unfamiliar) behavior as intentional and asks about the agent’s reason(s) for performing the behavior.

Most utterances of (b) involve either why-question 2 or 3 or both, and rarely if ever 1. In any case, if a psychological explanation is called for, then it is clear that 3 is the proper interpretation; it is the only one that renders the psychological explanation appropriate. But under interpretation 3, the behavior in question is certainly not narrowly individuated, since it is recognized as intentional behavior. This example provides an illustration of how novel broad behavior is often “picked out” with language. We often use “narrow” language to refer to a behavior that we recognize as intentional but whose purpose we have not yet identified; it is only after some degree of understanding is attained that “broader” language is available. Following Kripke: We initially “dub” a behavior type in narrowly descriptive terms in order to “pick it out” as an object of study.

Finally, notice that unlike Dretske’s account, the broad behavior account satisfies (AC1) and (AC2) in a way that remains true to the folk-psychological conception of behavior. Missing is Dretske’s constitutive link between behavior and
its explaining mental state that leads to the too finely-grained identity conditions for behavior. Different mental states may indeed explain the same behaviors. Reconsider Example 1 of the previous section: my running 10 miles before breakfast is the same behavior (on the broad behavior account) regardless of whether it is explained by a desire to be healthy and a belief that running will keep me healthy, or by a desire to study philosophy efficiently and a belief that running will facilitate this.

Notice also that the developmental/learning scenario described in Example 2 of the previous section is more accurately described under the broad behavior account. The child begins with a rather limited number of motor programs (broad behaviors) that it “utilizes” for different ends. He will develop/learn additional, novel behaviors, but these will not come about at the same rate as (in a one-one correspondence with) the learning of new ways of using his existing behaviors, as Dretske’s account suggests. The picture provided by the broad behavior account, where novel behaviors develop, though not with every new use of an existing behavior, fits better with both the folk-psychological account and with how motor programs are understood to work.

Concluding Remark

I have argued that the problem of finding an adequate account of psychological explanation can be seen partly as the problem of finding the correct conception of the behavior to be explained. Broad behavior, which takes the explanandum of psychology to supervene on historical function-infusing properties in addition to the local physical properties, looks to be this conception. Armed with such a conception, the ensuing account of psychological explanation is able to make explanatory use of the content of mental states in an essential way that the prevailing accounts are not.
REFERENCES

NOTES

1. I draw most heavily on Enç’s (1995) discussion of broad behavior. Other discussions of broad behavior as it pertains to psychological explanation can be found in Kim (1982), Hornsby (1986), MacDonald (1992), and Francescotti (1994).

2. While traditional thermodynamics is still taught, it is presented as a practical tool for arriving at descriptions/predictions of systems and their (macro) thermodynamic properties. It is typically not presented as an answer to why these properties behave the way that they do; this is left to statistical mechanics. While this take on thermodynamics may not be universally accepted, it is widely held and certainly defensible, and this is sufficient for my illustrative use of it.

3. For the time being I remain neutral on the question of whether the explanandum is merely raw bodily motion, or rather is something less narrowly individuated. Notice, however, that which explanation is appropriate is not an obvious function of how the explanandum is construed: suppose, as a crack bridge player, finesse is automatic for me that I have a neuro-function that calculates whether and which direction I should finesse; this function, based in part on a subjective probability estimate, might quite plausibly be cognitively impenetrable (i.e., some of its workings take place “below” the belief/desire level). In this case, one might indeed invoke the “finesse” function as part of an explanation of my playing the spade queen.

4. It is true that one could take the explanatory machinery of a science, say chemistry, and recast all of it into physics terms in a one-one way, simply paraphrasing each chemistry definition, law, concept, etc., in terms of physics. This would not be a “reduction”; however, it would still be chemistry. It would simply be using different terms to capture the same structure.

5. Of course whether (or how much of) the explanatory machinery is reflected in the phenomena to be explained is an empirical question. We are able to dismiss $L_u$-chemistry because we have ample empirical evidence to convince us that its structure-capturing capability (beyond that of chemistry) is not reflected in the phenomena. So in principle it might be that the impact of this condition on psychological explanation schemes will have to wait until the empirical jury returns. It is possible to construct a scheme such that we would have to wait for the relevant empirical evidence to see whether it satisfies such an adequacy condition. (Make it depend on magnetic monopoles, or something comparable.) Fortunately though, the terrain I wish to cover is, in this sense, more like $L_u$-chemistry than magnetic monopoles. As will be clear in next section, the relevant empirical evidence is currently available.

6. Naturally, there are many different accounts of the mind that are roughly “functionalist” and not all of these are, strictly speaking, physicalist accounts. The broad behavior account I am presenting here is not dependent on any particular one of these.

7. This account of function is generally attributed to Wright (1972, 1973) and has arguably become the standard one. See Enç and Adams (1992) for discussion.

8. Do either Putnam or Burge endorse this particularly naïve account of psychological explanation? Probably not; however, the details of their accounts are not clear. Putnam’s contribution to broad content comes in the form of work on semantics, “The Meaning of ‘Meaning’”; I find no explicit indication of how his account of psychological explanation would unfold in this or any of his related articles. Burge at various places (1986, 10-2; 1993, 115-16) shows an awareness that how we construe behavior is a complicated and important factor in how we explain it; but again we find no detail on what his “intentionally described” behavior is or how it might function in a broad account of psychological explanation.

9. One might be tempted to maintain that bodily motion could be sensitive to content, e.g., when I do something intentional by moving my body: I block the sun from hitting you in the eyes by leaning to the left. It is indeed natural to offer a belief/desire explanation: I believed the light was bothering you and that my leaning to the left would block it, and I desired that you not be bothered. However, in this explanation (and ones like it) clearly the explanandum is not raw bodily motion. It is instead an intentional behavior that we pick out using bodily motion language, since the intentional aspect of the
explanandum must be presupposed if the belief/desire explanation is to be germane. (This point generalizes since just about any intentional action $A$ can be described as a bodily motion $M$ intended to bring about $S$.)

10. Of course there is a sense in which $B$ must have existed prior to $t_0$, since $C$ (prior to becoming a representation) needs to have been physiologically “wired” in such a way as to be able to cause $M$ if it is to be recruited as a representation-cause of $M$—or so goes the Skinnerian-cum-Dretske paradigm. Call the “mental state” prior to the time ($t_0$) it becomes a representation $C'$ and call the behavior prior to this time $B'$, after $t_0$ call them $C$ and $B$. It is clear that “mental” states $C'$ and $C$ are very different states; in fact $C'$ is not properly considered a mental state on Dretske’s account. Consequently the behaviors $B'$ and $B$ which consist (in part) of these “mental” states are qualitatively different; they are distinct behaviors. So $B$ comes to exist (from $B'$) at $t_0$, and this is all that is needed to make the point.

11. In shifting the explanandum from behavior construed as bodily motion to behavior construed as the process of a mental state causing a bodily motion, Dretske has, of course, shifted the type of the appropriate explanation from that of a triggering cause to that of a structuring cause.

12. The name, broad behavior, of course comes from the similarity of this view of behavior to a broad view of content in which content is taken to supervene on more than the local physical properties of the brain which (in part) comprise it.

13. Of course specifying the precise nature of the psychological explanation scheme required by the broad nature of the explanandum will not be a simple task—it will undoubtedly be much more complicated and will face many more difficulties than my broad strokes here could possibly indicate. Again, I am only hoping to illustrate the promise of this general sort of approach with respect to the problem of finding an account of psychological explanation that preserves the relevant aspects of folk psychology. The discussion in Enç (1995) deals in much more detail with the subtleties and difficulties surrounding broad behavior itself.