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INDIVIDUALISM, CAUSAL POWERS,
AND EXPLANATION*

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§1. INTRODUCTION

Individualism in psychology is a view about what mental states *are*, a view about how it is that mental states are to be individuated, classified, taxonomized, or typed. It is a substantive, plausible and controversial view which, over the last fifteen years, has been the focus of much debate in the philosophy of mind. In this paper I shall discuss one recent and influential argument for individualism, an argument most explicitly and vigorously defended by Jerry Fodor.¹

First, some preliminaries. In his 'Individualism and Psychology', Tyler Burge states that individualism is the view that

the mental natures of all a person's or animal's mental states (and events) are such that there is no deep individuating relation between the individual's being in states of those kinds and the nature of the individual's physical or social environments.²

According to Burge's formulation, individualism makes a *negative* claim: that how mental states are individuated is not significantly affected by factors which are external to the individual instantiating those states.

As Burge himself notes, individualism can also be given a positive characterization. Stephen Stich's *principle of autonomy* provides one such characterization of individualism. Stich says,

The basic idea of the principle is that the states and processes that ought to be of concern to the psychologist are those that supervene on the current, internal, physical state of the organism . . . any differences between organisms which do not manifest themselves as differences in their current, internal, physical states ought to be ignored by a psychological theory . . . historical and environmental facts will be psychologically relevant only when they influence an organism's current, internal, physical state.³

I think that it is most plausible to view individualism as a purported

constraint on taxonomy and so explanation in a truly scientific psychology; individualism specifies a minimal condition that explanations in a scientific psychology must meet. Individualism, as expressed in the principle of autonomy, is the view that mental states must supervene on the intrinsic, physical states of the individual in whom they are instantiated. The principle of autonomy states a necessary condition for classifying two mental states as states of different psychological kinds: two mental states should be classified as belonging to different psychological kinds only if they are 'manifested in', or, in some intuitive sense, correspond to internal, physical differences in the creatures in which those states are instantiated. Individualists sometimes state their constraint in terms of how doppelgängers must be treated by a scientific psychology: doppelgängers, individuals sharing all of their intrinsic, physical properties, *must be* taxonomized under the same psychological kinds.

The attraction of individualism as a constraint on psychological explanation lies in the conception of psychology that motivates it. Psychology involves abstracting over the mental states of *individuals*: it is concerned with identifying the cognitive contribution of the individual to her own behavior. As such, it is the *causal powers* of an individual's mental states that are relevant to psychological explanation. How an individual's states interact with one another, and how they, in turn, cause that individual's behavior are, after all, facts about that individual. Individuals form their particular mental states in various ways, but it is their being in those states rather than how they came to have them that is relevant to their subsequent behavior. Since psychology is concerned with predicting and explaining cognitive behavior, it ought to ignore any difference between individuals which does not itself make a difference to the role that some mental state plays in the causation of behavior. Facts about the history or environment of an individual are relevant to mental causation and mental taxonomies, as Stich says, only in so far as such facts influence the internal, physical states of that individual.

This conception of psychology derives much of its intuitive plausibility, in turn, from more general views about explanation, causation, and causal powers. In fact, these views have served as the basis for an

argument which claims that individualism in psychology follows from general considerations about scientific explanation. The central claim of this argument is that scientific taxonomies satisfy a general constraint of which individualism is a particular instance. Sciences typically individuate their explanatory categories and kinds by causal powers, and the causal powers that anything has supervene on that thing's intrinsic, physical properties. So, if psychology is to be a science, individualism in psychology must thus be a constraint on psychological taxonomy and explanation.

I shall argue that this type of *a priori* argument for individualism equivocates on 'causal powers'. This equivocation is not simply inherent in a particular formulation of this argument; rather, it points to a deep and recurrent problem for those who claim that individualism in psychology follows from generally acceptable claims about explanation, causation, and causal powers. It is the appeal to the notion of causal powers itself in these arguments for individualism that is, I shall argue, at the heart of the problem. In terms I shall explain in §4, there is an *extended* and a *restricted* notion of causal powers which individualists have not distinguished and which, once distinguished, make it very difficult to see how individualism could be a consequence of the scientific nature of psychology.

Let us be more precise. Consider the following explicit argument for individualism, an argument I shall refer to as the *argument from causal powers*:⁴

- (1) Taxonomic properties and entities in the sciences must be individuated by their causal powers.
- (2) Cognitive psychology is the putative science of identifying taxonomic *mental* causes and formulating generalizations about those causes.

Therefore,

- (3) For the purposes of cognitive psychology, both the mental causes of an individual's behavior and that behavior itself must be individuated in terms of the causal powers of that individual.⁵

So, since

- (4) The causal powers of anything are determined or fixed by that thing's intrinsic, physical properties.
- (5) Any causes of behavior which are to be taxonomic in cognitive psychology must be determined or fixed by the intrinsic, physical properties of the individual.

Therefore,

- (6) Cognitive psychology should concern itself only with states and processes that are themselves determined by the intrinsic physical properties of the individual.

Despite the apparent validity of the argument from causal powers, in §4 I shall argue that it is invalid because (1) and (4) require different notions of 'causal powers', in §§5–7 I defend my claim that this equivocation in the argument from causal powers constitutes a deep, recurrent problem for the individualist. Support for these claims about the individualist's appeal to causal powers form the substance of the argument of this paper.

There is, in addition, a more *methodological* point I would also like to make about the argument from causal powers, one concerning the *way* in which it proceeds. I shall be concerned to challenge the *a priori* character of the argument from causal powers, for it is this aspect to the argument that exemplifies, I believe, a mistaken, general approach to issues in the philosophy of science.

To lay the foundations for a convincing case for these claims, I shall focus in the next two sections on Premise (1) of this argument and the grounds that have been given for accepting it. One could think of this premise as articulating some form of *global individualism*, i.e., a generalization of the constraint that individualism imposes on psychology. Fodor appeals to what he claims to be general facts about causation and causal explanation, particularly causal explanation in the sciences, in arguing for global individualism. I shall make two points about this argument for (1).

First, in §2 I shall argue that (1) does not follow from such general

facts about causal explanation. Second, in §3 I shall argue that the most plausible way of defending (1) is by invoking a general claim about the *revisability* of causal explanations and taxonomies. Far from following from uncontroversial claims about causation and causal explanation, (1) requires the truth of an interesting but controversial claim about the nature of scientific explanation.

§2. AN ARGUMENT FOR GLOBAL INDIVIDUALISM: POWERS AND PROPERTIES

Fodor has argued for global individualism by making two relatively uncontroversial, general claims about causal explanation. He says,

We want science to give causal explanations of such things (events, whatever) in nature as can be causally explained. Giving such explanations essentially involves projecting and confirming causal generalizations. And causal generalizations subsume the things they apply to virtue of the causal properties of the things they apply to. Of course.

In short, what you need in order to do science is a taxonomic apparatus that distinguishes between things insofar as they have *different* causal properties and that groups things together insofar as they have the *same* causal properties.⁶

The first claim is that scientific explanation is causal. The second is that in the explanatory frameworks in which causal explanations are offered, the taxonomies which classify the phenomena doing the explaining must do so according to causal similarities and causal differences. Hence, Fodor argues, if we are to develop a scientific explanation for some phenomenon, we must taxonomize by causal similarities. The causal nature of scientific explanation requires individuation by causal powers.

This final conclusion does not follow. One reason is that individuation by sameness or similarity of causal *properties* is not the same thing as individuation by causal *powers*. The concept of a causal property is broader than the concept of a causal power: powers are essentially forward-looking in a way that properties in general need not be.⁷ Some of the causal similarities between two phenomena that are relevant for taxonomy in a given discipline may involve the *causes* of those phenomena or the actual causal relations they stand in, rather than what those phenomena are capable of causing. The historical and relational properties that two entities share may well explain why those

entities share many other properties, and there is no reason to regard explanations that cite such properties as non-causal. As I'll argue in some detail in §4, the taxonomy of entities by their historical and relational causal properties is pervasive in many sciences: the concepts of taboo in anthropology, criminal in sociology, and species in evolutionary biology, while all causal concepts, are not defined in terms of the causal powers of an individual. The fact that sciences offer causal explanations and individuate by causal properties does not entail that they must individuate by causal powers.

Although I shall assume a fairly broad notion of causal property in what follows, one which does not rule out *a priori* either relational or historical properties from being causal properties, this does not imply that I take *any* relational or historical predicate to name a property. I shall argue that even on a more restricted notion of causal property which allows only intrinsic and extrinsic causal powers to be causal properties, the distinction between intrinsic powers and properties more generally still points to what is wrong with the appeal to 'causal powers'. Since the notion of a causal property must include at least the extrinsic causal powers an entity instantiates, and these do not supervene on that entity's intrinsic, physical properties, my reliance on the broad notion of causal property is not essential to the *substantial* argument of this paper.⁸

To illustrate the invalidity of Fodor's inference in his argument for global individualism, consider a non-scientific case. If individuation in science is individuation by causal powers because scientific explanation is causal, then the causal nature of other types of explanation should entail that the entities they refer to must be individuated by their causal powers. Suppose we pick out a group of people with the predicate 'is a victim of the Hiroshima bombing'. What determines whether someone belongs to this group are facts about that person's history, or perhaps even facts about that person's parents' history, not facts about what that person can do. An individual's causal powers do not constitute the individuating criteria which determine whether she is a victim of the Hiroshima bombing. Still, this way of classifying people proceeds by means of identifying a causal *property* which certain people share, and I take it as obvious that there are all sorts of causal generalizations true of people who are classified together by this predicate. In virtue of

having been present in Hiroshima at a certain time (or of having had parents who were present), certain people suffered cell degeneration, cancerous growths, and genetic diseases that were caused by the American nuclear attack on Hiroshima. The various generalizations that hold true of these people are systematic, and it is explanatory to point out that some individual was a victim of the Hiroshima bombing in response to a query about aspects of her current bodily state.

This sort of relational individuation is ubiquitous in talk about groups of people (e.g., university graduates, divorcees, pensioners) and the individuals constituting those groups. The existence of a causal explanation for a given phenomenon does not entail that either the entities constituting the phenomenon or those referred to in the causal explanation must be individuated by their causal powers. Therefore, the ubiquity of causal explanation and individuation by causal *properties* across the sciences does not entail the commitment of scientific explanation to individuation by causal *powers*.

§3. THE PRELIMINARY CHARACTER OF RELATIONAL TAXONOMIES

Despite the invalidity of Fodor's argument for (1), that argument draws on persistent intuitions about the nature of causal explanation that warrant more careful consideration. Even granting some distinction between powers and properties, there is an intuitive distinction between relational and historical properties, on the one hand, and intrinsic properties, on the other, when one considers the role that each plays in causal explanation. Though relational and historical kinds may feature in causal explanations, the properties which individuate such kinds do not play an appropriate explanatory role: such kinds and properties are not *themselves* the ultimate bases of causal responsibility. If we are interested in entities *qua* causes or *qua explanantia*, then there must be something about those entities themselves that our explanations strive to identify.⁹ Such intrinsic properties are causally responsible for the effects we ascribe in causal explanations, and it is therefore in virtue of sharing such properties that entities must be taxonomized in causal explanations. Whether or not we insist on taxonomy being by causal

'powers', causal taxonomies must at least be by properties that supervene on the intrinsic properties that some entity instantiates.

I have already said that I think the appeal to causal powers itself is at the core of the problem with the argument from causal powers; in this respect, what we call a 'causal power' is not merely a verbal issue, as the above argument perhaps suggests. However, for now I want to bracket discussion of this issue in order to point to a prior problem for a proponent of global individualism, even one who claims only that individuation in science must be 'by intrinsic causal properties' rather than 'by causal powers'. The problem stems from the fact that there are many causal explanations which, like the example I introduced above, *do* feature kinds individuated by relational and historical properties, and such explanations violate the constraint of global individualism. Given the *prima facie* conflict between the constraint of global individualism and our actual explanatory practice, how does the proponent of global individualism explain away the appearances?

A focus on the 'victim of the Hiroshima bombing' example introduced in the previous section might suggest the following response to this problem. Showing that there are *common-sense*, causal explanations of human traits and actions which individuate people by something other than their intrinsic causal powers does not show anything about scientific, causal explanation, for there is a distinction between these two types of causal explanations. There is something special about the causal nature of *scientific* explanation which entails that scientific explanation presupposes taxonomy by causal powers.

If one thinks that (1) makes a point not about causal explanation in general but about scientific causal explanation, one needs some criterion distinguishing scientific from ordinary causal explanation. There are a number of closely related and familiar criteria which have been claimed to mark off scientific explanations from other types of explanations. For example, scientific explanations are projectible, law-instantiating, and quantify over natural kinds in a way that other explanations, including other causal explanations, need not. If it is only explanations with these properties — scientific explanations — of which (1) is true, then the existence of ordinary, causal explanations which feature relational and historical kinds is not relevant to its truth.

One serious problem with this proposal is that it is notoriously

difficult to articulate these notions in such a way as to demarcate scientific explanations as a class from non-scientific explanations. For example, part of what it is for scientific explanations to be projectible is for them to be *counterfactually rigorous*: in nearby possible worlds, entities of the kinds specified in the explanation also have the properties ascribed in the explanation. However, ordinary causal explanations which form no part of any science are counterfactually rigorous in precisely the same way.¹⁰ More pointedly, generalizations about historically or relationally individuated entities are no less projectible or scientific than any other type of causal generalizations.¹¹ Indeed, as we'll see in the next section, explanations that feature such kinds are widespread in existing sciences.

Taking on the burden of demarcating scientific from ordinary causal explanation in order to defend global individualism is not the most promising way for the proponent of global individualism to explain why we appeal so liberally in our causal explanations to kinds individuated by historical and relational properties. More plausibly, such a proponent could concede that even though causal explanations, whether they be scientific or non-scientific, do feature relational and historical kinds, such taxonomies are always *preliminary* in some way to taxonomies that do conform to the constraint of global individualism. This preliminary character of relational and historical taxonomies reflects the fact that relational and historical properties are not *themselves* ultimately causally responsible for what entities instantiating such properties do and can do. Surely one reason why relational kinds feature in causal explanations is that the classification of entities by these readily observable relational properties allows one to further investigate the intrinsic causal powers that these entities instantiate. In any case, the taxonomy of an entity by its historical and relational properties can never itself specify ultimate causal factors.

Consider a variation on our victim example as an illustration of what these claims about historical and relational kinds amount to. Suppose that the following generalization is true: that most victims of the Hiroshima bombing suffered from radiation effects of a specific type, say, some specific form of cancer. Though we might use the historical predicate 'is a victim of Hiroshima bombing' to pick out a particular group of people, what determines whether the above generalization is

true of *particular individuals* is something about those individuals themselves, not something about their causal history. It is in virtue of some intrinsic, physical feature, such as the mutation of a particular gene or the destruction of certain cells, that the generalization applies to particular individuals. What *really* explains why people with a historical, relational property — being in a certain spatio-temporal region — have a specific type of cancer is that these people now have the intrinsic, physical property which itself *causes* the cancer. This claim about the explanatory priority of such an intrinsic causal power is plausible because it is the possession of a certain gene or damage to certain cells which partitions the class of people initially taxonomized as victims by the historical-relational property: those with the intrinsic property have the cancer, and those who do not have it do not. This allows us, at least in principle, to revise our initial taxonomic scheme. In the new taxonomy, people *are* taxonomized by some intrinsic causal power they have. After the revision, we have an individualistic taxonomy which *does* form the basis for true, causal generalizations; our historical classification is preliminary to this taxonomy.

A related way in which relational taxonomies are sometimes modified in scientific explanations is exemplified by the narrowing of the concept of *weight* to that of *mass* in Newtonian mechanics.¹² Here we begin with an extrinsic property that an entity instantiates (weight) and decompose it into an intrinsic property (mass) plus a relation (gravitational force). Importantly, we arrive at a property which itself is ultimately causally responsible, an intrinsic causal power.

Even if few cases are as tidy as the weight-mass case, the point I want to make here is that some general claim about the preliminary and revisable character of relational, scientific taxonomies must be true for Fodor's argument for global individualism to be defensible. (1) does not simply follow from relatively uncontroversial claims about scientific explanation and taxonomy, as Fodor himself suggests. By contrast, Fodor's argument involves an interesting yet controversial, general point about the preliminary character of relational taxonomies and the subsequent ways in which they must be revised for causal explanation.¹³

One could determine the plausibility of this general claim about scientific explanation by examining a variety of accepted explanations in different sciences, and should some of these fail to taxonomize by

intrinsic causal powers, determine whether such taxonomies are revisable in the appropriate way. I shall argue below that there are such scientific taxonomies (§4) and that they are not revisable in the prescribed manner (§5). There are kinds and explanations in a variety of sciences for which global individualism is simply false. Or it is false if one gives 'causal powers' what I think is its usual sense. As I hope to show in the next section, however, the argument from causal powers relies on *more than* this sense of 'causal powers'.

§4. CAUSAL POWERS AND SCIENTIFIC EXPLANATION

In summarizing his own version of the argument from causal powers, Fodor identifies two main points:

Methodological point: Categorization in science is characteristically taxonomy by causal powers. Identity of causal powers is identity of causal consequences across nomologically possible contexts.

Metaphysical point: Causal powers supervene on local microstructure. In the psychological case, they supervene on local neural structure.¹⁴

There is no understanding of 'causal powers' which satisfies both of Fodor's points here; the same is true of (1) and (4) in the argument from causal powers.¹⁵ If Fodor's methodological point is to be true of sciences as they are actually practiced, then causal powers do not always supervene on local microstructure. If his metaphysical point is to specify a truth about causal powers, then scientific taxonomies do not, as a matter of fact, always individuate in terms of causal powers.¹⁶

To take this latter point first, assume that Fodor's metaphysical point, and (4) in the argument from causal powers, are true. Tyler Burge¹⁷ has claimed that when we examine actual patterns of individuation in a number of sciences we find that individuation is not always in terms of an individual entity's intrinsic causal powers. Burge's particular examples are in no way special cases. Evolutionary paleontology offers reconstructive hypotheses about skeletal and other structures of past creatures based on the fossil record. In no real sense could it be said to be concerned exclusively with the causal powers of past creatures. Many of the geosciences are concerned with how certain formations, such as volcanos and mountains, came about, not with those entities'

causal powers; volcanos and mountains are not classified in these sciences by their causal powers. Epidemiology, while having implications for what people with certain diseases can and can't do, sometimes taxonomizes diseases by how they are caused. For example, viral diseases, though varied in their particular causal powers, are grouped together because they are caused by viruses. The same is true of many particular diseases: syphilis,¹⁸ lead poisoning and birth trauma are diseases or conditions which are typed in terms of their respective causes, not by what they themselves have the power to cause.¹⁹

One reason why the revisability claim sketched in the previous section is plausible is that it makes a point about the taxonomy of entities in so far as they are considered *as causes* or *as explanantia* for a given phenomenon. This point is relevant here, for it might be thought that the above examples only invoke entities as *explananda* rather than as *explanantia*. While there are causal generalizations that do mention entities which are not taxonomized by their intrinsic causal powers, the objection concedes, these entities feature only as the *explananda* to which the generalizations apply. There *are* causal generalizations about continents, volcanos, mountains, skeletal structures and viruses, but none of these generalizations feature such kinds as causes or *explanantia*. And it is *qua explanantia* that scientific kinds must be taxonomized by intrinsic causal powers.

Although intuitive, I think that this claim is difficult to maintain once one acknowledges the ubiquity of explanations in the sciences in which there are kinds that do not conform to the constraint of global individualism. For such explanations do not refer to these kinds only as *explananda*, and the claim that they do is at best the sort of reconstructive claim about the nature of scientific explanation that one should reject. Explanations of the form 'Because it is an x', and 'Because it has x' where 'x' designates some non-individualistic kind or property, are common in the sciences. For example, the relational property of being highly specialized is one which is causally responsible for the extinction of a species during rapid or catastrophic evolutionary change: 'because it is specialized' or 'because it's a hedgehog' are both explanatory claims within evolutionary biology. Yet the property of being specialized and the properties that individuate species kinds are not individualistic. Entities that are taxonomized under historical or relational kinds them-

selves are often cited as causes in scientific explanations.²⁰ Relationally individuated kinds play the role of both *explanans* and *explanandum* in actual explanatory practice, and it is actual explanatory practice that should be the ultimate arbiter for claims about constraints on scientific explanation.

I want to clarify this response and emphasize the importance of my methodological appeal to actual explanatory practice. The question of whether relational kinds can feature as causes in explanations is one question. Whether the relational properties which individuate those kinds are themselves causally responsible for the events, processes, and states being explained is another question, a question whose answer depends in part on broader and more controversial metaphysical issues. (The answer turns, in part, on whether relations can be causally efficacious.) My claim is that one *must* accept an affirmative answer to the first question in light of explanatory practice in the sciences. Given this, however, a negative answer to the second question becomes difficult to maintain. The most plausible way in which the 'Yes-No' option can be defended is by accepting the view I described in the previous section according to which relational taxonomies are always preliminary and lead to revised, individualistic taxonomies. As I shall argue *in passim* below, this general revisability claim should also be rejected once one attends to actual explanatory practice in the range of disciplines that constitute the sciences. Relational taxonomies do not in general have the character that they must for global individualism to be defended *via* the revisability claim. There may be *a priori* considerations which entail that historical and relational taxonomies are not 'properly scientific', but the focus on actual explanatory practice in science must function as a check on such *a priori* claims about the nature of scientific explanation.

If the causal powers of an entity are conceived of as supervening on the local microstructure of that individual, then global individualism is false. The intrinsic causal powers of individual entities are not all that important in some types of scientific, causal explanation. Many sciences are not primarily concerned with what a thing can do. In some cases the relevant discipline concentrates not so much on abilities as on the *history* or the *structure* of the entity or phenomenon of interest. This is true particularly in the social and biological sciences where there is

significant interest in *processes* and *systems*, rather than the individual things which constitute those processes and systems. This does not make these sciences any less scientific, or entail that they are not concerned with formulating causal explanations for the phenomena in their respective domains.

To consolidate the claim that, assuming the truth of (4), (1) is false, I shall discuss in somewhat more detail three particular examples of taxonomic kinds which are non-individualistic. The diversity of these examples, together with those I have mentioned above, is important because it suggests that it will be difficult for the individualist simply to restrict the thesis of global individualism to some subset of scientific disciplines of which psychology is clearly a member. The details of the accompanying discussion not only address particular objections to my denial of global individualism; they also illustrate why there is an inherent tension in the use to which causal powers is put in the argument from causal powers.

Anthropologists are often interested in understanding a set of actions or practices in a particular culture. Those actions or practices are frequently typed at a relatively abstract level by understanding the role of the practices in the larger social context. For example, incest is forbidden in many cultures, and is often considered a paradigm *taboo*. The concept of a taboo is central to many explanations in anthropology,²¹ and though different types of activities are considered taboo across cultures, practices are not taxonomized as taboos by their intrinsic causal powers. In classifying certain actions or practices as taboos one is not concerned with the 'local microstructure' of those actions or practices, or the physical movements that they involve. Rather, one locates the practice amongst a complex network of other social and moral practices. Taboos are non-individualistic; taxonomy in anthropology is not, or not *entirely*, individualistic.²²

The same is true of central categories in many other social sciences: gender and categories of sexual preference in various fields of sociology, class in economics and history, criminal in social psychology and sociology. To take one of these, consider the social kind criminal. Being a criminal is a relational property that some people instantiate: a person is a criminal if he or she breaks any of a number of laws of a certain class. Whether a particular individual can be properly classified as a

criminal is a function of the relations that that person has entered into; it is not determined by that individual's intrinsic causal powers. Still, there are many generalizations in sociology (and perhaps even in social psychology) about criminals as a social kind, and it is explanatory to appeal to an individual's criminal status to explain some of her behavior.

There are two related objections to my claims about the category criminal, and my brief response to these here should clarify what someone who denies global individualism needs to accept. The first objection is that I must be supposing that certain types of 'theories' about criminality (e.g., Lombroso's theory of criminal man) are false, since these theories *would* provide some intrinsic causal power of an individual which determined whether he or she was a criminal.²³ Now, it is true that there are various theories about why some people are criminals, but it should be clear that these are primarily views about what is causally responsible for criminal behavior in particular individuals, rather than claims about the criteria of taxonomic individuation. Such theories purport to be causal explanations of why particular individuals are criminal; they need not supply criteria for individuating the kind criminal. *Some* such theories might purport to be identifying the 'underlying essence' of criminality, yet it is compatible with the social kind criminal being a scientifically interesting kind that such theories be mistaken, or that they account for only some kinds of criminal behavior. So, although I do think that such theories are unlikely to be true, whether or not they are true is irrelevant to my claim about the taxonomic individuation of the category criminal.

The second objection is that without there being *some* intrinsic causal factor that is causally responsible for criminal behavior, the category must be empty, like the category witch. Either there is some intrinsic property which criminals share *as* criminals, or the category can be of no theoretical interest at all. How else could being a criminal be an explanatory, causal property of an individual? There are two problems with this objection. First, unlike witch-hood, criminal status is *not* a category deeply embedded in a theoretical framework in such a way that the falsity of the theory would render the category empty. Even if no theory could adequately explain criminal behavior, this would imply neither that there were no criminals nor that there were no

theoretically interesting generalizations about criminals.²⁴ Second, all that causation requires is that there be some causal factor that results in criminal behavior in each particular instance. Yet these factors may vary inter-personally and even intra-personally; they need not be shared by individuals instantiating the kind and so constitute the basis for the category criminal.

In both of these cases, taboo and criminal, the properties that make an entity the kind of thing it is are not intrinsic properties of that entity: an entity falls under either of these concepts because of the relations that entity stands in. Central taxonomic properties in the biological sciences are also, like taboo and criminal, relational. In evolutionary biology, the concept of species is a central (perhaps *the* central) taxonomic concept.²⁵ There are various causal generalizations true of members of a particular species, some of these concerning genetic and morphological similarities, properties which *are* individualistic. Yet species themselves are taxonomized relationally in terms of the reproductive isolation of a population. For example, Ernst Mayr defines a species as 'a reproductive community of populations (reproductively isolated from others) that occupies a specific niche in nature'.²⁶ Although there is some variation in the precise definition of the species concept in evolutionary biology,²⁷ what is generally agreed is that the essentialist conception of species, whereby species are defined solely in terms of the intrinsic genetic or even morphological characteristics that their members possess, is inadequate for explanation in the discipline. Species are individuated relationally, not by the intrinsic causal powers of individuals, as such powers are understood in (4) of the argument from causal powers.

In saying that species are not individuated by intrinsic causal powers but relationally, I mean two things. The first is that an individual organism's species membership is not fixed by that organism's intrinsic properties, but by the relations it bears to other individuals. To take the most extreme case, two individual organisms could be physically identical (or, more pertinently, *biochemically* identical) in composition and structure and still belong to different species. This is because two such organisms could be reproductively isolated and have independent phylogenies. The pattern of individuation in evolutionary biology as it is practiced does not abstract away from actual history. The causal

powers of an individual organism don't determine that individual's species membership.

Second, as biological kinds, species are not individuated from one another by their intrinsic causal powers. This is because species are individuated from one another, in part, by their phylogenetic history. Furthermore, if Mayr is right in thinking of species as populations, it is difficult to make sense of the claim that it is the causal powers of a species, considered as a population, that distinguishes that species from some other species. As populations, species don't seem to be the right type of thing to be individuated by intrinsic causal powers.²⁸

As a related aside, there is a common misconception that both an individual organism's species membership and the individuation of species from one another are determined by the genotypes and phenotypes that individuals possess. Coupled with the claim — equally misleading, in my view — that an individual's genes fix her intrinsic causal powers, this view about taxonomy in evolutionary biology might be taken to support the claim that species *are* individuated by their intrinsic causal powers. Yet this would be a mistake. Both genotypes and phenotypes may vary across individuals belonging to the same species. As Elliott Sober²⁹ has convincingly argued, evolutionary thinking which recognizes the reality of populations and the inherent variability among its members, offers explanations which are incompatible with what Sober calls the 'natural state' explanations that essentialists offer. Essentialism should be rejected in evolutionary biology because it presupposes a type of explanation of variation that is implausible.

Assuming that causal powers supervene on an individual's intrinsic, physical properties, taxonomy in science as it is actually practiced is not exclusively taxonomy by intrinsic causal powers. Consider, now, the other conditional that is part of my claim that (1) and (4) are incompatible: that if we assume (1) and so Fodor's 'methodological point' to be true, (4) and so Fodor's 'metaphysical point' must be false. That is, if categorization in science typically *is* taxonomy by causal powers, then causal powers do not always supervene on local microstructure.

One way of explaining how historical and relational individuation is compatible with individuation by causal powers would be to broaden the notion of a causal power so as to include an entity's causal

properties more generally as constituting causal powers.³⁰ Such a conception of causal powers would be an extension of that which we have been considering thus far, and though we might reasonably question how inclusive such a notion of causal powers need be, note that it must include at least *some* historical and relational properties, if (1) is to be true. If one were to reconsider each of the examples I have given supposing some appropriately extended notion of causal powers, then none of them would constitute a counter-example to my claim that (1) is false. For example, if one considered the phylogenetic lineage of an organism, one of its historical, causal properties, as one of its causal powers, then the criteria used for taxonomizing species *would* be cast in terms of the causal powers of individual entities. However, this wouldn't do for the individualist, since clearly, on this view, (4) would be false. If 'causal power' is understood so as to mean causal *property*, then causal powers don't supervene on internal, physical properties. Some of the causal properties that are taxonomic in actual sciences are historical and relational; such properties *can't* supervene on an individual's intrinsic, physical properties.

Although simplistic summaries can sometimes be misleading, it would seem in this case that one can offer the following diagnosis of the problem in the argument from causal powers. For (1) to be true, 'causal powers of *x*' must refer to an extended notion of causal powers, one which includes not only the intrinsic and the extrinsic causal powers of *x*, but all of the causal properties of *x*, including at least some of its historical and relational causal properties: 'causal powers' must be used in what I shall call its *extended sense*. For (4) to be true, 'causal powers' can refer only to an entity's intrinsic causal powers: 'causal powers' must be used in what I shall call its *restricted sense*. The extended and restricted senses of 'causal powers' are different, and so (1) and (4) cannot both be true on a common understanding of causal powers. Hence, (5) cannot be concluded in the argument from causal powers. Whether there is or ought to be solely individuation by causal powers in psychology is not something to be decided by an appeal to the *causal* nature of psychological explanation.

Even though I have been assuming a relatively broad notion of causal property throughout this section, note that the same basic point I have made is true even if one assumes the minimal notion of a causal

property that I mentioned in §3. An individual's extrinsic causal powers, in contrast to her intrinsic causal powers (but like causal properties in general), do not supervene on that individual's intrinsic, physical properties. Kinds taxonomized in terms of forward-looking properties (powers) which are extrinsic are not globally individualistic. If scientific kinds are taxonomized by extrinsic causal powers, as I believe they frequently are, then the conclusion I have drawn could be reached assuming the narrower notion of a causal property. The argument would proceed in much the same way that my argument has, namely, by focussing on actual taxonomic practice in a range of sciences.³¹ Since it is, I think, sufficiently clear in outline how such an argument would proceed, I leave its development for elsewhere.

§5. RELATIONAL TAXONOMIES AND INDIVIDUALISM

My argument in the previous section appealed to the relational nature of individuation in a variety of sciences to show that those sciences were not individualistic. This argument presupposes that there is an incompatibility between relational and individualistic taxonomies, a presupposition that a proponent of global individualism is likely to reject. Indeed, Fodor himself has claimed that the prevalence of relational taxonomies in science does not show global individualism, his 'methodological point', to be false. In this section I defend the claim that relational and individualistic taxonomies are incompatible and address Fodor's explicit denial of the incompatibility between the two.

Consider, first, the following argument for the incompatibility of relational individuation and individuation by intrinsic causal powers. Relational individuation taxonomizes an entity at least partly in terms of the relations that entity enters into. The relations that any entity enters into are determined partly by properties extrinsic to that entity. Individuation by intrinsic causal powers, as the individualist has stressed, taxonomizes an entity *wholly* in terms of that entity's intrinsic, physical properties. But no one type of thing can be partly individuated by properties that are extrinsic to it and wholly individuated by properties intrinsic to it. Hence no one type of thing can be both relational and individualistic.³²

There are two ways in which this incompatibilist view of relational

and individualistic taxonomies might be challenged, one of which has been advocated by Fodor. He says,

Just as you'd expect, relational properties can count taxonomically whenever they affect causal powers. Thus 'being a planet' is a relational property par excellence, but it's one that individualism permits to operate in astronomical taxonomy. For whether you are a planet affects your trajectory, and your trajectory determines what you can bump into; so whether you're a planet affects your causal powers, which is all [that] individualism asks for.³³

This way of reconciling global individualism with the fact that relational taxonomies are prevalent in the sciences is also manifest in Fodor's comments on the distinction between methodological *individualism* and methodological *solipsism*.³⁴ Having drawn this distinction and conceded that solipsistic individuation is incompatible with relational individuation, Fodor continues,

there is nothing to stop principles of individuation from being simultaneously relational and individualistic. *Individualism does not prohibit the relational individuation of mental states*; it just says that no property of mental states, relational or otherwise, counts taxonomically unless it affects causal powers.³⁵

The idea here is this. At the core of global individualism is the idea that an entity's causal powers are crucial to ways in which that entity is taxonomized in science. Yet the claim that taxonomy in science is 'by causal powers' should not be construed too narrowly. As we have seen, a proponent of global individualism can admit taxonomic properties that, even if not themselves intrinsic causal powers, *supervene* on such powers. Likewise, one can preserve the core idea of global individualism by taking it to say that properties that *affect* an entity's causal powers in the same way can make no difference to scientific taxonomy. A relational property must make a difference to an entity's causal powers, if it is to provide the basis for taxonomizing that entity scientifically.

This reformulation of individualism requires closer scrutiny. Stalnaker³⁶ has pointed out that Fodor's characterization of individualism in these passages deviates in a non-trivial way from standard characterizations of that view. Individualism is the view that taxonomy is by causal powers, not, as Fodor implies here, by what *causally affects* causal powers. Stalnaker claims that the fact that being a planet affects the causal powers that a large blob of matter has is simply not relevant

to the question of whether individualism is true. As Stalnaker goes on to argue, were individualism the thesis that individuation in psychology must be individuation by what affects causal powers, then individualism would be compatible with *wide* individuation, since environmental facts clearly causally affect the causal powers that objects have, including their *intrinsic* causal powers. Stalnaker's objection is that Fodor's compatibilism requires a construal of global individualism that is too liberal for global individualism to be the basis for individualism in psychology.

I want to defend Stalnaker's claim here and show how it relates to my own criticisms of the argument from causal powers. Since talk of 'affecting' causal powers is somewhat vague and lumps together a variety of cases, let me first distinguish two different ways in which something can causally affect an entity's causal powers.³⁷

One way in which an entity's causal powers can be causally affected is by the *relations* that that entity actually enters into: what that entity can do at a time is partially a function of what it is related to at that time. It is in this sense that a given entity's causal powers are affected by its being a planet and so by its having the relational property of orbiting a star. In this same sense, the causal powers that an organism has are causally affected by that organism's being a member of one species rather than another. Call this way in which an entity's relational properties affect its causal powers *contemporaneous* affecting: the relations that an entity stands in at a given time causally affect what powers it has at that time.

A second way in which the causal powers an entity has can be causally affected is historically: events that form part of the history of the entity can be causally responsible for that entity's having certain causal powers rather than others. For example, the causal powers that a person has at a given time might be affected because she was present in Hiroshima in 1945, took a particular drug, or underwent special training. An event, process, relation, etc., *historically* affects an entity's causal powers if that event made a difference to those causal powers at some earlier time.

Let us focus on contemporaneous affecting, partly because the case that Fodor considers is of this type but also because it is this case in which the problem with broadening global individualism to allow for

properties which affect an entity's causal powers is most evident. Could global individualism be the view that taxonomy in science must be either by causal powers or by what contemporaneously affects causal powers? I think not. Suppose that (1) in the argument from causal powers is broadened in this way: this is how one should understand the claim that sciences taxonomize 'by causal powers'. The problem is that on such an understanding of taxonomy being 'by causal powers' those properties in terms of which one must taxonomize do not supervene on intrinsic, physical properties, and so (4) in the argument from causal powers as stated is either false or does not allow one to infer (5) or (6).³⁸ We have arrived at the same conclusion I drew in §4: there is no constraint on taxonomy, its having to be 'by causal powers', which both is reflected in actual taxonomic practice in science *and* which specifies properties that supervene on the intrinsic, physical properties of the entities in the extensions of the resulting kinds.

Suppose, on the other hand, that we assume (4) to be true. Now, it might be thought that one can simply modify the argument from causal powers throughout to allow for the contemporaneous affecting of an entity's causal powers. Doing so would allow us to derive (5*) instead of (5):

- (5*) Any causes of behavior which are to be taxonomic in cognitive psychology must supervene on the intrinsic, physical properties of the individual, *or must contemporaneously affect those properties.*

(6) would also need to be modified appropriately so as to include the emphasized disjunct. Yet an individualist should resist this modification of her view because individualism, so construed, would no longer imply that doppelgängers *must* be taxonomized under the same psychological kinds. Since molecularly identical individuals may be subject to different contemporaneous effects, they may be taxonomized differentially even supposing these reformulated versions of global individualism and so individualism in psychology to be true. Recall that it is the intuition that a properly scientific psychology must taxonomize doppelgängers in the same way that, in part, motivates individualism in psychology in the first place, and this same intuition that gives the individualist a *prima facie* reason to think that the taxonomy of mental states offered by folk

psychology is mistaken. This reformulation of the argument from causal powers does not allow one to derive a version of individualism in psychology worth deriving.

So Fodor's attempt to account for relational individuation by weakening or broadening global individualism fails for much the same reason that I suggested that the initial argument from causal powers fails: no single sense of 'causal powers' makes both (1) and (4) true. This brings me to the second way in which an individualist could attempt to reconcile global individualism with the prevalence of relational taxonomies in science. It is here that the claim that historical and relational taxonomies have a *preliminary* character and the revisionary claim that often accompanies it are relevant. While an entity's history and its relations affect what causal powers it has at a time, this should not be taken to imply that its historical and relational properties are themselves taxonomic. Only causal powers or properties which supervene on causal powers can be taxonomic in science, even if historical and relational properties serve as a reliable guide to what causal powers an entity has. When an entity's history or its relations make a relevant difference to that entity's behavior, the corresponding historical or relational kinds are at best an approximation to or a proxy for taxonomic kinds individuated by causal powers.

To see how problematic these claims about relational taxonomies are, however, let us consider Fodor's own example of a putatively relational but individualistic concept, that of a *planet*. Something is a planet in virtue of facts about that thing's constitution (since comets are not planets) *and* facts about that thing's motion relative to a particular star (since meteors are not planets). The concept planet is relational. A physical duplicate of the Earth, say, that does not bear the relation to a star that is constitutive of being a planet is not a planet, even though that duplicate must, *ex hypothesi*, possess the same intrinsic causal powers as the Earth.³⁹ Nevertheless, the concept of a planet *as it is* features in explanations in astronomy. It at least appears to be a perfectly acceptable concept in itself, and does not seem to be preliminary in any way. One cannot simply abstract away from an entity's actual relations in determining whether or not that entity is a planet. Actual taxonomic practice in astronomy makes it implausible to think that the concept planet is in any way preliminary or must be revised in

some way to form a proper scientific kind. In fact, since the concept is essentially relational, if we attempt to revise the concept planet in the required way we lose the concept of a planet altogether. This suggests that it is neither necessary nor even possible in general to offer an individualistic revision of relational, scientific kinds.

Likewise, it is implausible to view the concept of a *species* as preliminary or as being revisable in the specified way. Reproductive isolation and niche occupation in an actual environment are two relational features that, as we saw in §4, are part of the species concept. Neither of these components of the species concept are or could be fixed by the intrinsic causal powers that any individual has: actual relations that individual organisms stand in play a crucial role in determining which species they belong to. Actual taxonomic practice in evolutionary biology does not appear to view the species concept as in any way preliminary, and like the case of planet, I suggest that we take the appearance at face value. Reflection on this example, like the last, suggests that it is neither necessary nor even possible in general to offer an individualistic revision of relational, scientific kinds.

Part of the difficulty in seeing how the individualist's claim about the preliminary character of relational taxonomies and her subsequent revisability claim are supposed to work in the cases of the concepts of planet and species stems from two important differences between these cases and the paradigm case of a successful revision, that of the revision from weight to mass. In the latter case, there is a clear way in which the concept of weight can be factored into distinct internal and external components, and it is a trivial matter to show how these novel factors (mass and gravitational attraction, respectively) are to operate within Newtonian mechanics. The cases of planets and species have neither of these features.

This is an *a posteriori* difference between the cases, depending as it does on how the concepts are embedded in the corresponding scientific theories. A more detailed discussion of the similarities and differences between these types of cases would, I think, help in determining whether psychological kinds are likely to be narrowly revisable. But to recognize that not all scientific kinds must be revisable is already to acknowledge the failure of the argument from causal powers as an argument based on global individualism.

§6. CAUSAL POWERS, ONE MORE TIME

In 'A Modal Argument for Narrow Content',⁴⁰ Fodor offers a renewed and somewhat revised defence of his position in *Psychosemantics*. Fodor's discussion in this paper is interesting, not only because it expresses the tensions that I have identified above in the individualist's appeal to the notion of causal powers, but also because it reflects more starkly the *a priori* character of Fodor's own commitment to global individualism. For these reasons and for the sake of completeness, I conclude my discussion by considering Fodor's argument in this more recent paper.

Fodor focusses on the fact that relational individuation is ubiquitous in the sciences, a fact which he takes to entail that certain relational properties, properties such as being a planet and being a member of a particular species, are causally and explanatorily adequate in themselves. In this respect, these relational kinds contrast with other relational properties such as being a brother or having siblings. Even if there is some sense in which individuals have causal powers in virtue of instantiating this latter type of relational property, there is an intuitive sense in which an appeal to these causal powers is not truly explanatory. Given that properties like being a planet and being a member of a particular species are, as Fodor puts it, 'relational properties in good standing' (p. 12) but that not *all* ascriptions of relational properties are explanatory, what is needed is some criterion that distinguishes the two. Fodor takes the intuitive differences between the examples he presents as reason to develop and *a priori* constraint or necessary condition 'for when a difference in the properties of causes constitutes a difference in their causal powers' (p. 10). When is a relational property that an entity instantiates itself causally responsible for some effect?

Fodor thinks that there is an *a priori* answer to this question, an answer which provides a criterion for distinguishing two types of relational properties. Those concepts or kinds which satisfy this constraint or criterion can be taxonomic and so explanatory in the sciences; those which do not satisfy it cannot be taxonomic or explanatory. Fodor organizes his discussion around the claim that *wide* contents do not constitute causal powers satisfying the general condition he develops; hence, they are not to be taxonomic or explanatory in psychology.

Fodor's argument for individualism in psychology here, like the argument from causal powers, utilizes a more general claim about scientific taxonomies.

Before examining Fodor's criterion itself, I want to express my doubts about Fodor's way of stating the problem that the prevalence of relational taxonomies poses for an individualist. For Fodor, the question that needs answering is this: when can the (relational) property of a cause count as what he calls a *real causal power*?, where only 'real causal powers' feature in scientific taxonomies and generalizations. Like the 'methodological point' that Fodor made in *Psychosemantics* discussed in §4 above, the relation that Fodor presumes to hold between causal powers and scientific explanation holds only if causal powers are conceived of as violating the constraint of supervenience specified in Fodor's 'metaphysical point'. Fodor relies on what I have called the *extended sense* of 'causal powers' even in stating the problem in the way that he does.

Fodor presupposes the extended sense of 'causal powers' throughout much of the paper. Consider the following two passages:

Taxonomy by relational properties is ubiquitous in the sciences, and it is not in dispute that properties like *being a meteor* or *being a planet* — properties which could, notice, distinguish molecularly identical chunks of rock — constitute causal powers. (p.12)

And the intuition about features of causal history is that some of them are causal powers (e.g., having been dropped in transit; having been inoculated for smallpox) and some of them are not . . . (p. 18)

If molecular duplicates can differ in some property, then that property cannot supervene on the internal, physical properties that those duplicates share. Fodor is here abandoning his 'metaphysical point', the claim that causal powers supervene on local microstructure. As I argued in §§4–5, however, this metaphysical point is not an optional extra for an individualist defending the view that individualism in psychology follows from global individualism. In fact, elsewhere in 'A Modal Argument . . .' (e.g., pp. 16–17, 25), Fodor himself identifies the central claim of individualism as the claim that psychological kinds are locally supervenient.

Like Fodor's version of the argument from causal powers, his argument here shifts between two different and incompatible notions of causal powers. In accord with the first, the extended sense, taxonomy in

science *is* taxonomy by causal powers; in accord with the second, the restricted sense, causal powers supervene on intrinsic physical properties. The dilemma here can be stated in the terms that Fodor uses in 'A Modal Argument . . .'. If real causal powers must supervene on intrinsic, physical properties, it is false that *only* real causal powers feature in scientific taxonomies. And if it is true that only real causal powers feature in scientific taxonomies, then real causal powers do not supervene on intrinsic, physical properties, and so there is no reason for the properties of a scientific *psychology* to be locally supervenient.

Consider, now, Fodor's criterion, which he states in terms of what he calls 'cause properties' (CP), the properties that a cause has:

For the difference between being CP1 and being CP2 to be a difference of causal powers, it must at least be that the effects of being CP1 differ from the effects of being CP2. But, I claim, it is further required that this difference between the effects be *nonconceptually* related to the difference between the causes. (p. 24).

In keeping with the spirit of the original argument from causal powers, this general criterion applies to scientific taxonomies *per se*. Properties which, intuitively, don't seem to endow their bearers with real causal powers include being a brother, having siblings, being a H-particle, and having water thoughts. Fodor claims that what the inadmissible cases have in common is that statements ascribing the effects that such powers have are conceptual truths. So, for example, if you're a sibling it is true that you have the 'power' to have sons who are nephews. But this is true in virtue of the meanings of 'sibling', 'son' and 'nephew'; it is a conceptual truth that siblings have the power to have sons who are nephews. This is not true of the causal powers used in scientific taxonomies. As Fodor says of one's real causal powers, 'to put it roughly, your causal powers are a function of your *contingent* connections, not of your conceptual connections.' (p. 19). Relational individuation creates genuinely explanatory kinds (i.e., classifies entities by their real causal powers), only if the statements which describe the effects that putative powers have are not conceptual truths.

Note that this criterion presupposes the analytic-synthetic distinction, since conceptual truths are just analytic truths, even if in some cases unobvious ones. The introduction of the notion of analyticity here to delineate real causal powers from what you might think of as *mere-Cambridge* causal powers would be enough for some of us to think that

something had gone wrong. Whatever else one resurrects to save an argument for individualism, let it not be the analytic-synthetic distinction! Even those who disagree here about the general value of the analytic-synthetic distinction in the philosophy of science should have doubts about Fodor's reliance on it in this context, and not only because of Fodor's own explicit criticisms of views which, he claims, are committed to it.⁴¹ As I'll argue below, the analytic-synthetic distinction simply cannot do the work that Fodor requires that it do in distinguishing real causal powers from mere-Cambridge causal powers.

To take just one set of examples, though critical examples in this context, consider whether the statements attributing effects to an individual's having thoughts with a particular content are analytic. Fodor claims that each of the following statements is conceptually necessary:

If B is a property that water thoughts have, then if I am connected to water in the right way, then B is a property that my thoughts have.

If B is a property that water behaviors have, then if my thoughts are water thoughts, then my behaviors have B.

Being connected to water rather than twater leads to water thinking rather than twater thinking.⁴²

For these statements to be conceptually necessary they must both be necessary truths and be true solely in virtue of the meanings of the words they contain. I think that the analytic status of even these three statements can be reasonably questioned, though I shall not be concerned to defend this claim here. Even if these statements *are* analytic, this is not sufficient to show that the property of having a particular wide content is not a real causal power; to show that, every statement ascribing an effect to the wide content of a mental state must be analytic, and this is an extremely implausible claim *whatever* one thinks of this type of appeal to the analytic-synthetic distinction. For example, consider each of the following statements:

Stella turned on the tap because she wanted water.
 Archie called his mother because he was worried about her.
 Joan walked because she thought she needed the exercise.

Each of these statements offers a common-sense, psychological ex-

planation of a behavioral effect, and none of them is analytic. There are *many* effects that having mental states with a particular content have, and it is implausible to see *every statement* ascribing these as analytic. Even if intuitions about analyticity are shared to a large extent for some core cases, there is a potentially infinite number of cases to consider here, and very few of them will be analytic.

There are certainly more details to Fodor's argument than I have discussed here.⁴³ But I do not intend this section to function as a comprehensive discussion of Fodor's paper, and rather than focus on more specifics here I want instead to return to the broader issue of why I think that the general approach that Fodor has adopted here is mistaken by relating my discussion in this section thus far to that in §§4–5.

In §5 I argued that the existence of relational taxonomies in the sciences constitutes quite a general problem for the argument from causal powers, since the properties in terms of which such taxonomies are individuated do not supervene on an entity's intrinsic properties. Fodor does not seem to think that there is a *general* problem here, I think, because he primarily uses the extended sense of 'causal powers'. A central criticism of both the argument from causal powers and Fodor's defense of it in 'A Modal Argument . . .' has been that the extended sense of 'causal powers' will not get you individualism in psychology.

Since Fodor does not consider there to be a general problem for global individualism concerning relational individuation, he formulates a weak necessary condition for being a real causal power. All that the condition need do is rule out, in a principled way, mere-Cambridge causal powers from counting as genuinely explanatory. Yet, general worries about the appeal to analyticity to one side, we have seen that it is doubtful whether *on its own terms* Fodor's criterion rules out an appeal to wide content as explanatory in psychology. His criterion does not apply to kinds in themselves but to the causal generalizations that they feature in; it could not rule out an appeal to a given relational kind unless *every* causal generalization that it featured in was analytic.

At the end of §5 I suggested that the question of when relational properties are revisable into narrow properties has only an *a posteriori* answer; that answer depends on whether there is (or is likely to be) a

theoretical framework for expressing the resulting narrow property. I think that the same is true of the question that Fodor attempts to answer with his *a priori* criterion, the question of when a relational property is itself causally responsible for some effect. This is one reason why his criterion *cannot* rule out appeals to wide content in psychological explanations.

The need for an *a posteriori* answer to this question is implicit in several places in Fodor's own discussion. For example, he says,

the question we are raising is not whether the difference between having CP1 and having CP2 is a difference in causal powers; rather, it is whether the difference between having CP1 and having CP2 is a difference in causal powers in virtue of its being responsible for a certain difference between E1 and E2, namely, in virtue of its being responsible for E1's having EP1 rather than EP2 and for E2's having EP2 rather than EP1. The point I am wanting to emphasize is that a cause property might fail to count as a causal power in virtue of its responsibility for one effect property, but still might constitute a causal power in virtue of its responsibility for some other effect property. (pp. 12–13).

Fodor illustrates his point here by considering the possibility of having *sibling's disease*, a disease which 'causes people who have siblings to break out in a rash' (p. 13). If there were such a disease, then having it would be instantiating a real causal power, since the effects it has are contingent, not conceptual. This implies that any of the properties that Fodor would like to place together under the heading 'relational properties *not* in good standing', properties like being a sibling, having a brother, being a H-particle, and having water thoughts, could all be real causal powers, were the world a certain way. All that one need do is to formulate some contingently true statement ascribing an effect that, say, having water thoughts has in order for water thoughts to count as real causal powers.

I want to suggest that there is nothing about these relational properties *themselves* that makes them unsuitable for scientific taxonomies: whether they are suitable or not depends on which effects you attribute to them *and* on how the world is. But precisely the same is true of the categories and kinds that feature in our existing sciences. There is no intrinsic difference between the relational properties of being a sibling and being a planet which makes only the latter suitable for scientific explanation. The relational properties of being a sibling and being a planet, as a matter of fact, do differ in the role that each plays in

scientific taxonomies, but this is not because only one of them is suitable for taxonomy in science. If this is right, then determining an answer to the question Fodor has posed, the question of when a relational property that an entity instantiates is itself causally responsible for some effect, requires an *a posteriori* approach.

There is no *type* of relational property which plays an individuating role in scientific taxonomies, and so any *a priori* criterion that attempts to capture what it is about certain relational properties that allow them to be taxonomic in science is not only mistaken but reflects a mistaken approach to issues concerning the nature of scientific taxonomies and explanations. This, in turn, brings us back to one of the key intuitions that motivates the argument from causal powers, the idea that it must be the intrinsic properties of entities that are taxonomic in science. For just as relational properties cannot be divided *a priori* into those that are and those that are not suitable for scientific taxonomy, neither can properties be divided into two groups, intrinsic and relational properties, only the first of which can be taxonomic in science.

§7. CONCLUSION

I have argued that the causal nature of psychology provides one with no reason to think that individuation in psychology, or, indeed, in any science concerned to develop causal generalizations, must abide by the constraint of individualism. It would be very interesting were some global analogue to individualism in psychology to function as a constraint on scientific explanation as it is practiced, or were there compelling arguments for thinking that it should serve as a regulative norm in science. The argument throughout this paper has been that, in fact, when we examine the patterns of individuation in sciences as they are practiced, neither of these claims receives any support.

How much of what I have said speaks against the argument from causal powers, and how much against individualism itself? It would certainly be rash to conclude that individualism in psychology is false simply on the basis of what I have argued here (even if you believe all of it). However, the failure of the argument from causal powers suggests the following dilemma for the individualist. A scientific psychology need not be individualistic because of its causal nature. If the indi-

vidualist views psychology as a regular, casual-explanation-providing science, then, since individualism is false in a wide range of sciences what reason is there to think that psychology is an exception, i.e., that it *is* individualistic? On the other hand, the individualist could attempt to make the case that psychology is distinct in this respect, providing reasons for thinking that, even if scientific explanation in general is not individualistic, psychology must be. This would involve not only rejecting the argument from causal powers, but re-focussing attention on the nature of individuating and explanatory practice *in psychology*.⁴⁴

Central to my argument has been the claim that the individualist defending the argument from causal powers must employ an extended sense of 'causal powers' to make global individualism true, whereas she must use 'causal powers' in a restricted sense in order for causal powers to supervene on intrinsic, physical properties. In §3 we saw that the proponent of the argument from causal powers might accept the view that any relational, scientific concept can be factored into one that individuates the entities in its extension by their intrinsic causal powers. Towards the end of §5 I suggested that the possibility of such revisions did not look plausible, but I have offered no *general* argument to show that this option is not defensible. Although I see no way that the ambitious revisability claim I have discussed can be successfully defended, a less ambitious claim about revisability might provide a suitable basis for a closely related argument for individualism. The argument I have in mind would require establishing what it is about certain relational concepts in science that allows them to be revised narrowly, and showing that relational concepts in psychology also have this property. Note that such an argument, unlike the argument from causal powers, could not proceed on an *a priori* basis.

Finally, I claimed in §1 that the argument from causal powers relied on a number of intuitions about explanation, causation, and causal powers. While I think that the argument from causal powers should be rejected, working out which of these intuitions should be rejected along with it, or which inferences from these intuitions to the premises of the argument should be rejected is a task I leave for another time. For those of us swayed by the intuitions but who reject the argument from causal powers, there remains more work to be done.

NOTES

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¹ *Psychosemantics* (Cambridge, Ma.: MIT Press, 1987), ch. 2; 'A Modal Argument for Narrow Content,' *Journal of Philosophy*, LXXXVIII (January 1991): 5–26. Recent endorsements of Fodor's argument include Tim Crane, 'All the Difference in the World,' *Philosophical Quarterly*, 41 (January 1991): 1–25; Colin McGinn, 'Conceptual Causation: Some Elementary Reflections,' *Mind*, C (October 1991): 573–586; and Meredith Williams, 'Social Norms and Narrow Content,' *Midwest Studies in Philosophy*, XV (Indiana: University of Notre Dame Press, 1990).

² 'Individualism and Psychology,' *Philosophical Review*, 95 (January 1986): 3–45, at pp. 3–4.

³ *From Folk Psychology to Cognitive Science* (Cambridge, Ma.: MIT Press, 1983), pp. 164–165.

⁴ Cf. both my statement of the argument from causal powers and Fodor's own discussion, esp. in *Psychosemantics*, ch. 2, with that of Robert van Gulick, 'Metaphysical Arguments for Internalism and Why They Don't Work,' in S. Silvers, ed., *Rerepresentation* (Boston: Kluwer, 1989). Van Gulick sees the individualist as claiming that there is a deep problem with mental states being both semantic *and* causal. Since, however, Fodor and many other individualists think that mental states can be both semantic and causal, i.e., that there is some notion of narrow content, it is not clear that this identifies a fundamental tension for individualists.

⁵ Although there is a difference between 'the causal powers of x' and 'the causal powers of the individual in which x is instantiated', since nothing in my argument turns on this difference, I simplify my statement of the argument from causal powers in a way that ignores the difference.

⁶ *Psychosemantics*, p. 34 (footnote omitted).

⁷ The idea that powers are forward-looking, that they are intrinsically related to the effects they can bring about, has its source in Locke's classic discussion of powers in his *Essay*, book II, ch. 21–23. Cf. also Sydney Shoemaker, 'Causality and Properties,' in his *Identity, Cause, and Mind* (Cambridge University Press, 1984), who defends the view that the concept of the *genuine* properties that an object has is to be analyzed in terms of the concept of causal powers. Even though this view may seem to support global individualism, I have argued elsewhere that it does not; see my 'Does Individualism Follow From the Causal Theory of Properties?', typescript. The point to note here is that, like Locke, Shoemaker posits an intrinsic relation between powers and possible *effects*.

⁸ It is, however, essential to the methodological claim I am advocating in this paper, as I hope will become apparent.

⁹ This intuition about the characterization of an entity *qua* cause in a causal explanation has been expressed to me independently and in various forms by Carl Ginet, Terence Horgan, Terence Irwin and Sydney Shoemaker. It is an intuition which will be focal in much of the remaining discussion in this paper.

¹⁰ Much the same is true of the criteria, such as degree of naturalness, entrenchment or simplicity, which have been offered for marking off projectible from non-projectible predicates.

¹¹ Recent discussions of psychological laws, interesting as they are, thus seem to me

irrelevant to the soundness of the argument from causal powers. On psychological laws, see Fodor *Psychosemantics*, ch. 1, and 'You Can Fool Some of the People All of the Time, Everything Else Being Equal: Hedged Laws and Psychological Explanations,' *Mind*, C (January 1991): 19–34; Terence Horgan and John Tienson, 'Soft Laws,' *Midwest Studies in Philosophy*, XV (Indiana: University of Notre Dame Press, 1990); and Stephen Schiffer, 'Ceteris Paribus Laws,' *Mind*, C (January 1991): 1–17.

¹² As Bob Stalnaker points out in his 'On What's in the Head,' in J. Tomberlin, ed., *Philosophical Perspectives*, 3 (Atascadero, Ca.: Ridgeview, 1989), at p. 291. By 'exemplified' here I mean ideally represented, not most usually represented.

¹³ It is not clear whether Fodor himself accepts the general claim that any non-individualistic concept can be narrowed in this way. However, were this pattern of revision — from wide to narrow individuation — to apply to scientific taxonomies in general, this would be powerful support for the appropriateness of the corresponding revision in psychology.

¹⁴ *Psychosemantics*, p. 44.

¹⁵ These were, respectively: (1) Taxonomic properties and entities in the sciences must be individuated by their causal powers; (4) The causal powers of anything are determined or fixed by that thing's intrinsic, physical properties.

¹⁶ Cf. this with Frances Egan's claim, in her paper 'Must Psychology Be Individualistic?,' *Philosophical Review*, C (April 1991): 179–203, that Fodor's methodological point does not entail individualism, while his metaphysical point is false; cf. also van Gulick, *op. cit.*, p. 157. One reason for stating the problem in the argument from causal powers as I have is that, as we shall see both in this section and the next, the notion of taxonomizing by causal powers itself requires clarification.

¹⁷ *Op. cit.*, and 'Individuation and Causation in Psychology,' *Pacific Philosophical Quarterly*, 70 (December 1989): 303–332; see especially his discussion in the latter paper, pp. 309–310.

¹⁸ Syphilis is a disease caused by the *Treponema pallidum* bacteria, infecting the blood vessels. This is how it is distinguished from closely related diseases, such as yaws and pinta. See C. B. S. Schofield, *Sexually Transmitted Diseases* (3rd ed., New York: Longman, 1979), esp. ch. 5.

¹⁹ Note that I am not claiming that epidemiological taxonomy is *primarily* non-individualistic, only that it is at least sometimes so; cf. William Goosens, 'Underlying Trait Terms,' in S. Schwartz, ed., *Naming, Necessity, and Natural Kinds* (Ithaca, NY: Cornell University Press, 1977), on diseases as bodily states.

²⁰ For example, a particular virus can be cited as a cause of illness even though that kind of virus is taxonomized relationally.

²¹ While the *belief* that a practice is taboo does explain many behaviors, one cannot simply replace 'is a taboo' by 'is believed to be a taboo' in anthropological explanations. Cf. the argument of Nicholas Sturgeon against Gilbert Harman's sceptical claim about the role of moral properties in moral explanations; see especially Sturgeon's 'Moral Explanations,' in G. Sayre-McCord, ed., *Essays on Moral Realism* (Ithaca, NY: Cornell University Press, 1988).

²² For Davidsonian reasons, it is implausible to think that explanations in anthropology and other social sciences are not causal at all, i.e., that they are *purely* hermeneutic in nature. In any case, the fact that individuation in these disciplines is frequently non-individualistic poses a problem for the individualist. One's view on the nature of explanation in the social sciences may relocate or redefine the problem; it does not remove it.

²³ Lombroso, founder of the discipline of criminal anthropology, proposed that criminals have atavistic physical and mental features which are hereditary. See Stephen J. Gould's *The Mismeasure of Man* (Middlesex, England: Penguin, 1981), ch. 4, for discussion of Lombroso's theory.

²⁴ In terminology that Terence Horgan and George Graham have introduced, the

category criminal is *empirically austere*. See their 'In Defense of Southern Fundamentalism,' *Philosophical Studies*, 62 (May 1991): 107–134, esp. §3.

²⁵ Though this example is one cited by many people, including Tyler Burge and Frances Egan, as an instance of a non-individualistic kind, there is little discussion by these authors of *why* species are not individuated by their intrinsic causal powers. For some explanation of why this is true of species, see Richard Boyd's discussions of homeostatic property-cluster definitions in his 'Natural Kinds, Homeostasis and the Limits of Essentialism,' unpublished manuscript, 1985; 'How to be a Moral Realist,' in G. Sayre-McCord, ed., *Essays on Moral Realism* (Ithaca, NY: Cornell University Press, 1988); 'Realism: What It Implies and What It Does Not,' *Dialectica*, 43 (fasc. 1–2, 1989): 5–29; and 'Realism, Approximate Truth, and Philosophical Method,' in C. Wade Savage, ed., *Scientific Theories* (Minnesota: University of Minnesota Press, 1990).

²⁶ *The Growth of Biological Thought* (Cambridge, Ma.: Harvard University Press, 1982), p. 273.

²⁷ For example, this definition differs from Mayr's earlier definition in his *Systematics and the Origins of Species* (new ed. New York: Columbia University Press, 1982). See Mayr's *The Growth of Biological Thought*, ch. 6, for an overview. Note that even phenetic conceptions of species individuate species in terms of relational properties, such as behavioral and ecological properties. See R. Sokal, and T. Crovello, 'The Biological Species Concept: a Critical Evaluation,' *American Naturalist*, 104 (1970): 127–153, for a defence of the phenetic conception.

²⁸ I am not simply relying on a quirky feature of Mayr's view of the species concept here. Consider the conception of 'species as individuals' that Michael Ghiselin and David Hull have defended. On this conception of species, phylogenetic history does play an individuating role. On this conception of species it is also difficult to make sense of the idea that species are individuated from one another by their intrinsic causal powers. See Ghiselin, 'A Radical Solution to the Species Problem,' *Systematic Zoology* 23 (1974): 536–544; and Hull, 'A Matter of Individuality,' *Philosophy of Science* 45 (1978): 335–360.

²⁹ 'Evolution, Population Thinking, and Essentialism,' *Philosophy of Science*, 47 (1980): 350–383; and *The Nature of Selection* (Cambridge, Ma.: MIT Press, 1984), ch. 5.

³⁰ Though it is not entirely clear, this seems to be Fodor's own suggestion in 'A Modal Argument for Narrow Content'. For further discussion, see §6 below.

³¹ Though such an argument would warrant a somewhat stronger conclusion than the one I have drawn and allow one to see that it is the attention to actual taxonomic practice rather than an excessive notion of a causal property that provides the backbone of my argument, its articulation requires some discussion of the distinction between intrinsic and extrinsic powers, as well as an examination of a different set of examples from the sciences.

³² Note that I am *not* saying that one thing cannot be classified both by schemes that are relational and by those that are individualistic. My claim is about a certain incompatibility between two types of taxonomic scheme that turns on the fact that the relational and intrinsic, physical properties that an object may have are exclusive of one another: no one *type* of thing can be both relational and intrinsic.

³³ *Psychosemantics*, p. 43.

³⁴ 'Methodological individualism is the doctrine that psychological states are individuated *with respect to their causal powers*. Methodological solipsism is the doctrine that psychological states are individuated *without respect to their semantic evaluation*.' *Psychosemantics*, p. 42.

³⁵ *Loc. cit.*

³⁶ *Op. cit.*, pp. 307–308. I owe some debt here to Stalnaker's insightful discussion in this paper.

³⁷ The following distinction between the notions of *contemporaneous* affecting and *historical* affecting was suggested to me by Sydney Shoemaker.

³⁸ Precisely the same is true of 'historical affecting', appealed to in this way.

³⁹ Even a physical replica of the Earth that moved with the exact velocity of the Earth due to some complex combination of forces would not be a planet unless it orbited a star.

⁴⁰ *Journal of Philosophy*, LXXXVIII (January 1991): 5–26. The quotations in the remainder of the text are to this paper; they are cited only by page number in the text.

⁴¹ For example, see his criticisms of meaning holism in chapter 3 of *Psychosemantics*, and those in the Fodor-Lepore introduction to their *Holism: A Shopper's Guide* (London: Blackwell, 1991).

⁴² These examples are taken from pp. 23–24 of 'A Modal Argument . . .'; versions of them are given also on pp. 20–21.

⁴³ For example, one omission in my discussion concerns Fodor's explicit comments to the effect that it is only relative to descriptions of thoughts as having the content *twater* that describing thoughts as having the content *water* does not specify an agent's causal powers. This strikes me as extremely puzzling. A brief comment and a rhetorical question: (i) relational properties that are agreed to be part of perfectly acceptable, existing scientific explanations such as the property of being a planet, do not fail to be 'real causal powers' in the actual world because the entities which instantiate them have possible doppelgängers which lack the property; (ii) why does ordinary folk psychological explanation and its variants in developmental, personality, and social psychology not place ordinary wide content in precisely the same position as relational properties which play an explanatory role in other causal sciences?

⁴⁴ For example, one might claim that it is the computational nature of mental states which entails that psychology be individualistic. I have discussed this type of argument for individualism in ch. 3 of my doctoral dissertation, 'Individualism, Psychological Explanation, and Mental Representation', Cornell University.

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