Restructuring Fodor's Concepts

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ABSTRACT

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This thesis critically examines Jerry Fodor's account of concepts as outlined in his 1998 book, *Concepts: Where Cognitive Science Went Wrong.* According to this account, concepts are ordered pairs consisting of mental representations and contents. The relationship between the content of a concept and the mental representation is law-like and functions as follows: The content of the concept is whatever causes its mental representation to be tokened.

The issue that I examine is Fodor's claim that it is objects which are picked out by our concepts. I argue that this point of view only arises because he conflates the notion of an object with the notion of its property. Given the mechanisms of perception which underwrite the functioning of our concepts, it is actually properties and not objects that cause our mental representations to be tokened, and therefore Fodor's concepts need to be restructured. I put forward a proposal for how this might be achieved, which requires that properties be added to the structure of concepts.

In the rest of the thesis I examine how Fodor deals with two problematic cases from philosophy of language, namely the Frege cases and the Twin-Earth cases. I argue that the proposed account I set forth can provide more efficient solutions for handling the cases than Fodor's original account.

To my family,

for their love and support

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Introduction

According to Jerry Fodor's 1998 account of concepts, a concept is an ordered pair, consisting of a mental representation and a content. The mental representation counterpart of a concept is an unstructured symbol. The content of a concept is a class of objects. The relationship between the mental representation and the content is law-governed or nomic, meaning that there is a law which ensures that they co-instantiate. Fodor describes the ascription of content to the mental representation as follows: "A representation R expresses a property P in virtue of its being a law that things that are P cause tokenings of R (in, say, some still-to-be-specified circumstances C)."[1]

In this thesis I argue that the structure of Fodor's concepts needs to be revised, because, as it stands it conflates the objects with the properties which trigger the mental representation. This informational semantics account is underwritten by perceptual mechanisms of detection which are themselves triggered by properties, not by objects per se. The recommended revision involves a separation of the properties which trigger the mental representation from the objects which have these properties. As such, I propose that concepts ought to be considered tripartite constructs that consist of a mental representation, a property, and the object in which the property is instantiated.

According to the revised version of concepts, only the connection between the mental representation and the property is direct. The connection between the mental representation and the class of objects is indirect and it is reliably ensured by the fact that if

[1] Fodor, Jerry. *Concepts*, pg.12.

the mental representation is nomically connected to a property and if that property is nomically connected to an object, then the mental representation is nomically connected to the object as well. This connection between the mental representation and the class of objects is hence ensured by the transitivity of nomological relations. In the second and third chapter of the thesis I consider how Fodor's original account of concepts can handle two problematic cases from philosophy of language, namely the Frege cases and the Twin-Earth cases. I argue that Fodor's account of concepts fails to successfully handle these cases, and that the cases can be resolved more efficiently if we consider them to involve breakdowns in the reliable connection between mental representations and objects.

Chapter 1: The Structure of Fodor's Concepts

1.1 Fodor's Philosophical Project

This preliminary chapter aims to provide an examination of the informational semantics account that Jerry Fodor advances, with particular focus on the presentation of the account in his 1998 book *Concepts*. The facets of Fodor's project that I will concentrate on are the notions of information and representation. I begin the chapter with an exposition of the notions as they appear in Fodor's work. Afterwards I consider some criticisms of the relevant notions and propose a way in which Fodor may revise his theory of concepts to deal with these objections. In the second and third chapters I show that the revised version of concepts can provide more satisfactory solutions than Fodor's original proposal in dealing with some problems from the philosophy of language, namely the problems raised by Frege cases (chapter 2) and those raised by the Twin-Earth cases (chapter 3).

The Representational Theory of Mind (RTM) that Fodor assumes as correct is systematically outlined in *Concepts* by means of five theses. I will first list these and then give a short summary of their purpose and function within Fodor's theory of mind.

1. Psychological explanation is typically nomic and is intentional through and through.
2. Mental representations are the primitive bearers of intentional content.
3. Thinking is computation.
4*. Meaning is information (more or less).
5*. Whatever distinguishes coextensive concepts is ipso facto "in the head".[2]

[2] The theses are described by Fodor on pages 7 through 15 of *Concepts*.

The fourth and fifth theses are the additions to the RTM that Fodor advances.[3] There are also two further constraints on the RTM that Fodor defends in the present book. The first constraint is that content is not to be even partially constituted by inferential relations, and the second constraint is that the mental representation that belongs to a concept is unstructured.

In the following discussion I will give a brief description of the logic of the RTM, with particular focus on how the mentioned theses play a role in it. The fundamental basis of the project is to construct a naturalized picture of what the mind consists of that makes it capable of thinking and communicating through language use. The naturalization aspect is to be understood as a methodological principle, whereby the intentional and semantic notions that are typically employed in the description of our psychological and linguistic behaviour ought to be accounted for in non-semantic and non-intentional language. This methodological manoeuvre both prevents circularity and allows Fodor to consider the possible implementations or underpinning phenomena which might explain the mysterious categories of 'semantic' and 'intentional'.

The naturalized picture on offer is roughly the following. The human mind is a system consisting of Mental Representations (henceforth MR), which are discrete, formally distinct mental particulars. Our behaviour is guided by the attitudes we have towards tokens of particular complexes, i.e., propositions, which are constituted from atomic MRs. Examples of propositional attitudes include (paradigmatically for psychology) *belief* and *desire*. It is one of the main goals of Fodor's philosophical project that it be

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[3] The fourth thesis is not entirely recent, and can be found in Fodor's 1990 *A Theory of Content*, as well as in *The Elm and the Expert* from 1994. Only the fifth thesis makes its first appearance in *Concepts*.

capable of preserving the intentionality of mental states, because if mental states are not intentional, then they cannot be explained by psychology.

The set of mental representations that a person possesses is the language in which the propositions are formulated, and so thinking is a computational process ranging over the language of mental representations. This language of mental representations is called the Language of Thought (LOT) by Fodor. By 1998, Fodor has stopped mentioning the LOT hypothesis as being the modus-operandi of his computational systems, and in fact there is no mention at all of such a hypothesis in *Concepts*. But the explicit mention of the LOT is all that Fodor has discarded with, because all of LOT's proper elements are still present. It still is the case that thinking is computation, and computational processes are performed over Mental Representations which, for all intents and purposes, are unlearned, syntactic, formally distinct symbols. Each of these symbols has an interpretation, and the interpretation correlates the tokening of the symbol with the instantiation of something in the world. What it is that the symbol correlates with is the central question with which this thesis concerns itself. The important feature to note about the LOT model is that it takes concepts to be the elements of our internal language, and this requires the proponent of this particular form of RTM to explain how it is that the two dimensions, i.e., syntax and semantics, of any interpretable language are implemented at the conceptual level.

On my reading of Fodor's RTM, the syntactic aspect of the LOT is attributable to the physical realizations of concepts within the brain, which are the MRs. Since concepts are tokens of particular mental representations that are formally distinct, this suffices to individuate them, because syntax is, by definition, the aspect of language which formally individuates the expressions. Also, as concepts are symbols on Fodor's computational

picture, there is nothing to prohibit the syntactic composition of complex expressions from simple constituents. Concerning semantic properties, and hence the properties in virtue of which the elements of a language refer, Fodor assumes an informational account according to which concepts refer in virtue of nomic correlations between mental representations and the objects they are about. Adopting this account is tantamount to reducing the aboutness of our concepts to the nomic correlation between instantiations of particular types of objects (or rather their properties) and mental tokenings of particular syntactic objects. This is an important feature of Fodor's theory because it explains what it means for a mental constituent to "represent" or be "about" an external entity.

1.2 : What Do Representations Represent?

Having given a brief exegesis of Fodor's RTM, I will now proceed to discuss the fourth thesis of the RTM. The aim of the remainder of this chapter will be to show the implications that the fourth thesis has for the construal of concepts. I will begin with an exposition of how Fodor himself construes the notion that meaning is information.

The first thing to notice about Fodor's notion of 'meaning' is that it is to be understood as the content of our concepts. He claims that "what meaning is, is a metaphysical question to which, I'm supposing, informational semantics is the answer."[4] Since informational semantics is Fodor's proposal for what bestows content upon a mental representation, the terms 'meaning' and 'content' are rendered interchangeable. To ask for

[4] Fodor, Jerry. *Concepts*, pg.78.

the meaning of an expression is to ask for the content of the expression. Since, according to the second thesis, mental representations are the primitive bearers of intentional content, it follows that when we are concerned with meaning, we are concerned with the meaning of mental representations. Given these clarifications, Fodor's proposal is that "what bestows content on mental representations is something about their causal-cum-nomological relations to the things that fall under them."[5] The informational semantics that Fodor uses to determine the content of our mental representations is the following:

A representation R *expresses the property* P *in virtue of its being a law that things that are* P *cause tokenings of* R *(in say some still-to-be-specified circumstances* C*)*[6]

Given this formulation of informational semantics, Fodor goes on throughout the rest of the book to assume that the contents of our mental representations are the things that cause our mental representations to be tokened. As such, the content of our concept DOG is dogs, because the mental representation DOG expresses the property of *being a dog (or doghood)*, and there are laws which ensure that the things which are dogs cause tokenings of that mental representation. The meaning of a concept, on this model, is the class of objects which causes it to be tokened. A concept, on the picture that Fodor offers, is an ordered pair consisting of a MR and a content, which is the class of objects which cause the MR to be tokened.

1.3 Being vs. Having

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[5] Fodor, Jerry. *Concepts*, pg.12.
[6] Fodor, Jerry. *Concepts*, pg.12.

One of the things to notice about the account just given is that Fodor makes an error in his formulation. The reason that Fodor claims that a class of objects forms the content of a concept is because, as his formulation of informational semantics has it, "things that are P cause tokenings of R". Prima facie the wording of the phrase "things that are P" is awkward, but the awkwardness points to a deeper problem with the formulation. Logically speaking, the only *things that are P*, are Ps. The problem is that Fodor wants to say that there is a difference between Ps and *things that are P*, because he wants to say that Ps are properties, whereas *things that are P* are objects. To illustrate, Fodor envisions that his account applies as follows:

A representation DOG *expresses the property D (doghood) in virtue of its being a law that things that are D (i.e. dogs) cause tokenings of* DOG *(in say some still-to-be-specified circumstances* C*)*

But the problem with Fodor's account is that *things that are D* are not dogs, but rather the property of *being a dog*. What Fodor needs instead of "things that are D" is "things that have D", because things can *have* properties, though they cannot *be* properties. This may seem like a minor infelicity, which is to be handled by an equally minor revision, namely by replacing "are" with "have" in the relevant clause. But, as I hope to show, the structure of Fodor's concepts changes with the revision.

The reason the structure changes has to do with the difference between having a property and being a property. If x *has* the property P, then P does not exhaust what x *is*. If x *is* the property P, then P does exhaust what x is. The consequence of making this dichotomy between the being and having of a property is that, whichever option is chosen,

Fodor's informational semantics will not warrant the notion that the content of a concept is the class of objects it designates. To show this, we need to consider how each option would work. If Fodor adopts the view that what causes our mental representation tokens to be triggered are *those things which are P*, and P is a property, then it is not objects that trigger the tokens of our concepts, but rather properties. If, on the other hand, Fodor adopts the view that what causes our mental representation tokens to be triggered is *those things which have P*, then whatever has P can be the cause of the triggering. However, unlike in Fodor's original proposal, it is no longer in virtue of being what it is that the object causes the triggering, but rather in virtue of having what it has. Fodor's original account could get away with the idea that the object exhausts the content of a concept only because it conflates the property and the object.

As such, if this critique of Fodor's formulation of informational semantics is correct, then properties need to be incorporated into the structure of concepts. The question as to how this is to be done depends on what our mental representations are lawfully connected to in the world, namely, whether what they are connected with are just properties or whether they are also somehow connected to something essential which gives rise to those properties. In order to assess how the revision to the structure of concepts should work, we need to understand what properties are.

1.4 Properties

The question at hand concerns the work that properties do in the informational semantics account. As we have seen, properties are those things, possession of which by an object, triggers a mental representation. It is important to notice that the property P is not a property per se, but rather a property instance. Only property instances can cause the mental representation to be tokened. This interpretation is followed throughout the text. It is in virtue of possessing the property of *doghood* that things which have that property cause us to token the concept DOG. Fodor fails to specify both what precisely properties are and how precisely they work. I will look at four kinds of concepts which informational atomism treats, and examine how the property P functions for each. The four kinds I will look at are sensory appearance concepts, non-sensory appearance concepts, natural kinds, and proper names.

Concerning sensory appearance concepts, such as RED, Fodor claims that "all that's required for us to get locked to redness is that red things should reliably seem to us as they do, in fact, reliably seem to the visually unimpaired."[7] As such, the tokening of the concept RED is solely dependent on whatever it is about us that allows us to pick out the property red in the environment, perhaps in virtue of how light of a certain wavelength affects our perceptual mechanisms. According to Fodor, the mechanism by which this is carried out is the sensorium, so having a functional perceptual system is all that is necessary for picking out the property red.

We turn now to non-sensory appearance concepts. The example that Fodor chooses for this category is the concept DOORKNOB. Fodor's basic idea is that these sorts of concepts function in a similar way to the sensory appearance concepts, though they are not

[7] Fodor, Jerry. *Concepts*, pg.142.

sensory. In particular, Fodor claims: "what makes something the concept DOORKNOB is just: expressing the property that our kinds of minds lock to from experience with good examples of the doorknob stereotype."[8] The "good examples of the doorknob stereotype" here are objects which have the stereotypical doorknob features. It is noteworthy, however, that the MR DOORKNOB, being atomic in accordance with the second constraint of Fodor's RTM, cannot have those features as part of its structure. As such, DOORKNOB cannot be learned by hypothesising that something is a doorknob if, for example, it has the property of being located on a door, and has a certain shape, and so on and so forth. The reason it cannot be learned is that, due to his atomism, Fodor can't concede that we have concepts representing the features of the stereotypical doorknob, because the central idea behind atomism is that "satisfying the metaphysically necessary conditions for having one concept never requires satisfying the metaphysically necessary conditions for having any other concept."[9]

The question that arises is, how an atomic MR expresses a complex property, such as *doorknobhood*, which is constituted by sub-properties (e.g. being located in such-and-such a spot on a door, having such-and-such an appearance). On this question Fodor's verdict is split. On the one hand, "the perceptual detection of *doorknobhood* is always *inferential*. Just as sensible psychologists have always supposed."[10] On the other hand, as mentioned before, informational semantics claims that our concepts resonate to the property that the concept expresses. If the detection of the *doorknobhood* property is always inferential, then it seems outright contradictory to also claim that, nevertheless, our

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[8] Fodor, Jerry. *Concepts*, pg.137.
[9] Fodor, J. Concepts, pg.13.

mental representation "resonates" to instantiations of that property. We either infer that something is a doorknob when we look at it, or we "resonate" to it, but it seems impossible that we do both. The apparent tension can perhaps be settled however. What Fodor might be implying is that the process whereby we first come to possess the concept DOORKNOB is inferential, and after we have the concept, its tokening being caused by doorknobs can be explained as "resonating". After the nomological locking is in place, by whatever means the locking is achieved, the MR that is thereby triggered is locked onto one single property of *being a doorknob.*

We turn now to concepts of natural kinds. Fodor allots the seventh chapter of his book to the analysis of these concepts. Rather than treating natural kind concepts in one uniform way, Fodor claims that there are actually two types of concept involved, namely concepts of natural kinds and concepts of natural kinds *as* natural kinds.[11] The difference between these lies in the way in which we get nomologically locked onto the natural kinds. In the case of water, our concept is locked to the natural kind via its phenomenological properties. To lock onto water *as* a natural kind, our concept needs to be locked to water via its hidden essence, which means being locked to H2O. As such, for natural kind concepts, the way we lock onto water is the same way we lock onto anything else, by locking onto the set of phenomenological properties that things of that kind, e.g., water samples, have in common. For concepts of natural kinds *as* natural kinds, things are different. Although Fodor claims that he would like informational semantics "to say that there are no concepts the possession of which is metaphysically necessary for having WATER *as a natural kind concept"*, he concedes that our getting locked onto these concepts requires theoretical

[10] Fodor, J. Concepts, pg.136. Footnote 10.

knowledge of the microstructure of water.[12] Since these latter concepts are always theory-mediated, they cannot be individuated on the basis of the informational semantics account which Fodor uses to treat the other kinds of concepts.

Finally, in the case of proper name concepts, such as the concept of a specific pet, or a specific person, the concepts work in the same way that the natural kind concepts work, via the phenomenological appearance properties that the name-bearer instantiates. Fodor himself does not extend his natural kind treatment to proper names, per se, but if we are to have concepts of specific individuals there are hardly any other resources which he may employ, if he is to keep to his informational semantics. Of course, specific people have specific hidden essences, namely their DNA, but to be locked to people via these essences requires a theory of genetics, and informational semantics cannot handle theory-mediated concepts, as Fodor himself concedes.[13]

In summary, we can say that in the case of all concepts that informational semantics can treat, whether they are sensory appearance concepts, non-sensory appearance concepts, natural kind concepts, or proper names, to have the concept means to be nomologically locked to a property. Accordingly, RED is locked to *redness*, DOORKNOB is locked to *doorknobhood*, WATER is locked to *waterhood,* and JOHN SMITH is locked to the property of *being John Smith*. But there is one rather weighty outstanding cheque to be cashed in and I intend to take care of it. As we have noticed, some properties such as *being a dog* and *doorknobhood* are complex properties. Fodor claims that the perceptual detection of *doorknobhood* and other such properties is always

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[11] Fodor, Jerry. *Concepts*, pg.155.
[12] Fodor, J. Concepts, pg.158.
[13] Fodor discusses proper names in the appendices to *The Elm and the Expert*, and claims that their content is informational.

inferential, but after the locking to doorknobs is achieved, we are locked onto a single property and the nomological relationship between our mental representation and that property can be explained as 'resonating'. In the next section I consider a critique of Fodor's locking theory of concept acquisition, and I will put forward a model which can answer the demand exhibited in the critique.

1.5 The locking model of concept acquisition:

A critique:

Some critics disagree with the type of set up Fodor has advanced for handling the acquisition of concepts. In particular, Robert Stainton and Christopher Viger, in a review essay of Fodor's *Concepts* criticize the notion that our minds can get locked to the property of *being a doorknob* from experiences of stereotypical doorknobs without doing so inductively.[14] Their claim is that the locking model just will not work for Fodor, because Fodor cannot explain how the non-inductive acquisition process works. Saying that enough experience with stereotypical doorknobs will get someone locked onto the concept DOORKNOB, is not an explanation unless Fodor is prepared to specify what it is about those experiences that triggers the concept. According to Stainton and Viger, the reason that such an explanation is unavailable, is that no explanation of concept acquisition, not even Fodor's, can meet the host of constraints that Fodor claims need to be met by any such

[14] Robert J. Stainton and Christopher Viger. "Review Essay", page.144.

account. In their article, Stainton and Viger compile the said constraints and list them as follows:

> (a) The theory of concept acquisition should not entail radical nativism about concept possession;
> (b) It must distinguish merely having an experience from actually tokening a concept;
> (c) It cannot end up being an inductive story;
> (d) It must nevertheless share the virtues of the inductive account, including especially overcoming the doorknob/DOORKNOB problem;
> (e) It must be atomistic.[15]

The doorknob/DOORKNOB problem is succinctly expressed by Fodor as being the problem of explaining "why [it is] so often experiences of doorknobs, and so rarely experience with whipped cream or giraffes, that leads one to lock to doorknobhood."[16] This problem is specific to "triggering" accounts of concept acquisition, namely, accounts according to which a single experience is sufficient for acquiring a concept. Whereas inductivist accounts can appeal to the fact that it is only doorknobs that support the hypotheses by means of which the content of a concept is learned, hypotheses such as "if it hangs on a door, and if it is of such-and-such a shape, then it's a doorknob". Fodor requires a triggering account, because it is the sole alternative to inductive accounts, which as we've seen preclude outright the possibility of meeting constraint (a). Stainton and Viger formulate four ways in which Fodor might try to flesh out his account of concept acquisition and show that each of these ways fails to satisfy at least one of Fodor's constraints. Their conclusion is "not that [they] are insufficiently inventive, but that Fodor has placed too many constraints on himself."[17] Fleshing out an account of concept

[15] Robert J. Stainton and Christopher Viger. "Review Essay", page.141.
[16] Fodor, J. Concepts, pg.127.
[17] Robert J. Stainton and Christopher Viger. "Review Essay", page.144.

acquisition using these constraints as guidelines is not a simple task. For the purposes of discovering what the properties are which informational semantics discusses, I will attempt to provide an explanation of how Fodor may flesh out his theory.

1.6 An explanation of concept acquisition:

The challenging aspect about fleshing out Fodor's acquisition story is that it requires explaining how our concepts come to resonate to a single property (e.g. *doorknobhood*), without claiming that it is inferred using any other concepts (e.g. concepts of doorknob features). The reason for this is that, as we have seen, inference is computation for Fodor, and computation is the manipulation of mental representations. But if inferences involve the tokening of concepts, and if location, shape, texture (among other things) are properties from which we infer the presence of a doorknob, then quite contrary to Fodor's atomist leanings, one cannot have the concept DOORKNOB without having the concepts LOCATED ON A DOOR and BEING GRASPABLE, and so on. But how can the complex property of *being x* be locked onto, if not by inferring it from its sub-properties?

If property x is a grouping of properties <x1, x2, x3 ... xn> then the grasping of x requires mechanisms by which we grasp <x1, x2, x3 ... xn>. Lets take a simpler example than *doorknobhood*, for instance, *squarehood,* and consider how we can lock onto it. Presumably, we cannot infer it from the sub-properties such as having four lines that are the same length and the property that the lines form a closed polygon. To do so would require having the concept of LINE, POLYGON, CLOSED, SAME, LENGTH, and FOUR. Rather, what needs to be the case is that we have mechanisms which detect the

edges of a square. The mechanisms for edge-detection are all that is required to lock us onto the sub-properties of a square. Upon being locked to the sub-properties, via these mechanisms of perception, we get locked to the property of having those sub-properties. The properties of *being a square*, or *being a doorknob*, or *being a giraffe*, are all supra-properties which are the properties of having a set of simple properties such as having these sorts of edges, these sorts of colours, etc.

The only real problem that this account has is with Viger and Stainton's constraint (b), according to which the theory must distinguish experience of a property from tokening of a concept. It seems that we token a concept, rather than merely experiencing a property, only in cases in which we are conscious. We experience the colour red thousands of times in a day, but not always do we token the concept RED in response. If Fodor wants to meet constraint (b) it seems that he needs a theory of consciousness, however since he does not offer one in the book at hand, I will simply ignore constraint (b).

1.7 Return to the structure of concepts

We began this chapter by noting that Fodor's RTM construes thinking as computation over symbols. Computation moreover demands that the symbols that are subsumed in computational processes have both a syntax and a semantics. The syntactic element of a symbol is the mental object or MR, while the semantic element is the interpretation, or value assigned to the symbol. Informational semantics is a theory which tells us how representations get their interpretation, by specifying what it is that they represent. It was suggested, in section 1.3, that the account of informational semantics that

Fodor offers demands that properties need to figure in the structure of concepts, if the formulation is properly rewritten. Afterwards, we considered the various types of concepts that informational atomism can treat and noticed that, in each case, the mental representation belonging to a concept is triggered by a single supra-property. The only exception is concepts of natural kinds *as such*, which are theory-mediated, and hence cannot be treated informationally. The question still remains as to how it is that the structure of concepts should be revised so that properties can be incorporated into that structure.

Given the fact that concepts on Fodor's model are triggered by supra-properties, I think the best candidate for a proper revision would render concepts as ordered pairs that are constituted by a MR and a value, which is a supra-property. Adopting this view does however have the following problematic consequence: If informational semantics naturalizes intentionality by reducing it to a nomological relationship between a mental representation and a supra-property, then we no longer have access to anything except appearances.

What informational semantics offers is an account of meaning, but it does not offer an account of reference, in the sense of denotation of an object. If this analysis is correct, then our thoughts quantify over mere sets of appearances rather than objects, because the value that is assigned to our MRs is not an object. But, intuitively speaking, when we claim that "there are two cats on the sofa" what we are claiming is not that there are two appearances of cats on the appearance of a sofa, but two actual cats on the actual sofa. What Fodor's RTM requires if it is to be true to our intuitions is a denotational semantics to supplement his informational semantics.

Prior to his 1994 book, *The Elm and the Expert*, Fodor had advocated the view that there are two theories of content, a theory of narrow content and a theory of broad content. The point in having such a split semantics was that it allows for the possibility of differentiating between the (narrow) satisfaction-conditions for being in a certain mental state and the (broad) satisfaction-conditions for the truth of a mental state (e.g. a belief). Broad contents are given by correlations between mental representations and things in the world. As such, the satisfaction conditions for the truth of "APPLES ARE RED" is given by the link between APPLE and apples and between RED and red. Narrow contents are given by the connections between mental representations and the mechanisms of detection. As such, the satisfaction conditions for being in the mental state of believing that "APPLES ARE RED" are given by the connection between the mental representations and the triggering of the appropriate detection mechanisms.

This reading of Fodor's account of broad and narrow content is sustained by the fact that, for Fodor, narrow content is the content that I can share with a brain in a vat. Fodor's claim is that "being in a vat does not ... affect the narrow contents of one's thoughts", however "it *may* affect the *broad* content of one's thoughts; it may, for example, affect their truth-conditions".[18] Let us imagine that I am standing in a field with horses, while the brain is in the vat, in a laboratory, and being fiddled with by neuroscientists. If the brain in the vat is properly stimulated it may produce the belief "I am seeing a horse", just as I produce the same belief if my perceptual mechanisms are stimulated by actually detecting the properties of a horse. The truth-conditions of the belief "I'm seeing a horse", however, are different in the two cases. The belief is true in my case, but not in the case of

[18] Fodor, J. *Psychosemantics*, pg.52.

the brain in the vat. The brain in the vat analogy hence can function as a test to determine whether informational semantics provides the truth-functional or broad content of a mental state, and it shows that it cannot. Fodor's formulation of informational semantics, as we've seen, tries to conflate the two notions of content unsuccessfully by not differentiating between the property instance that actually triggers our mechanisms of perception and what instantiates the property.

If the detection of a property instance only gives me the narrow (or meaning-constitutive) content, then the broad (or truth-functional) content of my beliefs must be provided by the further connection between the appearance property and an actual object. In chapter seven of Concepts, Fodor provides an instructive case for how it is that the broad content of beliefs is achieved. He claims,

> Male sticklebacks get locked to *conspecific rivalhood* via not much more than an innate ability to detect red spots. To do so, they exploit a certain (actually rather fragile) ecological regularity: there's normally nothing around that wears a red spot except conspecific rivals. This is nomologically necessary (anyhow, it's counterfactually supporting) in the stickleback's ecology, and nomological necessity is transitive. So sticklebacks end up locked to *conspecific rivalhood* via one of its reliable appearances.[19]

The meaning of the concept CONSPECIFIC RIVAL is given, if informational semantics is correct, by the nomological relationship between the detection of red spots and the tokening of the MR. On the other hand, there is a nomological connection between the appearance of red spots and the presence of a conspecific rival. Though the stickleback's concept only means the property red spot, this property instance itself gets it indirectly

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[19] Fodor, J. *Concepts*, pg.158.

locked onto the object, namely the conspecific rival. The transitivity of nomological necessity is thereby what ensures the connection between CONSPECIFIC RIVAL and conspecific rivals.[20] The story is instructive insofar as it offers a way in which an organism's concepts can have both a meaning and a denotation. If a representation R is nomologically connected to a property instance P, and the property instance itself is nomologically connected to an object O, then R is nomologically connected to O.

In *Concepts* Fodor postulates that the meaning of a concept is an ordered pair consisting of a MR and an object. Given the constraints we have observed, this cannot be the case because what our concept is nomologically connected to is an appearance property instance which triggers it. However this does not provide an explanation of the broad content. The broad content of our thoughts can however be explained by the *indirect* connection between our MRs and objects. The structure of a concept can be described as follows:

The narrow content (informational meaning) of our concept is given by:
R ←→ P

The broad content (actual reference) of our concept is given by:
R ←→ P ←→ O and hence R ←→ O

In the second and third chapters I will examine Fodor's proposal for dealing with two problems in the philosophy of language, namely the Frege cases and the Putnam cases. I will suggest, in contradistinction to Fodor, that both of these types of problems involve situations in which the transitivity of nomological necessity breaks down.

[20] Fodor, J. *Concepts*, pg.159.

Chapter 2: The Frege Cases

> Now, the status of conceptual atomism depends, rather directly, on whether coreference implies synonymy. For, if it doesn't, and if it is inferential role that makes the difference between content and reference, then every concept must have an inferential role. But it's also common ground that you need more than one concept to draw an inference, so if IRS is true, conceptual atomism isn't.[21]

The arguments in this chapter are intended to show that the Frege cases form a counterexample to the above quotation. They do so because Frege cases are precisely cases where two concepts with different contents (Hesperus, Phosphorus) have the same reference (Venus). Fodor's solution in the text is to claim that, in such cases it is the difference in functional role which differentiates the concepts, not a difference in contents. This solution is a non-starter because it concedes Frege cases to the functional role semanticist. In what follows I will present the dilemma raised by Frege cases and Fodor's solution to them, and I will argue against its plausibility. Afterwards, I will present a view of how Frege cases ought to be treated that is more suitable, namely one that hinges on the identification of Modes Of Presentation with supra-properties of objects.

2.1 What Frege cases are

As it has been abundantly clear in philosophy of language literature since Frege's "On Sense and Reference", the information that an expression or symbol carries is not

[21] Fodor, J. *Concepts*. Pg. 14.

exhausted by the object that it designates, nor by the formal properties that distinguish it as that symbol. Frege's demonstration of this fact can be summarized as follows. What is it about the terms "Hesperus" and "Phosphorus" that makes it surprising and informative to discover that they refer to the same object? At the purely formal or syntactic level, there obviously is no identity between the expression "Hesperus" and the expression "Phosphorus", as they are different terms. At the level of reference, the referent of both expressions is the same object (Venus), so it cannot be the identity of the terms' referents that is surprising or informative, because Venus = Venus is tautological. Hence, there must be something besides the formal and referential properties of the term, something which Frege calls "cognitive significance". The cognitive significance of a term lies in the way in which it picks out the particular object to which it refers, or as Frege calls it, the Mode of Presentation of the referent (MOP).[22]

Frege's argument has the following implication : Any purely denotational account which identifies meaning with reference will have to also account for cognitive significance. Frege's strategy in "On Sense and Reference" was to postulate a third realm, which mediates between the realm of reference and the realm of mental phenomena. This realm served as the locus wherein MOPs reside. The reason for Frege's postulation of the alleged third realm lies in the fact that he does not want MOPs to be malleable in the way that mental images and ideas tend to be. Frege believes that, if MOPs were psychological phenomena, they would become relative to the person who possess them, and they would also be relative to the time at which an individual possesses them, since people tend to

[22] Frege, G. "Ueber Sinn und Bedeutung". Pg. 45.

forget and discover ideas.[23] Since the semantics of Fodor's concepts is exhausted by the link between the mind and the world, i.e. between tokens of mental particulars and instantiations of properties, Fodor cannot postulate the realm of senses.

2.2 Fodor's Proposed solution:

In contradistinction to Frege's move, Fodor's strategy in *Concepts* is to claim that the MOPs which play the role of bearers of cognitive significance in the Fregean architecture can be identified with the mental representations themselves which are the mental implementations of the meaning-constitutive nomic relata. Frege argues in "On Sense and Reference" that, "a difference can arise [within an informative identity statement] only if the difference between the signs corresponds to a difference in the mode of presentation of that which is designated."[24] It seems that Fodor's identity (between sign and MOP) is a good candidate for a correspondence relation, so Fodor's identification of sign and MOP does not run afoul of Frege's constraint. Given this setup, Fodor introduces his own solution to the Frege cases. Fodor's argument, if draw from various parts of the first chapter, runs as follows:

1. The function of MOPs is to individuate concepts.
2. MOPs can individuate concepts only if there is a way to ensure that to each concept there is only one MOP.
3. The identification of MOPs with senses fails to satisfy 2 *because* there is more than one way to grasp anything non-mental.
4. Given 3, satisfying 2 requires that MOPs be identified with the mental implementation of concepts.
5. If MOPs are Mental Representations, then their role is purely syntactic/causal.

[23] Frege, G. "Ueber Sinn und Bedeutung". Pg. 57.
[24] Frege, G. "Ueber Sinn und Bedeutung". Pg. 57.

6. Mental particulars, in virtue of having a causal role can be individuated by that role.

Therefore,

7. What individuates concepts with different MOPs but the same reference is their causal role.[25]

This argument is designed to do two things. The first of these is to save Frege's architecture, and the second is to use that architecture in order to offer a solution to the problem of co-referential concepts. One reason why Frege dismisses the possibility that the difference in signs may be sufficient for a difference in MOPs is supposedly because Frege is considering the linguistic notion of sign, a notion which assigns a referent to a sign in a merely conventional way. However, the signs (mental representations) which constitute the LOT, are not mere signs in the Fregean sense, since their semantic value is not conventionally imparted, but rather nomically determined. As such, since the nomic connection between the relata of a meaningful representation is a way of picking out the referent, it turns out that the physical differentiation of the signs in the Language Of Thought meets the demands which had led Frege to posit MOPs in the first place. For this reason, Fodor is warranted in his claim that MOPs can be identified with mental representations.

There is also another consequence to Fodor's argument for the revision of MOPs. On the revised picture, since a concept is made up of a mental representation and a referent, and MOPs are mental representations, then there is only one MOP for every concept. The consequence of making MOPs and concepts correspond one to one is the strongest point Fodor has in favour of dispensing with the realm of senses and identifying MOPs with mental representations. If MOPs are not mental, Fodor argues, then nothing would prevent

a MOP from being grasped in more than one way. However, that would defeat the purpose of postulating MOPs in the first place, Fodor claims, because "that's what MOPs are for".[26] As such, Fodor takes the postulation of MOPs to be a means of individuating concepts. If Fodor is right in suggesting that the purpose of MOPs is solely to individuate concepts, then the identification of MOPs with mental representations is warranted, since it ensures that to each concept corresponds a single MOP. In the following section I will argue that, contrary to Fodor's claims, there are grounds to suppose that the individuation of coreferential concepts is not the sole role of MOPs, but rather that there are other roles as well. Moreover, I will also show that Fodor's solution to Frege cases is ill-conceived because it fails to take into account those other roles.

2.3 Problems with Fodor's solution.

Problem 1: Argument from Fictional Worlds

As we have seen, Fodor's argument relies on the premise that the function of MOPs is to individuate concepts. This premise is what holds together Fodor's argument, since it plays a role in steps 2-5, namely because it is on the basis of this premise that Fodor claims that MOPs cannot be senses but rather have to be mental representations. If MOPs had other functions beside concept individuation, then the possibility of refuting the identification of MOPs with senses in favour of the identification of MOPs with Mental Representations would hinge on whether Mental Representations could fulfill those other

[25] This argument is drawn from pages 16 through 20 of *Concepts*.
[26] Fodor, J. *Concepts*. Pg. 17.

functions. It would be detrimental to Fodor's argument, for example, if MOPs turned out to have other functions and if those other functions were semantic, rather than syntactic. What would be detrimental about such an outcome is that it would obstruct step 4 in Fodor's argument, namely the step which assigns MOPs a purely syntactic status.

Frege, in his essay "On Sense and Reference" discusses the problem posed by the proper name term "Odysseus" in Homer's Illiad. The term Odysseus has no reference to anyone by that name in our world, but only within the context of the book. What Frege says regarding the term "Odysseus" is that it has no reference, yet nevertheless it is not meaningless, because it has a sense.[27] What Frege also means, given the identification of senses and MOPs, is that there is a way of grasping the referent, or in his own words, we act *as though* there is a referent. On a less than controvertible reading then, the non-referring terms that we find in fictional works are meaningful, yet this is so solely in virtue of the fact that there is a way of grasping the referent, were it to exist. So terms, for Frege, are meaningful insofar as they have MOPs associated with them. Hence, for Frege, MOPs are meaning-constitutive. This, accordingly, is another role of MOPs, and since it is semantic rather than syntactic, it blocks the way to the 4th premise of Fodor's argument.

What the argument from fictional worlds shows is that Fregean MOPs are something different from Fodorian MOPs. The former have semantic roles, the latter are entirely syntactic. As such, Fodor's solution of identifying MOPs with mental representations is unwarranted. But, it may be claimed that Fodor's argument still manages to defeat Frege's identification of MOPs with senses. Regardless of premise 4, if premise 3 goes through then MOPs cannot be identified with senses. Fodor states it this way:

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[27] Frege, G. "On Sense and Reference". Pg. 50.

> I think that if MOPs can individuate concepts and referents can't, that must be because MOPs are mental objects and referents aren't. Mental objects are ipso facto available to be proximal causes of mental processes; and it's plausible that at least some mental objects are distinguished by the kinds of mental processes that they cause; i.e. they are functionally distinguished. Then it's hardly surprising that that there is only one way a mind can entertain each MOP: since, on this ontological assumption, functionally equivalent MOPs are ipso facto identical, the question 'Which MOP are you entertaining?' and the question 'Which functional state is your mind in when you entertain it?' are required to get the same answer.[28]

This argument is not a straightforward refutation of MOPs as extra-mental entities. The quoted passage only presents an alternative to the conception of MOPs as senses, and shows that the alternative conception of MOPs *is* capable of individuating concepts. In order for the argument to refute the notion that MOPs are senses, Fodor would have to prove that senses cannot individuate concepts, and such a proof is not offered in the text. Instead, what we get in the text is what some philosophers have called "an argument from lack of imagination", namely one of the form "I cannot conceive of how senses might be able to individuate concepts, therefore they can't". In what follows, I will try to provide some arguments against Fodor's identification of MOPs with Mental Representations, on the grounds that it is inconsistent with his other commitments.

Problem 2: Arguments From Inconsistency

A) Explanatory Inconsistency

[28] Fodor, J. *Concepts*. Pg. 19.

How does Fodor's solution of identifying MOPs with Mental Representations fare in comparison with Frege's solution? Fodor's account, *prima facie,* seems to fly in the face of his other commitments. If MOPs are syntactic/physical features of the brain that are functionally individuated by "what happens when you entertain them", then only the following sort of explanations of Frege cases become available : The difference between thinking about Superman and thinking about Clark Kent is to be accounted for by the difference in syntax of the two symbols. Since the referent is the same, the referent can't make the difference, claims Fodor, so we are in a sense stuck with differences in syntax. The consequence of this approach, as it has been explained by Murat Aydede, is that we no longer get an intentional explanation of the behaviour of the person who entertains the thoughts. More specifically, the state of believing that "Superman ran westward" and the state of believing that "Clark Kent ran westward" cannot be differentiated on the basis of content, and so it cannot be diagnosed by an intentional psychology.[29] This is not a very appealing outcome, since, as I mentioned in the first chapter, the RTM that Fodor has been re-working over the past three decades has always had as one of its main goals to offer a picture of the mind which is in tune with the pursuit of intentional psychology. This is one bullet that Fodor's solution to Frege cases must bite.

B) Methodological Inconsistency

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[29] Aydede, M. "Fodor on Concepts and Frege Puzzles", pg. 291.

Another problem is the lack of uniformity in Fodor's individuation of concepts. As we read in the above quotation, Fodor claims that "it's plausible that at least some mental objects are distinguished by the kinds of mental processes that they cause". This statement is hardly controvertible, after all, as Jaegwon Kim states the matter in *Mind In A Physical World*, "for any phenomenon to have an explanatory role, its presence or absence in a given situation must make a difference- *a causal difference.*"[30] The question is not, however, whether mental objects can be distinguished by their causal/functional roles, since patently they can be. The question, rather, is why Fodor avoids providing a causal/functional explanation of all concepts except the troublesome coreferential ones. Fodor's individuation method has it that all concepts are distinguished by the nomological relationships ensuing between mental representations and their external correlates, except coreferential concepts. The concept DOG is what allows us to think about dogs in virtue of the nomological relationship between the tokening of the former and the presence of the latter. To say that the concept HESPERUS should be identified not in virtue of what it is to be that concept, namely a correlation between a mental particular and an external entity, but rather in virtue of what kinds of processes it causes, creates in Fodor's own terminology a "stark methodological asymmetry" between the treatment of coreferential concepts and the treatment of non-coreferential concepts. What would make such a methodological maneuver less "stark" would be if there were a reason why Frege cases should get a different treatment from other cases.

A clue to understanding this strange methodological reversal, might be found in the motivation behind Fodor's attempt to rescue the Fregean architecture from its ontological

[30] Kim, J. Mind in a Physical World. Pg. 31.

promiscuity. The motivation is simple and indubitable: Fodor has a solution to concept individuation generally, via his Informational Atomism, but IA does not fare well with Frege cases. Frege, on the other hand, *has* a solution to the co-reference problem, and the solution is MOPs, which he implemented into his theory of meaning generally. So, what Fodor needs from Frege is his MOPs, but he only needs them for a specific problem, namely resolving coreference issues. But, since Fodor does not want to be ontologically committed to Fregean senses, he identifies MOPs with the only possible thing that he can given that his concepts are 2-tuples of <mental particular, reference>, namely the mental particular. This move saves MOPs from ontological promiscuity, but only at the expense of stripping them bare of any role whatsoever, since all mental particulars have causal roles, you don't need MOPs for *that.*

To briefly state the problem I'm arriving at, MOPs are employed by Fodor to distinguish co-referential terms, but if MOPs are mental representations, then all concepts have them, and if all concepts have them, then they can't be what motivates the methodological asymmetry. The employment of the notion of MOP can only be explanatorily efficacious if it motivates the adoption of a certain methodology generally, that is, in all cases in which MOPs apply. If MOPs are features of all concepts, and they play a role in concept individuation, then they must be useful in individuating all concepts, co-referential and non-co-referential. For Frege, they do so, because he makes them ontologically autonomous. Fregean concepts have the structure <symbol, MOP, referent>. Given Frege's setup, he can say that MOPs have semantic roles, and as such, he does not need to change his methodology regardless of whether he treats coreferential concepts or non-coreferential concepts. In the case of coreferential concepts Frege claims that the

difference between HESPERUS and PHOSOPHORUS is a semantic difference, because MOPs, for Frege, are ways in which a referent reveals itself. However, for Frege MOPs also serve in individuating non-coreferential concepts, and so the concept DOG refers to dogs in virtue of dogs revealing themselves through a particular MOP, or under a certain aspect. MOPs are hence methodologically inoffensive for Frege, but not for Fodor, and the reason for this is that their individuation of both coreferential and non-coreferential concepts is always only semantic for Frege.

There is only one circumstance in which non-semantic MOPs could serve as what motivates the methodological asymmetry, and that is *if they were something that only co-referential concepts shared.* That would make MOPs into entities which require a unique methodological treatment. However, if all concepts share them, then they can not be the motivation for methodological reversal, and Fodor owes us an explanation as to why he reverses the classical order of explanation rather than keeping to his stated methodological premise.

Of course, Fodor may yet be able to get away with his current double methodology if he can argue that there is no possible way of construing MOPs without the postulation of senses. If that were the case, then Fodor would have to choose between methodological promiscuity and ontological promiscuity, and he might be better off choosing the former, given his commitment to a naturalized account of meaning. If the only things that can individuate coreferential terms, beside senses, are mental particulars, then Fodor can betray his methodological principles, in a sense, out of necessity. However, either a MOP individuates a concept via what the concept refers to, or it does so via the type of thing that it is. But, *qua* mental particular, a MOP is atomic and unstructured, so the distinction

between the mental particular DOG and the mental particular FRANK JACKSON can only have a different causal/functional role insofar as the two particulars are nomologically connected to distinct things. The difference must be semantic.

In the following section I will argue that the option of betraying his methodological principles is not available to Fodor, because there is a means of construing MOPs as semantic, and without construing them as senses.

2.4 Proposal for a new conception of MOPs

The Proposal: MOPs as properties:

What made the Frege cases solvable, for Frege, was that MOPs are ways of reaching a referent. The MOP which the term 'Hesperus' expresses is different from the MOP which the term 'Phosphorus' expresses, but they both determine the same referent. Hesperus determines the referent *as* an entity which appears at night and has such and such appearances, while Phosphorus determines the referent *as* an entity which appears in the morning and has such and such appearances. Hence, for Frege, MOPs are aspects under which a referent reveals itself. The problem with the Fregean notion of MOPs is double. First off, since Frege treats them as entities that exist in a third realm, a commitment to such a realm is ontologically suspect. Secondly, as Fodor claims, if MOPs are senses, it is hard to say what would legitimize the idea that "*there is exactly one way to grasp each MOP.*"[31] Though Fodor does not prove that there is more than one way to grasp a sense, his

[31] Fodor, J. *Concepts*. Pg. 17.

worries are at the very least valid. These two problems with the Fregean notion of MOP function as constraints that any proposed naturalized construal of MOPs needs to heed. What is needed then is a conception of MOPs which is both ontologically unpresumptuous and also legitimizes the notion that there is only one way to grasp each MOP. Given these constraints, I think that the proper move for Fodor to make is to consider that MOPs are properties of objects, and more specifically, appearance properties of objects.

Making MOPs properties gives them the same explanatory advantages that Frege's MOPs have, without the ontological baggage. It allows us to answer questions of the type "in virtue of what can we distinguish the coreferential concepts HESPERUS and PHOSPHORUS?". We can distinguish those concepts in virtue of the fact that we pick up on different sets of properties with each of those terms. Moreover, this new conception of MOPs also allows us to hold a constant methodological stance on concept identification. As such, MOPs can serve to individuate both coreferential and non-coreferential concepts. In the case of non-coreferential concepts, the concept DOG can be individuated by those things which nomologically control it, namely by the supra-property of *being a dog*. Moreover, the addition of MOPs as autonomous elements to the structure of Fodor's concepts does not take away from the nomological informational account that Fodor holds. This is because our Mental Representations are still nomologically related to the MOPs (or sets of properties of an individual) which are in turn related to the object of reference.

One rather important difference in this revised account is that the lawful connection between a mental representation and a referent is only achieved if the referent has the MOP by means of which we access it essentially. The difference between co-referential concepts

and non-coreferential concepts hinges on this fact. To give an example, water has the MOP of being clear, tasteless and liquid essentially, that is, in virtue of its underlying micro-structure, whereas someone's concept of a particular person may have her MOP of looking a certain way and speaking in a certain way inessentially, since plastic surgery can change those appearances, though she will still be the same person. In the latter case, it becomes understandable how it is that Oedipus's concept MOTHER is no longer lawfully connected to his actual mother. The mental representation that does become lawfully connected to his mother is JOCASTA. What makes co-referential concepts possible is the fact that they pick up on properties which are inessential. In the next section I will argue that this conception of properties is consistent with Fodor's account of informational semantics.

How Properties can function as MOPs:

What I suggested in the last section is that MOPs can be identified with properties, and that such an identification will solve Fodor's co-reference problem without ontological complications. I will now try to establish how it is that properties manage to do this. In particular, the solution must be formulated in such a way that it manages to avoid the inconsistencies that were brought up against Fodor's own solution, while also avoiding the Fregean excesses. What is wrong with Fodor's solution to Frege cases is that it is methodologically and explanatorily inconsistent with his typical informational semantics account of concept individuation. As we have seen, he construes the typical individuation of a concept as follows: "*A representation* R *expresses the property* P *in virtue of its being*

a law that things that are P *cause tokenings of* R *(in say some still-to-be-specified circumstances* C*).*" If the identification of MOPs with properties is to be a *bone fide* solution to Fodor's problem, it should not require any significant changes to Fodor's typical individuation of concepts.

Fortunately, the roles of properties which make them fitting candidates for being MOPs are roles which are already presupposed by Fodor's typical individuation of concepts, so no transgression against Fodor's informational semantics is incurred. The role which the property P plays in Fodor's account of informational semantics can be described as follows. Whatever entity has the property P causes the tokening of mental representation R. To illustrate, a mental representation HORSE expresses the property *being a horse* (or, *horsehood*) in virtue of its being a law that things that have the property of *being a horse* cause tokenings of HORSE. The work that the property P is doing in Fodor's account is to act as a bridge between mental representations and objects. The property is that, in virtue of which, our representations are connected to objects. In *Psychosemantics*, Fodor describes the process of representation as follows.

> 'Horse' means *horse* if 'horse' tokenings are reliably caused by tokenings of psychophysical concepts that are in turn caused by instantiations of psychophysical properties for which instantiations of *horse* are in fact causally responsible. The causal chain runs from horses in the world to horsy looks in the world to psychophysical concepts in the belief box to 'horse' in the belief box. 'Horse' means *horse* because that chain is reliable.[32]

As this passage indicates, the psychophysical properties that make up "horsy looks" are what we have direct semantic access to, via mechanisms of perception. Our concept

[32] Fodor, J. *Psychosemantics*. Pg. 122.

HORSE is tokened upon detecting these psychophysical properties, and the bundle of psychophysical properties are themselves caused by the presence of actual horses. Diagrammatically, the representation process is twofold and can be described as a transitive relation, (where R is a representation, P is a bundle of properties, and O is an object), by $R \leftrightarrow P \leftrightarrow O$.

The crucial step that Fodor fails to notice is that, though P may be nomologically related to O, it is only so related if P is an essential property of O. What the Frege cases show is that, in cases of coreference, objects can reveal themselves via more than one set of properties, and in such cases the situation looks as follows:

$R \leftrightarrow P_1 \leftrightarrow O$ (at time T_1)

$R \leftrightarrow P_2 \leftrightarrow O$ (at time T_2)

P_1 here may be the normal appearance of Oedipus's mother, and P_2 may be her appearance as Jocasta. Recent advancements in plastic surgery could have helped Sophocles make a stronger case for Oedipus's mistake, but there are no real grounds for denying the possibility of Oedipus making the mistake. Applying Fodor's informational semantics account to the Oedipus case we get:

1) The representation MOTHER expresses the property P_1 (of *being Oedipus's mother*) in virtue of its being a law that things that have the property P_1 cause tokenings of MOTHER (in say some still-to-be-specified circumstances C).

2) The representation JOCASTA expresses the property P_2 (of *being Jocasta*) in virtue of its being a law that things that have the property P_2 cause tokenings of JOCASTA (in say some still-to-be-specified circumstances C).

Fodor's problem is that he considers that if the reference of both JOCASTA and MOTHER are the same, then what must individuate the two concepts is the purely syntactic mental mepresentations. As this example shows, the properties P_1 and P_2 do just as well to individuate the concepts. What prevents Fodor from considering that properties can serve to individuate co-referential concepts is the notion that "what bestows content on mental representations is something about their causal-cum-nomological relations to the things that fall under them: for example, what bestows upon a mental representation the content *dog* is something about its tokening being caused by dogs." However, tokenings of Mental Representations are not caused directly by dogs, or cows, or samples of water, but only by the properties by which these various objects are identified. Some objects or individuals can change their superficial properties, as is the case with Oedipus's mother, or Superman, or any of the species of animals which can camouflage. These cases should not be treated as exceptions, but rather as counterexamples to any account which claims that the relation between a mental representation and an object in the world is direct. Co-reference problems, seen in this light, are prime examples of how the mediating aspect, namely the property, can fail to belong to an object essentially.

In the next chapter I will examine a problem that is closely related to the co-reference problem, namely multiple reference. Just as Frege cases show how the usual link between a mental representation, a property, and an object can fail when the object changes its appearance, the Twin-Earth cases show how it is that same link can fail when one single appearance property is instantiated in different kinds of objects.

Chapter 3: The Twin-Earth Cases

3.1 What Twin-Earth cases are

Twin-Earth cases are situations in which someone on Earth, Bob, has a twin on another possible world which is exactly like Earth, and the twin has the exact same physical characteristics and dispositions as Bob. It is convenient to call this duplicate of Bob Twin-Bob, for purposes of distinguishing them in the demonstration, though the duplicate is known on Twin-Earth as Bob. Twin-Earth and Earth are exact duplicates,

except for one detail, namely that the microstructrural properties of water on Twin-Earth are not H2O, but rather XYZ. Intuitively, the thought that "I want to drink some water" has a different meaning when entertained by Bob than it does when entertained by Twin-Bob, even though within Bob and Twin-Bob's brains there are no causal differences when each of them entertains the thought. The reason why the two thoughts have intuitively different meanings is because, one of them is about wanting to drink H2O and the other is about wanting to drink XYZ. These cases seem to show that the meanings of thoughts are determined by their reference, not by whatever is going on inside the head of the person entertaining the thought. As Hilary Putnam, the progenitor of this thought-experiment claims, such cases provide reasons to believe that "'meanings' just ain't in the head".[33]

Presumably, the point of Putnam's thought experiment is to show that, in virtue of the allegedly plausible notion that trans-world twins' WATER-thoughts mean different things, the counterfactuals that govern meaning-constitution are outside the head. It is not just whatever happens to trigger my WATER concept that makes up the extension of my concept, but rather the way that the world really is, microstructurally. Namely, in the actual world my water-thoughts are thoughts about H2O and are true, but if I were transported to Twin-Earth, then my thoughts would still be about H2O, and they would be false. It seems then, that my concepts ought to be sensitive to the essential properties (in this case, the microstructural properties) of the things they refer to, otherwise my thoughts containing those concepts will be erroneous.

In this chapter I will examine some solutions that Fodor provides for handling the Twin-Earth thought experiment. I begin with a description of Fodor's 1987 account of

[33] Putnam, H. "The Meaning of "Meaning"". Pg. 227.

error, and show that this account fails to discriminate between water on Earth and water on Twin Earth, and hence cannot handle superficially identical referents. Afterwards, I examine Fodor's 1998 treatment of Twin-Earth cases and argue that it too falls short of showing that referents distinguish between concepts whose causal roles are identical.

3.2 Fodor's 1987 asymmetric dependence account of error:

If it can be shown that informational semantics requires that only one of the referents is the actual referent, while the rest are just erroneous tokenings, then it might be possible to avoid the issue of disjunctive concepts by claiming that they are cases of error. With this in mind, I turn to Fodor's account of error now, and consider its value in dealing with the thought experiments.

In order for a theory of concepts to explain how concepts manage to properly refer to their intentional objects, it must also provide an account of how mistakes are made in this process. Without such an account, there is no way to discriminate between proper and improper function of concepts. Outside of the informational semantics framework, for example in the definitionist conceptual model, misrepresentation can be explained simply in terms of a failure to apply definitions correctly. For example, if the definition of the term "computer" is "a formal interpreted symbol manipulation device", then it would be false of me to claim that a book is a computer, because a book does not have the features mentioned in the definition of 'computer'. However, on the informational semantics model, error cannot be explained in terms of a failure to meet necessary and sufficient conditions for

concept application. This is because the relationship between a concept and its referent is wholly determined by the nomological covariance of the dyad.

Fodor's solution to the problem of misrepresentation involves the use of counterfactuals. For Fodor, misrepresentation is asymmetrically dependent on accurate representation.[34] To illustrate how this works, let us assume that someone has a concept X which reliably tracks the presence of instances of x in usual circumstances, but that this concept is erroneously tokened on some occasions by instances of y, which are mistaken for x. According to informational semantics, if y instances reliably cause the tokening of X, then such tokenings are not erroneous, since, after all, informational semantics defines reference in terms of correlations between concept tokenings and property instantiations. The problem then, is that reliable correlations are not sufficient for establishing what is a correct tokening of a concept and what is a false tokening. Fodor's solution involves adding two extra conditions on correct tokening of a concept: Using the assumptions mentioned above, the difference between an accurate and an erroneous representation of the object x is that misrepresentation relies or depends on accurate representation of x and not vice versa. The following two counterfactuals ensure proper representation:

1. If x's would not cause tokens of X, neither would y's.
2. If y's would not cause tokens of X, x's still would.[35]

These counterfactuals help in the following sort of situation: If I see a cow, far off in a field, on a dark night and I token the thought "THAT IS A HORSE", then I have made an error. Due to the sub-optimal conditions my perceptual devices picked out the wrong

[34] Fodor, J. Psychosemantics. Pg. 110.
[35] Fodor, J. Psychosemantics. Pg. 108.

shape, and I tokened the wrong concept. The mistake can be explained, using asymmetric dependency, by saying that,

1. If cows would not cause tokens of COW, neither would horses.
2. If horses would not cause tokens of COW, cows still would.

Error requires that an object which falls outside of the extension of a concept triggers that concept in virtue of the fact that objects which fall within the extension of the concept do, but not vice versa. But this is not at all what goes on in either the Twin-Earth or Single-Earth thought experiments. In both those cases, the H2O and XYZ samples both trigger the same concept in virtue of the fact that the other does and they cannot be handled by asymmetric dependence which requires asymmetry.

3.3 Fodor's solution in the 1998 account:

Fodor claims that Twin-Earth cases are to be considered as cases which involve concepts with different contents, but the same MOPs. *Pace* chapter 2, in order to assess this argument properly, we need to assume that MOPs are what Fodor claims they are in *Concepts*, namely mental representations. As well, we need to assume that contents are objects, just as he does. If we extrapolate from these notions, Fodor's argument is roughly the following:

1. Twin-Earth cases show that referents can distinguish concepts whose causal roles are the same.
2. A concept is a two-place ordered pair whose elements consist of a Mental Representation and a content.

3. The content element of a concept is its referent, and is individuated by information it carries.
4. MOPs are mental objects and are individuated by their causal/syntactic roles.

5. The reason referents can distinguish concepts whose causal roles are the same is because, while the causal roles of the concepts of both Earthlings and Twin-Earthlings are determined by identical MOPs (i.e. mental objects), the referents which those mental objects are nomologically connected to are different. [36]

What gives the argument its unity is the notion that contents and MOPs are each separately individuated. As such, Bob's concept of water is different from Twin-Bob's because, whereas Bob's concept is the ordered pair <WATER, H2O>, Twin-Bob's concept is the ordered pair <WATER, XYZ>. This sustains the intuition that meaning is not in the head, because what determines the difference in meaning of the concepts is the external natural kinds H2O and XYZ.

3.4 Problems with Fodor's solution

In what follows, I will argue that this treatment of Twin-Earth cases is not available to Fodor, and the reason it is not available is two-fold. First, the solution fails in its intended goal of satisfying the intuitions, and second, it relies on the notion that MOPs are mental particulars. This reliance precludes Twin-Earth cases from being co-solvable with Frege cases, since as we've seen in the previous chapter, in order to resolve Frege problems what is required is that MOPs be identified with properties. I will further argue that the solution to the problems of co-reference is also capable of giving a satisfying explanation of how Fodor's informational semantics can treat the issues raised by Putnam's Twin-Earth thought experiments.

a) The solution is not general

One problem with Fodor's solution is that it is overly specific to the details of the Twin-Earth thought experiment, and cannot be used generally to sustain the intuition that referents can distinguish concepts whose causal roles are the same. In order to show how it fails to do so, I will formulate a thought-experiment that is analogical to the Twin-Earth case, but which cannot be adequately handled by Fodor's solution. In the original thought-experiment, what matters is, as it has been said, that referents distinguish concepts whose causal roles are the same. But the postulation of different Earths is not itself necessary so far, and we can limit the case to one Earth, while still assuming that two types of water substances [H2O and XYZ] are nomologically possible on Earth. This move is warranted, furthermore, because the nomological (im)possibility of having an identical world with ours except insofar as water has a different microstructure is on a par with the nomological (im)possibility of a world identical with ours in which water has both H2O and XYZ as its microstructure.

In the original example there were also two identical people who had the same causal response to a sample of what each took to be water, but the samples were microstructurally distinct. The fact that there are two people is also unnecessary so far, because, given the fact that they are molecularly identical, one person's causal response to encountering the property is just as effective as two persons' causal response. The conclusion of the original experiment should still follow, if it is granted that the changes

[36] Fodor, J. Concepts. Pg. 20.

made to the example do not create a disanalogy with the intended philosophical import of the original thought experiment. Assuming that the philosophical point of the experiment is to show that referents distinguish concepts with the same causal roles, the changes we have made to the thought experiment are not substantial. So, now, there is only one person existing in a world were two superficially identical substances have distinct microstructures. According to Fodor's treatment of the original thought experiment, in the presence of each sample, the person would token a distinct concept, and these concepts each have the same MOP but what distinguishes them as concepts is that they have different contents.

The immediate problem with Fodor's solution to the revised experiment is that MOPs are supposed to be what individuates concepts, so it is impossible to have two different concepts with the same MOP. In the original thought experiment, it seemed indeed possible to have different concepts with the same MOP, but that is because they were in different heads. Given this concession, there is only one concept for water that belongs to the individual in the Single-Earth thought experiment, and the content of this concept is disjunctive. Hence, the structure of the concept, on Fodor's picture, ought to be <WATER, substance made up of H2O or substance made up of XYZ>.

As it turns out, Fodor's account cannot satisfy the intuition that is raised by Twin Earth cases, because his solution does not satisfy that intuition generally, but only when two numerically distinct, though molecularly identical, individuals are considered. Fodor's solution hinges on a technical aspect of the Twin-Earth cases, namely the idea that the concepts are different because they are in different heads. Since MOPs are inside the head

for Fodor, he cannot apply his treatment of twins to a single person faced with the same situation.

b) The solution is inconsistent with Fodor's nomological theory of content

Fodor may reply to the line of argumentation raised above that it's the difference in environments that makes the difference in content. As such, the Single-Earth thought experiment is disanalogous to the Twin-Earth thought experiment after all. The move from the one experiment to the other was motivated by the following assumption: A possible world in which there exists a substance with the same superficial properties as water on Earth and yet whose hidden essence is XYZ, is neither more nor less distant than a possible world in which that substance *and* a substance that is microstructurally identical to our water exists. As such, the intuition that referents distinguish concepts whose causal roles are the same should hold in both thought experiments. The plausibility of this assumption does not affect the original Twin-Earth intuitions however if Twin-Earth cases are purported to show that it is not only the referent that distinguishes concepts with the same causal roles, but rather the referent plus the world in which you are (e.g. whether it's an H2O world or an XYZ world). Fodor thinks that this is more along the lines of what Putnam's idea that "meaning is not in the head" refers to. Putnam's meaning externalism, according to Fodor is the view that "what you are thinking depends on what world you're in."[37] Putnam himself considers Fodor to be an externalist in this sense as well.

[37] Fodor, Jerry. *Concepts*, pg.20, footnote 14.

It is evident that the argument that was raised against treating Single-Earth concepts as disjunctive does not work for Twin-Earth concepts. The reason is that, if the MOPs are in different heads, then what each MOP individuates is the concept which a particular person has. Twin-Bob and Bob have different concepts on this picture because Twin-Bob's MOP individuates a concept which is an ordered pair of the MR WATER and the referent XYZ, while Bob's MOP individuates a concept which is an ordered pair of the MR WATER and H2O. In order to argue against Fodor's solution to Twin-Earth cases, I will show that the solution requires that a further constraint be placed on the informational semantics account, namely one which prohibits some referents from being considered as part of the extension of a concept. Such a constraint is inconsistent with Fodor's current account of content individuation.

If we consider the way content is individuated according to Fodor's informational semantics, we get:

> A representation WATER expresses the property *being water* in virtue of it's being a law that things that have the property of *being water* cause tokenings of WATER (in say some still-to-be-specified circumstances C).

The difference between the content of my thoughts and the content of my twin's thoughts depends on how 'things that have the property of *being water*' is construed. If there is no actuality constraint, and all nomologically possible things that have that property are considered, then both my WATER-concept and my twin's WATER-concept are disjunctive and hence our concepts are the same. If these things are restricted to the world/environment in which the person who has the concept lives, then the content of my WATER-concept is different from the content of my twin's WATER-concept. However, if

this latter treatment is adopted, then there is no longer a nomological relationship between my representation WATER and things which cause that representation, but rather a nomological relationship between my representation WATER and things which actually/historically cause that representation. This is evident from the initial experiment. To say that my statement "I am drinking water" is false when uttered by me on Twin-Earth requires the assumption that my concept of WATER has as its content only those things which cause it to be tokened on Earth.

There are two ways in which the actuality constraint can be formulated. First, it can be said that only those things which historically *have* caused our concepts to be tokened can be considered as constituting the content of our concepts. Fodor himself disagrees with this variety of constraint as we will see, but I will discuss it since it is pertinent to the constraint he actually endorses. Second, it can be said that only those things which do or *could* actually cause our concepts to be tokened can be considered as constituting the content of our concepts. This is the actual formulation that Fodor adopts. I will discuss each of these constraints and show that,

1. Adopting the first actuality constraint precludes Fodor from resolving an independent problem, namely of how clones can have intentional mental states.
2. There is no motivation for adopting the second actuality constraint, except insofar as it prevents disjunctive concepts from arising, and hence it is *ad hoc*.

1) In Appendix B of The Elm and the Expert, Fodor considers how informational approaches to the metaphysics of content can treat the problems that are raised by clone

duplicates. The example he considers is Donald Davidson's "Swampman" thought experiment. Fodor quotes the example from Davidson as follows:

> Suppose lightning strikes a dead tree in a swamp; I am standing nearby. My body is reduced to its elements, while entirely by coincidence (and out of different molecules) the tree is turned into my physical replica. The Swampman ... seems to recognize my friends and appears to return their greetings in English. It moves into my house and seems to write articles on radical interpretation. No one can tell the difference...[38]

The problem this example raises is the following. How can the Swampman seem to have intentional mental states, given that the Swampman has no history? Fodor's answer is that "it's intuitively plausible that he has states that are their exact ahistorical counterparts and that these states are intentional."[39] As such, there is no historical constraint on the content of the Swampman's mental states, nor to ours, because contentful mental states can be had without such a constraint. The Swampman has had no actual experiences with books, but he nevertheless has the concept BOOK. He has the concept because all that matters for having a concept with a particular content is that the Swampman's neural circuitry is wired in such a way that a mental representation BOOK is tokened when his perceptual input mechanism picks out the property of *being a book.*

At this point it may be objected that, as we've mentioned in the first chapter it's in virtue of experience with doorknobs that one acquires the concept DOORKNOB, and if experience with something is required for locking onto things of that kind, then *pace* Swampman, history is relevant. This objection can be satisfied. Though it is experience

[38] Fodor, J. The Elm and the Expert. Pg. 117.
[39] Fodor, J. The Elm and the Expert. Pg. 117.

with doorknobs that allows us to lock onto doorknobs, and thereby have the concept DOORKNOB, what the experience contributes to having the concept is that it allows for a re-wiring of the neural circuitry which connects the detection of doorknobs with tokenings of the MR DOORKNOB. Since the MRs and the circuitry are both physical/mechanical, and since the Swampman is a perfect physical duplicate of Davidson, the MRs and circuitry that Davidson had as a possessor of the concept DOORKNOB, are also had by the Swampman himself.

2) As we've seen, Fodor himself argues that the actual history of a concept is irrelevant to the content it has. However, he still claims in the very same Appendix B, that trans-world twins do not have disjunctive contents when it comes to their WATER-thoughts. The reason is that, despite the fact that history is irrelevant to the content of our concepts, only the nomologically possible things that would cause our concept WATER to be tokened count as part of the concept's content. Since XYZ does not exist in any nearby possible worlds, it is not nomologically possible, and hence it is excluded from being a disjunct within the content of our concept WATER.[40] I think that, in saying this, Fodor misses the point about the Twin-Earth thought experiment. All that the experiment is designed to show is that, *if it were possible* that a duplicate world existed in which the superficial properties of water belonged to another substance, then our concept and the concept of our twins would be different. Saying that it is not possible is not an argument against the idea that *if it were possible*, Twins and us would have disjunctive

[40] Fodor, Jerry. *The Elm and the Expert*, pg.118.

concepts of water. Nomological possibility is not a constraint on the subjunctive account of content that Fodor offers because it is ad hoc.

To show this, I will borrow an example from Jesse Prinz's *Furnishing the Mind.* Let us consider a case in which two species of butterflies were at some point in history superficially distinguishable, but due to natural selection processes came to be superficially indistinguishable at the present moment. This case is nomologically possible. Given the fact that Fodor does not accept an actual history constraint, and given the fact that the example is nomologically possible, and since Fodor has no other constraints, it follows that if we have a concept of one of the butterflies, the content of our concept is disjunctive between the one kind of butterfly and the other.

Objection:

Jesse Prinz has found this point to be a weakness in Fodor's account of error. He claims that,

> Fodor simply bites the bullet in such cases, claiming that concepts whose tokens are actually caused by members of indistinguishable kinds are disjunctive. I think this is a hard bullet to bite. We take our natural kind concepts to pick out unique natural kinds, not disjunctive sets of natural kinds. I believe that my MONARCH concept refers to one kind of butterfly even if I suspect that I am frequently duped by mimics.[41]

The explanation that Prinz favours for the essentialism that he espouses seems to be of a causal/historical nature. The difference between Fodor's account and Prinz's stems from the fact that Prinz identifies content with "those things that actually caused the first

tokenings of a concept ... not what would have caused them."[42] Hence, the causal history of any concept is fundamental to what its content is. For Fodor, on the other hand, the content is whatever would cause the tokenings of a particular concept, minus those things which can be eliminated by the asymmetric dependence clauses. Prinz claims that Fodor's account of informational semantics, due to the fact that it is purely nomological, cannot capture the essentialist intuitions that people hold.

What is the philosophical motivation for being essentialists according to Prinz? According to him, his concept MONARCH, which picks out Monarchs as well as Viceroys (in virtue of them being indistinguishable), only refers to Monarchs because they actually caused the first tokenings of the concept. As quoted above, Prinz is willing to risk the possibility of being wrong innumerable times about what causes his MONARCH concept to be tokened, rather than conceding that his concept is just not capable of distinguishing them. One question that seems to arise is whether he could tell initially, during the first tokenings of the concept, that his concept is about Monarchs. If he was wrong right then, then he's been wrong in every instance since. This seems more like a gamble than a proper philosophical argument. Essentialism comes with a price. Although it offers a way out of having to postulate disjunctive concepts, it does so by risking the possibility of being wrong with every tokening of the concept. Is that more plausible than having a concept which refers to more than one type of thing? This question is at the very least debatable.

If Prinz's arguments carry any intuitive appeal, it is because both of the examples that Prinz uses to argue against Fodor are rigged in favour of the essentialist perspective.

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[41] Jesse Prinz, *Furnishing The Mind*, pg.248.
[42] Jesse Prinz, *Furnishing The Mind*, pg.250.

Let us consider again the case of the MONARCH concept. The reason that the concept refers to Monarchs, and not Monarchs and Viceroys is because Prinz already presupposes a distinction between Monarchs and Viceroys and knows that the first instances of the concept were caused by Monarchs. More crucially however, Prinz's concept is not of a particular kind of butterfly, but rather of a *name* of a species of butterflies. This is a crucial difference. If Fodor's concept of a particular butterfly is disjunctive among Viceroys and Monarchs, that is because he does not know them *as* Viceroys and Monarchs. You can hardly hold that against Fodor, because if he knew them both by name, then he would not have a disjunctive concept MONARCH, but rather a complex concept formed from the disjunction of MONARCH and VICEROY. Of a particular butterfly, in that case, he would think "that's either a Monarch or a Viceroy". Prinz's essentialist argument is, as a result, circular or question-begging.

3.5 Problems with the notion of disjunctive concepts

So far we have established that both cross-world twins' concepts and the concepts that involve nomological connections between Mental Representations and different, but superficially identical, referents are disjunctive. However, the notion of a disjunctive concept is dubious for the following two reasons. First, it is misleading to claim that one concept picks out different *referents*, because, as we have seen in discussing the Frege cases, we never get to the referent of our concepts except via the referent's appearance properties. To claim that a concept picks out a particular referent would require that the concept picks it out in virtue of that which makes it unique. But in the case of superficially

identical referents, this option is not pursuable. Moreover, if the referent were to change its appearance, our concept would no longer co-instantiate the referent.

Second, given Fodor's rejection of the notion that the actual history of a concept is relevant in determining its content, contents become counterfactual, and the list of disjuncts becomes unrestrictedly long. Our concept would not simply mean one thing, but rather the infinitely long list of nomologically possible things that would cause our concept to be tokened. But it seems intuitively implausible to claim that our concept means an infinite number of things. Given these reasons, it is plausible to claim that our concepts do not have disjunctive contents, if a simpler explanation is available.

The simpler explanation is that the content of our concepts is the supra-property, not the actual objects which have that property. A substance that is microstructurally made up of XYZ and one that is microstructurally made up of H2O cannot form the meaning of our concept, except insofar as the meaning of our concept happens to pick both of them out. Since it is only in virtue of their superficial identity that both H2O and XYZ are both picked out by WATER, it seems plausible to argue that the superficial property is what the concept refers to directly, whereas the specific type of substance that it actually is what the concept refers to indirectly.

3.6 Alternative to the postulation of concepts with disjunctive contents:

The cases considered in this chapter, just like the Frege cases before them, can be explained by making concepts structurally tripartite and including properties as mediating

elements between the mental particulars and the referents. If MOPs are mental particulars, then they cannot explain how it is that more than one kind of object can trigger the same mental particular. If MOPs are properties however, we can say that the mental representation is lawfully connected to one property, and since more than one type of object *can have* a certain property, our concept indirectly refers to all the different kinds of things that have that property. Our concept refers to a certain property directly and only indirectly to whatever it is that instantiates that property. Disjunctive concepts can be depicted as follows:

$R \leftrightarrow P \leftrightarrow O_1$

$R \leftrightarrow P \leftrightarrow O_2$

$R \leftrightarrow P \leftrightarrow O_3$

R here may be the concept MONARCH, while P is the superficial supra-property and O_1 and O_2 are the kinds of butterflies that instantiate P.

On this picture, we can tell exactly how it is that the MOP can individuate these types of concepts. It is because we're not connecting directly to objects but rather only to a supra-property, i.e., the property of being a clear, tasteless, liquid. This property is exhibited by different kinds of substances at the superficial level. Our perceptual mechanisms lock onto the property and the mental representation WATER gets tokened, whichever kind of object happens to be instantiating that property. As such, the proposal that I have advanced permits a less mysterious explanation of how disjunction works. Rather than claiming that a single mental representation somehow picks out multiple

referents, we can simply claim that it picks out a single entity which is the supra-property property. The instantiation of this property by various objects is itself straightforward, requiring only that the object possesses the sub-properties which make up its appearance. This is how an application of Fodor's informational semantics to concepts that seem to refer to multiple referents would work.

Conclusion

In this thesis I have argued that the structure of Fodor's concepts needs to be revised for a number of reasons. The argument has followed a number of steps. In the first chapter I began by giving a brief summary of the Representational Theory of Mind which Fodor is defending and shown how concepts fit into the schema of that theory. Afterwards, I discussed the structure of Fodor's concepts, which consists of an ordered pair of elements, namely a mental representation and a content. The relationship between the content of a concept and the mental representation is one of nomological co-variation: The content of the concept is whatever causes its mental representation to be tokened. This is Fodor's informational account of concept individuation which he states as follows. "A representation R expresses the property P in virtue of its being a law that things that are P cause tokenings of R (in, say, some still-to-be-specified circumstances C)."

I argued that Fodor's account of informational semantics conflates the property P with the things which have that property, and as such allows him to falsely claim that what causes the tokening of the mental representation is an object or class of objects. I have shown that this formulation is inaccurate, because the informational account is underwritten by perceptual mechanisms of detection which pick out only properties and not objects. Afterwards I considered how the concept acquisition of different kinds of concepts works and observed that in all cases except one, the concept is acquired through the detection of phenomenological properties. The only concepts which are not acquired this way are concepts of natural kinds *as such*, and the reason that they are not is because

their acquisition always has to be theory-mediated. As such, these concepts cannot be treated by an informational semantics in any case.

Afterwards, I considered a critique of Fodor's model of concept acquisition advanced by Stainton and Viger, according to which Fodor cannot explain how experiences with something can lead to the acquisition of a concept of that thing. I provided a purely mechanical way in which concepts of complex things can be acquired while keeping within the constraints which Fodor discusses in *Concepts*. The solution is to claim that complex objects, such as doorknobs, can be thought of as supra-properties which are constituted by simpler properties. Since the simpler properties can be detected directly, according to Fodor, the supra-properties can be detected in a similar way, thereby triggering the concept.

I concluded the first chapter by arguing that, since it is properties, and not objects, that trigger mental representations, properties need to be incorporated into the structure of concepts. However properties are instantiated by objects, so objects need to be part of the structure of concepts as well. I proposed that the structure of concept should be revised so that it is tripartite, and it includes the mental representation, the property and the object that instantiates the property. Taking the cue from Fodor's description of how the male sticklebacks' concept of conspecific rival works, I suggested that our mental representation refers to a supra-property directly and only indirectly to the object which instantiates it.

In the second chapter I considered the problem raised by Frege cases for Fodor's account of concepts, and argued that Fodor's solution is inadequate. Although Fodor's solution to Frege cases is to implement Frege's notion of Modes of Presentation into his own account of concepts, the way in which he does so is problematic. By making MOPs

syntactic, Fodor undermines both his own methodological principles and the semantic importance that MOPs have within the Fregean programme. In line with the conclusions drawn from the first chapter, I argued that Fodor's treatment of co-referential concepts would be more consistent if he would equate MOPs with properties. This revision would amount to the claim that situations involving co-referential concepts are situations in which the connection between the representation and the object breaks down.

In the third chapter I presented another set of cases, namely the Twin-Earth cases, and argued that Fodor's solution to these cases does not work either. The reason it does not, is that his account cannot avoid assigning disjunctive contents to twins. However, I suggested that the notion of a disjunctive concept itself is problematic if considered as a relation between one mental representation and several referents. A more proper way of handling seemingly disjunctive concepts, it was suggested, is by once again assuming that concepts are tripartite and showing the disjunction to arise only between a supra-property and a set of objects which implement that property.

In conclusion, it is plausible that the failure to distinguish between objects and properties that is inherent in his formulation of his informational semantics account is what precludes Fodor from being able to offer a proper treatment of Frege and Twin-Earth cases. The revision to the structure of concepts formulated in the first chapter is plausibly a more efficient means of handling concepts, and also one that is in accord with Fodor's philosophical tenets.

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