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Common-Sense Rationalism about Univocal Reasoning:
Anti-Individualism and Epistemic Transparency

A dissertation submitted in partial satisfaction
of the requirements for the degree
Doctor of Philosophy in Philosophy

by

Luca Ralston Struble

2013

ABSTRACT OF THE DISSERTATION

Common-Sense Rationalism about Univocal Reasoning:
Anti-Individualism and Epistemic Transparency

by

Luca Ralston Struble

Doctor of Philosophy in Philosophy

University of California, Los Angeles, 2013

Professor C. T. Burge, Chair

Anti-individualism (externalism about mental content) is in tension with epistemic transparency. Rationality involves the ability to reliably engage in correct univocal reasoning. Mental content is epistemically transparent iff the ability to reason univocally can always *a priori* produce correct univocal reasoning and avoid equivocation.

Anti-individualism holds that relations between a thinker's mental states and environment partially individuate those mental states' contents. A consequence of anti-individualism is that the contents of one thinker's different mental states can differ from one another solely because those mental states differently relate to the environment. Such a thinker could not on *a priori* grounds alone avoid equivocating between these different contents; anti-individualism contradicts transparency.

I argue that content is epistemically translucent: in any *normal* situation, a rational thinker can always *apriori* produce correct univocal reasoning and avoid equivocation. John Campbell and Ruth Millikan advance anti-individualist views on which univocal reasoning is empirically warranted. Paul Boghossian has suggested rejecting anti-individualism because of its incompatibility with transparency. All of these positions neglect the possibility of translucent content.

Anti-individualist views advanced by Krista Lawlor and Mikkel Gerken are friendlier to transparency. But these views do not explain the warrant for univocal reasoning. They fail to distinguish the contributions made to an attitude's content by reasoning capacities from those made by the attitude's relations to the environment.

I provide such a distinction. Reason can establish that different representations have the function of having the same content. Then, equivocation is produced only by abnormal mistakes about the identities of entities in the environment. In a normal environment, a thinker's logical reasoning powers *can* on *apriori* grounds alone produce correct univocal reasoning and avoid equivocation.

Reason cannot guarantee that its contributions to a thinker's conceptual activity always match the world's contribution. Reason can only be sensitive to evidence of abnormality, and, in the absence of such evidence, produce cognitive structures that would function correctly in a normal environment. In very abnormal identity mistakes, different attitudes have such different causal relations to the environment that those causal relations overwhelm reason's contribution, and differently type the attitudes. Lacking evidence of abnormality, rational equivocation ensues.

The dissertation of Luca Ralston Struble is approved.

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2013

To my parents, Dennis and Claudia Struble,
and my wife, Amber Yaeko Hogan,
I am deeply grateful for your loving patience.

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Introduction

Précis

This dissertation concerns a tension between epistemic transparency and anti-individualism. Understanding this tension has significant consequences for how we think about the limits of a rational faculty's ability to produce conformity to the principles of reason, and the extent to which achieving that conformity is dependent on environmental factors beyond a thinker's control, and thus the extent to which reasoning well is beyond a thinker's control.

Plausibly, being rational involves having certain minimal abilities to reason logically, and to do so *apriori*. One important logical ability is the ability to reason univocally and avoid equivocation. A stronger thesis about logical reasoning abilities and mental content holds that mental content is *epistemically transparent*.¹ This is the thesis that logical reasoning abilities can *always* on *apriori* grounds produce univocal reasoning and avoid equivocation. A consequence of epistemic transparency is that equivocation is always irrational, because exercise of one's logical reasoning abilities could have prevented the equivocation.

Anti-individualism is the plausible idea that relations between many of a thinker's mental states and the thinker's environment make a constitutive difference to the reference and representational types of those mental states. As we will see, anti-individualism at the very least suggests that one thinker's different mental states can differ from one another, in both reference and representational type, solely because those mental states differ in their relations

¹ (Dummett; Boghossian, "Externalism and Inference", "The Transparency of Mental Content) are supportive of the epistemic transparency of mental content. The thesis that mental content is epistemically transparent is very close to the thesis that it is, in the terms of (Williamson, *Knowledge and Its Limits*), luminous. Williamson is a trenchant critic of the epistemic transparency of mental content, and of the idea that there are any non-trivial luminous conditions (ch. 4).

to their thinker's environment. And, a rational thinker could equivocate between them. Thus, tiggers are a distinct species from tigers, but appear and behave exactly as tiggers do. If all of the tigers in a thinker's environment were replaced by tiggers without the thinker's noticing, then it seems possible that a thinker could entertain both tiger- and tigger-thoughts, and equivocate between them.² The cases in which this anti-individualistic equivocation occurs are in fact quite abnormal and complex. The *prima facie* intuitive judgment about *some* of those cases is that such equivocation is rational. So there appears to be a contradiction between anti-individualism, on one hand, and the epistemic transparency of mental content and its consequence that equivocation is always irrational, on the other.

Philosophers have responded in many different ways to the apparent contradiction between anti-individualism and epistemic transparency. One position is that the tension between anti-individualism and epistemic transparency is so great that one or the other must be rejected outright. Ruth Millikan, for example, has advocated rejecting epistemic transparency. She believes that univocal reasoning is *apriori* only if mental content is transparent, and so concludes that univocal reasoning is always empirical.³ Contrarily, Paul Boghossian once suggested that anti-individualism would not be viable without a resolution of this tension.⁴

Other philosophers, including Stephen Schiffer, Krista Lawlor and Mikkel Gerken, have suggested that, while epistemic transparency is false, univocal reasoning can still be

² An underlined word refers to the concept expressed by the word, which is part of the representational type or content of a mental state.

³ See (Millikan, "White Queen Psychology; or, The Last Myth of the Given, *On Clear and Confused Ideas*). (Campbell, "Is Sense Transparent?") offers a view similar in some respects.

⁴ See (Boghossian, "Externalism", "Transparency").

apriori.⁵ I think that, while those views suffer from a number of related defects, their general approach is correct: although epistemic transparency is false, anti-individualism is consistent with a common-sense rationalist view of logical reasoning, according to which logical reasoning can be *apriori*.

This dissertation has two related main goals. The first is to show that the positions taken by Boghossian, Millikan, and Campbell are all too extreme. They all overestimate the degree to which anti-individualism restricts our ability to avoid equivocation *apriori*. The second goal is to present a view of the warrant for logical reasoning which sustains common-sense rationalism and explains the intuitive appeal of epistemic transparency. I will focus on the interplay between the role of reason and the role of worldly interactions in univocal thinking and reasoning. In so doing, I will uphold a principled restriction of epistemic transparency, epistemic translucency. Content is merely epistemically translucent iff a minimally rational thinker's *apriori* reasoning powers can, in any normal situation, produce reasoning that is correct with regard to sameness and difference of content.

The dissertation proceeds as follows. In this introductory chapter, I will introduce some terminological and theoretical background to the debate, explain anti-individualism briefly, and then discuss several different cases which appear to illustrate the incompatibility of anti-individualism and epistemic transparency.

The second and third chapters respectively state and criticize the positions of Boghossian and Millikan. The fourth chapter presents Disjunctivism, its motivations, and different possible arguments for Disjunctivism that appeal to the phenomenon of *apriori*

⁵ See (Schiffer; Lawlor, *Old Thoughts about New Things*; Gerken, "Conceptual Equivocation and Warrant by Reasoning").

unavoidable equivocation involving demonstratives. The fifth chapter criticizes the best of those arguments at length.

In the final chapter, I explain how anti-individualism, while incompatible with epistemic transparency, is compatible with epistemic translucency. I describe a set of reasoning structures and competences. I claim that if different thoughts are implicated in these structures and competences, then, in all but very abnormal situations, those thoughts will have the same content-relevant causal relations to the external world. Consequently, they will not be of different type because of anti-individualism. And, a thinker's *apriori* reasoning capacities can in any situation differentiate between representations involved in those structures and representations not involved in those structures. I conclude that in all but very abnormal situations, a thinker's *apriori* reasoning capacities can avoid equivocation: content is epistemically translucent. And warrant for pairing has a substantial *apriori* element, and may be entirely *apriori*. I also compare my view to those of Gerken and Lawlor. I argue that those views depend too much on our reliability in discovering identities and differences among the entities we think about. Consequently, I claim that these views are unable to explain the distinctively *apriori* character of our ability to avoid equivocation and our *apriori* warrant for univocal reasoning. I also flag areas where my picture needs development and compare it to the positions advanced by Boghossian, Millikan, and Campbell.

Background Terminology and Theory

Content

Contents, General and Occurrence-Based

In this section, I will introduce some background theory and terminology concerning thought, representation, and reasoning. Suppose that there is a species of locust, the 30-year locust. 30-year locusts hatch every 30 years. The insects devour everything, making a huge mess. Within two weeks, they lay eggs, and die. The eggs lie dormant for thirty years, at which point the process repeats.

Oscar, a normal rational human thinker, first learns about the 30-year locusts in school. He is shown a locust egg and sees pictures of locusts. He thereby acquires the natural kind concept 30-year locust. He has beliefs such as 30-year locusts are brown, 30-year locusts hatch every year, 30-year locust eggs are found in the ground, and other beliefs about the locusts' distinctive appearance, behavior, and distribution. Oscar also believes that 30-year locusts constitute a natural kind, that they have a common hidden essence, and that they may have look-alikes. All of the aforementioned beliefs partially constitute the conception Oscar then associates with 30-year locust. A concept's conception for a thinker, at a given time, is that thinker's body of mental states that, at that time, purport to distinguish the concept's referent from other entities, and represent which entity the referent is. The conception can also include perceptual representations of paradigm instances of the locusts, and indeed pictures in Oscar's textbook provide him with such perceptual representations.

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The *representational type*, or *content*, of a propositional attitude is a *proposition*, such as 30-year locusts can fly, a type of representation which can be true or false.⁶ Propositions are composed of *conceptual representations* such as 30-year locusts, can, and fly. An aspect of a particular believing, occurring at a particular time by a particular thinker, typed by fly is an *instance* of fly. So, when Oscar today believes that cup is full of water and also today believes water is potable, there are two water-instances, that aspect of the first belief that is typed by water, and that aspect of the second belief that is typed by water. It is a feature of water, and indeed of all attributive concepts, that each of its instances has the same referent, if any of its instances refer.

One important role for contents is just that they represent. As part of this role, content provides certain semantic properties for mental states with that content. Thus, propositional content normally provides truth-conditions. Sub-propositional components provide other semantic properties, such as reference, extension, or truth-functions, that, in combination with the semantic properties of other sub-propositional components, as well as the structure by which the contents constitute a proposition, determine truth-conditions.

Water can be represented in different ways. It can be referred to as water, using water. It can also be referred to by the use of H₂O or the liquid making up the oceans. These different representations all refer to water, but differ concerning which entity they represent water *as*. They respectively represent water as a natural kind with certain exemplars in the environment, as a particular chemical compound, and as a liquid found in certain places. These different ways of representing mark different perspectives on the same entity. They establish their reference to water in different ways. And they rationalize different reasoning

⁶ If we consider a crude comparison to language, an attitude's representational type is like the *meaning* of the words, not the words.

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patterns. Thus, for a thinker who represents water using water, the chemical identity of the water, that particular substance in the thinker's environment, is a worthy object of empirical investigation. For the thinker who represents water using H₂O, it is not an open question what water's chemical identity is. It is, however, an empirical question whether that substance is present in the thinker's environment. And for the thinker who represents water as the liquid in the oceans, it is an open question whether that liquid is even a natural kind.⁷

One important distinction among kinds of conceptual representations is between ability-general, freely repeatable concepts and occurrence-based conceptual representations. water is ability-general and freely repeatable; the possession of the ability to think water requires no causal relations to any particular bodies of water, rain storms, or other particular water-involving entities or events. Having a freely repeatable concept or ability requires no particular relations, causal or otherwise, between either it or its possessor and some particular entity or event. Among the conceptual representations — those representations that can be components of propositions — concepts are the ability general ones.⁸

On one view, which I believe is correct, concepts such as that bird, now, and there are importantly different from concepts like water in several ways. First, none of the former concepts have a unique referent. Applications of that bird in particular contexts have different particulars as representata — Tweety in one context, Sylvester in another. Different instances of now refer to different times. Second, the referent of an application of that bird is partially

⁷ The notion of representation-as used here follows that in Burge's *Origins of Objectivity*, introduced on pp. 34-36.

⁸ The notions of free repeatability, ability generality, and occurrence-based types follow those in Burge's "Five Theses on *De Re* States and Attitudes". Somewhat similar notions are found in Peacocke's "Demonstrative Thought and Psychological Explanation" and *Sense and Content*. In Ch. 2 of *Intentionality*, John Searle develops a somewhat similar distinction but ends up with a very different account of demonstrative content, according to which a demonstrative-instance describes its referent as what caused it.

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determined by factors specific to that application. An application of that bird relies on a singular perceptual representation of an entity, and refers to the referent of the perceptual representation. What a now-instance refers to partially depends on the time at which the instance is thought. Concepts such as that bird and now are *schematic*. A schematic concept, or schema, can be applied on different occasions, to think about different entities. The referent of an instance of a schematic concept is partially determined by contextual factors specific to the application generating the instance. The referent also depends on a general rule that specifies a function from contextual features to referent or possible referents. Spelling out precisely which features are relevant, what the rules are, and what other factors may be in play, is a large project.⁹

Now if Joshua can think *one* thought about Tweety, then he can think many. Joshua has an ability to refer to Tweety. This ability is constituted partially by the schema that bird and partially by the specific contextual factors that that bird exploits, to generate a representation-instance that refers to Tweety. This ability to refer to Tweety is thus not freely repeatable. Having that ability depends on those specific contextual factors. That particular ability to refer to Tweety in particular is *occurrence-based*, being based in part on the particular contextual relations that initially enabled reference to Tweety. Having *that* particular

⁹ See Burge, "Belief *de re*", "Five Theses"; Kaplan, "Demonstratives"; Perry, "Frege on Demonstratives", "The Problem of the Essential Indexical"; and Peacocke, *loc. cit.*. The nature of the schematic concept's contribution in any given case is a complicated matter. The meanings of words like 'I', 'here', and 'now' seem to determine relatively straightforward rules: 'I' refers to the speaker, 'here' refers to the speaker's location, 'now' refers to the time of the utterance (or occurrence, depending on one's precise view of the semantics). See, *e.g.*, "Demonstratives" pp. 500-7 for initial discussion of indexical rules, p. 546 and "Afterthoughts" p.584 for the utterance/occurrence distinction. Even with 'here' and 'now' there is a question about the scope of the referent — In 'We do things differently here.', 'here' might refer to a country, or a state, or other large area. In "It's lucky I was standing right here. If I had been a foot over, the branch would have fallen on me.", 'here' has a much a narrower referent. There is also the issue of the voicemail greeting "I am not here right now". Rules for the schematic concepts such as that bird and the meanings of phrases such as "that bird" are even more complicated. Thus, in "Demonstratives" §IX.(ii) & §XV Kaplan suggests that the referent of a demonstrative occurrence is fixed by a demonstration. In "Afterthoughts" §II, he suggests that referential intentions determine demonstrative reference.

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demonstrative ability is reliant on the particular contextual factors facilitating reference to Tweety. It is generated by a specific application of a schematic ability. Indeed, if Joshua sees Tweety on different occasions, he will acquire *different* occurrence-based demonstrative abilities, since each ability is individuated in terms of one of the particular occasions on which Tweety was seen.

There are open questions about *which* kinds of particular events or entities are such that relations to *them* are what individuate an occurrence-based ability like any of Joshua's abilities to refer to Tweety. Salient possibilities include relations to: the referent, Tweety; the particular perceptual representation referring to Tweety; and the particular use of that bird which produces the demonstrative-instance that refers to Tweety. The intentional type of an occurrence-based ability, and the instances it generates, is thus a complex matter. Part of the intentional type is the schema. Part of the type is determined by specific contextual features of the schema's application. Precisely which factors is a theoretical matter. Provisionally, I will make two assumptions. The first assumption is of univocal reference. Whatever contextual factors individuate an occurrence-based ability generated by that bird, those contextual factors, in combination with that bird, are reference-determining. The occurrence-based ability refers univocally. All actually thought instances, whenever they occur, have the same referent, if any of them refers to anything. Indeed, in any possible world, all instances of the ability that are thought in that world have the same referent if any. Whether or not different instances of one occurrence-based ability thought in different possible world have the same referent is not an issue I will leave open for now. The second assumption is that demonstrative schemas such as that bird rely on particular perceptual representations to establish reference

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to distal objects. So occurrence-based abilities based on demonstrative schema are partially individuated by particular perceptual representations.

I will refer to an occurrence-based type in terms of its schema and occurrence-based individuating factors. I will treat the occurrence-based factors as indexing the schema. So when Joshua applies that bird, given a particular experience e of Tweety, then the occurrence-based type is that bird. The word ‘concept’ has connotations of generality so I will refer to occurrence-based contents, not as ‘concepts’, but as ‘conceptual representations’.

Controversy attends the view according to which demonstrative concepts are schematic and particular conceptual demonstratives are applications of those schema. There are those who disagree — the Disjunctivists — who think that, perceptually grounded singular representations of different entities have no fundamental kind in common.¹⁰ There is no fundamental type that bird, different instances of which can refer to different entities. (Burge, “Disjunctivism and Perceptual Psychology”) powerfully criticizes such views. For the time being, I will assume that they are false. As noted above, Campbell argues for Disjunctivism from the equivocation cases and I will criticize that argument later in the dissertation (“Sense”, *Reference*).

The Basic Notion of a Representational Function

A second important aspect of content, beyond its representing, is its causal and epistemic significance. I am going to explain this second aspect in terms of the notion of a representational function, a notion which also throws light on the first aspect of content, its representing. This discussion draws heavily on Tyler Burge's development of the notion of a representational function, as found in his "Perceptual Entitlement" and *Origins of Objectivity*. A

¹⁰ See (Evans, “Understanding Demonstratives, *Varieties*; McDowell, “*De Re* Senses”, “Singular Thought and the Extent of Inner Space”; Campbell, “Is Sense Transparent?”, *Past, Space, and Self, Reference and Consciousness*)

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perception or belief is in one way¹¹ successful — representationally successful — if it is veridical, and in that way unsuccessful if it is not veridical. The belief water is liquid is representationally successful if and only if water is liquid. An intention that one eat dinner is in one way successful if the intention brings it about that one eat dinner, and unsuccessful if it does not. An inference is in one way successful if it preserves truth, or is sufficiently likely to preserve truth. So, these mental states have representational teleology. That is the beginning of what it is for a mental state to have a representational function. In these cases, the facts about representational success are not contingent. That is, it is in the nature of the belief water is liquid to be representationally successful if and only if water is liquid. Being representationally successful under those conditions is part of what it is to be the belief water is liquid (*Origins* 74).

It should perhaps be noted that some representational functions are committal while others are not. Beliefs and the other mentioned mental states are committal. Having a belief constitutes commitment to the belief's being true, and thus commitment to the world's being such as to make the belief true. The representational function of having a belief is being true. So the function is a committal one, inasmuch as its fulfillment includes successful commitment. Again, having an intention constitutes a commitment to bringing it about that the intention is true. Non-committal states include daydreams, suppositions, and

Functions have Normative Significance.

Functions are related to goods and norms. One norm for belief is being warranted. Consider the difference between a warranted belief, one that is, say, supported by perception, and an unwarranted belief, one that is, say, governed by wishful thinking. Being warranted is

¹¹ The “in one way” qualification alludes to other functions, such as biological and practical functions. This point will be discussed in a subsequent section.

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a good for the belief and the belief system, relative to the representational function of the belief and the system, and satisfies a norm relative to that function. For, a warranted belief is arrived at via a good, reliable route to truth. And being arrived at *via* a good route to truth is a standard for adequate, though not certain, fulfillment of belief's function of being true. So, the warranted belief meets one standard for the fulfillment of the representational function of the belief to be true. Being warranted is meeting a certain norm, the meeting of which is reliably adequate for the fulfillment of the representational function of being a true belief.

More generally, it is good, relative to a function, that that function be completely fulfilled. There are further derivative goods associated with a function — partial fulfillment of the function, and contributions to the fulfillment of the function. These goods coordinate with norms. A norm is a standard for adequate fulfillment of a function. So a norm for a function is met iff a certain standard for fulfillment of the function is met. And meeting a standard for fulfillment is a good for the state, relative to the state's having the function (Burge *Origins*, 310).

I here want to explain the term '*apriori*' and several phrases in which it figures, because it is in the first place warrant that is or is not *apriori*. The canonical warrants for the beliefs 2+3=5, If 3 is even, then 3 is even, and If Bob is bald, then Bob is bald are all *apriori*. *apriori* warrant is whose warranting force "is in no way constituted or enhanced by reference to or reliance on the specifics of some range of sense experiences or perceptual beliefs" (Burge "Content Preservation", 458). Perceptions and perceptual beliefs figure in the histories of all three beliefs: perception may be involved in causing the developmental processes that bloom into understanding of mathematical concepts, for example. However, one can acquire all of the beliefs via a good, reliable route to truth, where that route to truth in no way depends

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upon perception. Derivatively, an *apriori* capacity is one whose exercise can provide *apriori* warrant. Abilities to reason logically and to calculate sums are *apriori* capacities. A condition is *apriori* accessible if the operation of an *apriori* capacity is responsive to it. So, the fact that If 3 is even, then 3 is even is a conditional and not a conjunction is *apriori* accessible. I will say that a cognitive state is arrived at on *apriori* grounds alone if it is arrived at by the operation of *apriori* capacities in response to *apriori* accessible conditions. So, all three beliefs mentioned at the beginning of this paragraph can be reached on *apriori* grounds alone.

Basic Representational Functions

Uses of conceptual representations have representational goods and functions. Part of the representational good of a canonical, committal, natural-kind concept is to represent a natural kind as such. Committal uses of water and gene achieve this good while those of phlogiston and aether do not. water is a representation as of a natural kind and to that extent accurate. phlogiston is a representation as of a natural kind and to that extent inaccurate. Earlier I introduced the locution “represents as”. Representation-as is fallible. For example, jade refers to both jadeite and nephrite and arguably is a representation as of one natural kind. So jade represents jadeite and nephrite as *one* natural kind, which they are not. When we want to describe the representation-as characteristics of a representation that fails to refer, then the representation-as-of locution is necessary. Since aether does not refer to anything, there is nothing it represents as a natural kind. All we can say is that it is a representation as of a natural kind.

Uses of all of these concepts also have the functions of attributing membership in a kind to particular entities and allowing for claims to be made about the characteristics of a particular kind. It is partially in terms of the representational functions of their committal uses

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that we can specify what is common to these different concepts. They are all attributive concepts. But they cannot all be attributive concepts because all of them can be used to attribute membership in a kind. As neither phlogiston nor aether represent a kind, they cannot be used to attribute kind membership. What is the same about the four concepts is that, roughly, that some uses of each have the representational function to attribute membership in a kind. The central function of a schematic conceptual ability is to facilitate context-based reference to different particulars on different occasions, and the function of the use of an occurrence-based conceptual representation is to represent a particular by relying on specific aspects of a particular context.

Functions have Causal Significance

Different competencies in the visual system are associated with different particular visual states. At an extreme level of idealization, a certain competence produces a representation of an edge given certain photoreceptor activity only if, in normal conditions, that photoreceptor activity is caused by an edge.¹² And, certain photoreceptor activity caused by an edge will lead, via the operation of the competence, to edge-representations. This is an example of the principled relations between cognitive competences and the fulfillment of representational functions: some cognitive competences promote the fulfillment of certain representational functions. Or, a competence may, from the committal perceptual representing of continuity of edges produce a committal perceptual representing of a bounded figure. This competence promotes the fulfillment of the committal perceptual representing of a bounded figure, but it also exploits the fulfillment of the representation functions of the committal perceptual representing of continuity of edges. Many cognitive competences exploit

¹² Actually, visual state formation is answerable to a wide variety of photoreceptor activity, as well as activity of other sensory systems, action systems, and other psychological systems.

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the fulfillment of certain representation functions; the competence produces cognition whose success is promoted by the fulfillment of certain representational functions.

Similar relations between functions and competences hold at the conceptual level.

Conceptual capacities function to fulfill, or exploit the fulfillment, of conceptual representations' representational function. A capacity to think that bird-instances is associated with a capacity to think that bird instances in perceptual beliefs, and to use certain perceptual representation to identify the referent of those that bird instances. Again, a normal rational thinker has a capacity to engage in valid instances of existential generalization and universal instantiation with singular representation instances.

Arguably, certain cognitive competences — that produce logically correct reasoning, that connect a conceptualization to a particular perceptual content, that produce a particular perceptual representation given certain other perceptual representations or certain sensory input — help to *individuate* contents: part of what makes a content the content that it is that it is governed by the exercise of certain competences. Other competences — *e.g.* the competence to classify birds by hearing their birdsongs — do not individuate either the perceptual representations of the birdsongs or the natural kind concepts classifying the birds. However, the competence is still partially¹³ individuated in terms of content: the competence is a competence to believe that is a common yellowthroat if the appropriate aural representation of a bird's song¹⁴ occurs. More generally, psychological processes, such as conditioning, are

¹³ The competence is not individuated just in terms of content. The competence in question is also individuated by the fact that it produces a belief instead of a desire. Competences may be individuated by type of attitude, degree of confidence, kind of qualitative feel, or other mental properties.

¹⁴ There are different aural representations of any given sound sequence, so not just any aural representation of the appropriate song will produce the classification.

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individuated partially in terms of content. Contents are directly cognitively explanatory by being individuated of cognitive processes.

So, there are reciprocal relations between content, cognitive competences and processes, representational functions, and representational abilities. Contents help to individuate cognitive competences and processes because contents are one of the aspects of mental states to which competences and processes respond. In a representationally successful psychology, these processes and competences will contribute to the realization of the representational functions. Conversely, some cognitive competences and processes are individuated of contents and representational abilities. In particular, those cognitive competences and processes that contribute to the fulfillment of a content's function may be individuated of the content.

Logic and Reasoning

Logical Reasoning

I now want to move to consideration of the specific reasoning competences that will be at issue in this dissertation. Logically correct reasoning can be rational and produce knowledge: if Oscar knows the stuff in that cup is water and water is potable, he can rationally infer and thereby know the stuff in that cup is potable.¹⁵ The argument is valid, i.e.,

¹⁵ Whether or not it is indeed rational to infer the conclusion, and whether or not Oscar knows the conclusion, depend on many further factors. Gilbert Harman, in *Change in View*, claims that logical properties do not provide norms of reasoning and that we do not make inferences. Rather, on Harman's view, at any given time a thinker has a more or less coherent web of beliefs. The rationality of a change in belief is determined by the degree to which the change would increase or decrease coherence in the belief-web. I doubt that Harman is correct about the psychology. I suspect that he is reading an idealized holistic epistemology back into psychology. Beliefs can change subconsciously or unconsciously and *that change may* be driven by the coherence considerations highlighted by Harman. However, we also change our beliefs through conscious reasoning. Conscious reasoning is severely constrained by limits on working memory, attention, and the processes that can be carried out on contents in working memory. It is hard to see how the coherence of an entire belief-web could be surveyed in conscious reasoning. On the other hand, reasoning from a few premises to a conclusion is precisely the sort of process that could occur consciously, relying on working memory. It is likely that subconsciously generated considerations of coherence can more or less explicitly impinge on conscious reasoning. Such impingement

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truth-preserving in virtue of logical form. Inferring the conclusion is rational in part because the argument is valid. Now, Oscar has abilities to reliably reason in logically correct ways.

The inferring is rational partially because those reliable abilities helped to produce the inferring.¹⁶ Oscar did not just happen to draw a valid inference. Rather, due to the operation of those abilities, Oscar drew the inference in part because the inference is valid.

As just noted, *part* of the explanation of the rationality of inferring the argument's conclusion is that the argument is valid. This is not a complete explanation, however. A valid argument must have either false premises or a true conclusion, but the validity tells in favor of neither disjunct. So whether or not it is rational for a thinker to believe the stuff in that cup is potable depends on whether there is better evidence to reject one of the premises or accept the conclusion, and hence on all of the evidence Oscar has about the potability of the stuff in that cup, whether it is water, and whether water is potable. Thus, if Oscar were to see five people drink from the cup, and each subsequently collapse, then Oscar would have some evidence for drinking the stuff in that cup causes people to collapse and hence against the stuff in that cup is potable. Then, the rationality of believing the stuff in that cup is potable would depend on the comparative strength of evidence for the premises of the argument above and the evidence for concluding drinking the stuff in that cup causes people to collapse. So, while Oscar's logical reasoning abilities play a role in explanations of Oscar's drawing the inference and his rationality in doing so, those explanations have other elements. Oscar's logical reasoning abilities play a specific role: they produce *acceptance of the argument*. Acceptance of the

coheres with the qualifications in the text concerning the relative weights of evidence in favor of the premises and against the conclusion.

Also, even if Harman is correct that rational change in belief is a coherence-maximizing process, it seems almost certain that logical correctness is a fundamental element of coherence. If that is correct, then, even if thinkers do not make inferences, they are still rationally responsive to logical properties.

¹⁶ Some logical reasoning abilities may have a stronger connection to success than reliability.

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argument puts Oscar in a position to rationally infer the conclusion, given that it is more rational to believe the premises and the conclusion than to reject the conclusion and one of the premises. And it puts Oscar in a position to reject one of the premises, given that doing so is more rational than believing the conclusion. More generally, when Oscar accepts an argument and reasons rationally, his reasoning will be correctly reflect the validity of the argument. When Oscar accepts an argument, I will also say that the argument operates as valid, or just that it is operative.

Guaranteed Corepresentation is Rationally Important

As I earlier noted, all instances of water are guaranteed to represent the same entity if they represent anything. All attributive concepts are like this: if any instance of an attributive concept represents x , then all of its instances do. This guaranteed corepresentation is rationally very important. The validity of almost every logical argument, and indeed the truth-preserving character of almost every inductive or abductive argument, depends in part on the guaranteed corepresentation¹⁷ of different representation-instances figuring in the argument.

Now, when Oscar rationally accepts the valid argument

there is water in that cup
water is potable
∴ something is in that cup and potable

Multiple competences contribute to this acceptance, including his competences with something and and. A logical reasoning competence *pairs* representation-instances when the competence treats the representations as of the same type, in its interaction with other

¹⁷ Guaranteed representation needs to be understood precisely. First, two representations are logically guaranteed to corepresent iff it is a matter of logic that they represent the same entity *if* either represents any entity. Second, the corepresentation is required, relative to a given situation. Thus, the occurrences of the tallest man right now in the argument the tallest man right now is happy. the tallest man right now is bald ∴ someone is happy and bald are guaranteed to corepresent. In different situations, different men are then the tallest. However, in a given situation, there either is a tallest man in that situation, or not. If so, both occurrences denote that man; if not, neither occurrence denotes anything.

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reasoning competences. So, pairing the water-instance in the first premise with the water-instance in the second premise is a contributing but not sole cause of rational acceptance of the water-argument. A rational thinker can also *divide* representation instances: this occurs whenever a thinker's reasoning competences treats the representations as not of the same logical form.

A valid argument is truth-preserving in virtue of its logical form. The truth-preserving character of some arguments is due in part to the coreference of constituents. If such an argument is valid, then that coreference is in virtue of logical form. It is a further question what the logical forms are, in virtue of which representation-instances can corefer. Intuitively and roughly, one way for different instances to corefer in virtue of logical form is for them to be instances of "the same representation". One constraint on this sense of sameness of representation is that, whenever two representation instances occur in the same argument and are instances of the same representation, then they corefer. However, for different representational systems and different kinds of representations, there are different kinds of sameness of representation. In a formal language in which each symbol is stipulated to be univocal, sameness of syntactic type is one of the logical forms in virtue of which representation-instances can corefer. Different instances of the same natural kind concept corefer in virtue of logical form. In this case, the logical form is: being instances of the same concept. So, it is one thing to say that two representation-instances corefer in virtue of logical form. And, when two particular representation-instances do corefer in virtue of logical form, it is another thing to specify what in that particular case the actual logical form is, in virtue of which they corefer. I will sometimes speak of representations as coreferring in virtue of logical

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form, or “logically coreferring”, when, for dialectical or rhetorical reasons, I need to remain neutral about what the logical form is in virtue of which two representations corefer.

Valid Arguments Involving Demonstrative-Pairing

It is not just the guaranteed corepresentation of attributive concepts that is rationally significant. The guaranteed corepresentation of instances of an occurrence-based type is also very important. There are valid arguments whose validity is dependent on the fact they contain different demonstratives or indexicals of the same occurrence-based type. Here are several:

I_{me} was born in San Diego
I_{me} live in Los Angeles
∴ I_{me} was born in San Diego and now live in Los Angeles

It was warm yesterday_t
It rained yesterday_t
∴ Yesterday_t it rained and was warm

It is warm here_h
It is raining here_h
∴ It is warm and raining here_h

That animal_c is a dog
Every dog barks
∴ That animal_c barks

The following argument could be valid if all instances of that peg rely on the same perceptual memory.

That peg_m is red
That peg_m is the same shape as that hole
∴ That peg_m is red and the same shape as that hole

It might be objected that ascribing separate beliefs to the thinker is artificial, and that in fact the thinker can, directly from the memory, be warranted in believing the conclusion.

However, one can imagine a situation in which the first belief is warranted just by the memory

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but the warrant for the second belief is not. Determining whether or not the peg is the same shape as the hole may require exercise of a rotational competence. In that case, it is more plausible that the thinker would have two beliefs, each containing an instance of that peg and ascribing one or the other property to the peg. As we will shortly see, it is more contentious whether an argument of this could be based on an occurrent perception.¹⁸

And of course it is possible for one demonstrative instance to be anaphoric on another, in normal cases of which¹⁹ the anaphoric demonstrative is of the same type as the original demonstrative.

Schematicity is Compatible with Demonstrative Coreference in virtue of Logical Form

If the validity of an argument can depend on the coreference of demonstrative instances, then those demonstrative instances corefer in virtue of their logical form. This requires that the occurrence-based type of the instances guarantees their coreference. So, it must be the case that the occurrent individuating factors along with the schema jointly guarantee coreference. The examples provided all demonstrate ways in which this condition on individuation of occurrent-based types can be met. And, sameness and difference of occurrence-based type also appears *a priori* accessible. This suggests that two occurrence-based content instances corefer in virtue of logical form iff they are instances of the same

¹⁸ In "Afterthoughts", Kaplan worries about the possibility of different occurrences of a demonstrative phrase being guaranteed to corefer in virtue of logical form (588-590). Timothy Williamson raises similar worries in "Sense, Validity, and Context".

¹⁹ It may be constitutive of anaphor that the anaphoric representation is of the same type as the original representation. However, it is conceivable, though perhaps not actually possible, that an anaphoric relation could be overruled by other content-determining factors. A would-be anaphoric demonstrative could be causally linked with an object *o* other than the original representation's referent *r*. Conceivably, the would-be anaphoric demonstrative could refer to *o* instead of *r*. In that case, the anaphoric demonstrative would not be of the same occurrence-based type as the initial demonstrative. Depending on how anaphor is defined, this case may be merely a case of would-be anaphor.

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occurrence-based content. And it suggests that, for occurrence-based contents, logical form is determined by the schema applied to generate the content and the contextual factors individuating that particular occurrence-based content. Thus, we can provisionally conclude that the guaranteed corepresentation of both concepts and occurrence-based representational types is *apriori* accessible.

Conceptual Abilities Support Theories and Narratives

So, if a thinker can think one instance of a concept or occurrence-based type \underline{g} , then she can think arbitrarily many instances of \underline{g} . Those different instances are guaranteed to corepresent: either they all represent the same entity or they all represent nothing. In addition, a thinker can pair any two of them on *apriori* grounds and on *apriori* grounds divide any of them from instances of other conceptual types. These are deep facts about conceptual representational capacities. If a thinker can think about an entity at all, she can reason about that entity. Reasoning about the entity involves different thoughts that represent the object interacting with one another, and other thoughts, on the basis of their being thoughts about the same entity. One of the cognitive-*cum*-representational functions of a conceptual ability is to facilitate (1) reasoning about its referent, if it has one, and (2) the construction of a theory or narrative about the entity. This, I suggest, is why, if a thinker has a conceptual representational capacity, she can engage in rational, correct, *apriori* warranted pairing and division with the representation instances produced by the capacity. And, it means that when we think about any particular representation-instance, we may need to remember that the instance is (1) a product of a capacity that produces many other instances of that type and (2) all of those instances form a body of representations that interact on the basis of all being representations of the same entity.

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Epistemic transparency is in effect a strong claim concerning the scope of the reasoning competences that promote a conceptual representational capacity's fulfillment of its function to produce reasoning and theories or narratives about entity represented by the capacity. However, epistemic transparency is not entailed by the fact that one of a conceptual representational capacity's cognitive-*cum*-representational functions is to facilitate reasoning, theorizing, and narrating about the entity represented by the capacity. Epistemically translucent content could also contribute to the realization of this reasoning function. Indeed, I think content's epistemic translucency, not its transparency, that is part of the content's means of realizing this cognitive function.

Comments

I need to close this exposition of the notion of representational function with two brief comments. One, I earlier said that belief is successful in one way if it is true. That is because a state can have multiple functions. A belief might have a practical function, related to its ability to produce action. A belief might have a biological function, related to its ability to produce adaptive behavior. Prima facie, representational functions are distinct from practical and biological functions. Consider biological functions. A state's biological function in an organism is, roughly, that activity of the state that contributed to the reproductive success of that organism's ancestors. Conceptually, this seems distinct from being true. I will assume that this appearance is correct and that biological and representational functions are distinct.²⁰ This is compatible with the evident truth that there are believers and beliefs because having beliefs contributed to the fitness of believers. Two, some mental states, or aspects of mental states,

²⁰ (Burge, *Origins* esp. 299-303) argues that biological and representational function are distinct. (Millikan, *Language, Thought, and Other Biological Categories*) and (Dretske, "Misrepresentation") appeal to biological function in attempts to provide reductive accounts of representation.

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may not have representational functions. It is not obvious that having a qualitative feel has any representational functions.

Anti-individualism

We are now in a position to discuss anti-individualism. Anti-individualism is an important advance in understanding mental representation.²¹ We will be concerned with anti-individualism as it pertains to mental states that represent empirically accessible subject-matter in the thinker's environment.²² Concerning such states, anti-individualism holds that their representational natures constitutively depend on their non-representational relations to their subject's environment. Anti-individualism allows that such relations might be very complex.²³ I will focus on relatively straightforward relations: causal relations, particularly

²¹ (Burge, "Anti-Individualism and the Mental") first explicitly formulated anti-individualism. (Dretske, *Knowledge and the Flow of Information*; Evans, *Varieties of Reference*; Millikan, *Language*; Stalnaker, *Inquiry*) are early works that advanced *de facto* anti-individualist positions. Earlier work on causal pictures of linguistic reference, such as (Geach, "The Perils of Pauline"; Donnellan "Reference and Definite Descriptions", "Proper Names and Identifying Descriptions"; Kripke, *Naming and Necessity*) tended not to focus on issues of mental representational type. As (Burge, "Other Bodies") argued, when that earlier work did address mental representational types, as in (Putnam, "The Meaning of 'Meaning'"), it tended towards individualism. Putnam, in the Introduction to *The Twin Earth Chronicles*, acknowledged as much and accepted anti-individualism.

²² Anti-individualism might be asserted about other mental representations: mental representation of one's own mental states, as well as mathematical representation and mental representation of other subject matter knowable only *apriori* (Burge, "Postscript to 'Belief *De Re*'"). Other aspects of mental states, such as their qualitative "feel", may constitutively depend on non-representational relations (Campbell, *Reference and Consciousness*). Constitutive dependence on relations could also be asserted about, for example, biological properties, such as the property of being a heart, on the grounds that part of being a heart is having had a certain evolutionary history and playing a role in a broader biological system.

²³ Anti-individualism allows, and I believe, that an attitude's representational type can depend on factors other than that attitude's causal relations to the environment, such as its inferential relations to other attitudes. So, for example, there can be *different* natural kind concepts of the 30-year locusts. Also, the causal relations need not necessarily directly to the entity represented by the concept. Consider the concept Higgs boson. The existence of the Higgs boson, an elementary particle, was posited in the 1960s as part of an explanation of how elementary particles acquire mass. At the time of writing, Higgs bosons may have been detected in the Large Hadron Collider. Prior to this possible detection, there has been no causal relation between Higgs boson and Higgs bosons (if indeed they exist) that would explain how Higgs boson refers to the Higgs bosons. Rather, the concept Higgs boson is embedded in the Standard Model of particle physics. There *are* direct causal relations between other particle concepts and particle kinds. Higgs boson refers to Higgs bosons because of the Higgs bosons' relations to other particles which are causally related to particle concepts in the theory in

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perceptual, between the contents of conceptual mental states and the wider physical reality.²⁴ I

will illustrate the view by returning to the 30-year locust example. The cognitive resources that Oscar acquires, in learning about the 30-year locusts, causally connect to those locusts. Oscar's beliefs and perceptual representations are indirectly caused by the locusts *via* the teacher and textbooks. And, by allowing Oscar to tell that some observed entities are 30-year locusts, and that others are not, the beliefs and perceptual representations can support ongoing causal relations between 30-year locust instances and the locusts.

Anti-individualism holds that these causal relations to 30-year locusts are part of the reason that the 30-year locust instances are instances of 30-year locust, and not of some other concept. The following thought-experiment supports anti-individualism. There are insects, call them katydids, that appear and behave just like the 30-year locusts, but which differ substantially from the locusts in their genome and evolutionary history, and consequently constitute a different insect kind. Consider a situation just like the previous situation, except that, in this second situation, there were katydids wherever, in the first situation, there are 30-year locusts. Oscar's biology teacher and textbook would talk about the katydids, not the 30-year locusts. And Oscar would see a katydid egg and pictures of katydids. Then, Oscar would acquire a different concept, katydid, referring to the katydids. The best explanation for this conceptual difference is the fact that Oscar perceived katydids, not 30-year locusts, and that his textbook and teacher transmitted effects of katydids, not 30-year locusts. As a first pass,

which Higgs boson is embedded. And thinkers can think Higgs boson in the first place because of those mediated relations. ("Higgs Boson").

²⁴ (Burge, "A-I and the Mental") establishes that the representational-type of a thinker's attitude can constitutively depend on the attitudes of others in the thinker's linguistic community. There seem to be cases of equivocation due to this form of anti-individualistic type-determination. I believe that the view of warrant for equivocation presented in this paper can be modified to apply to those cases, but I have not yet carried out that modification.

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we can say that, in the first situation, whatever Oscar believes of the 30-year locusts, in the second situation he believes of the katydids. This is not quite right, because in the first situation Oscar believes the 30-year locusts are 30-year locusts, while in the second situation Oscar believes the katydids are katydids, and does not believe the katydids are 30-year locusts. So more precisely, suppose in the first situation Oscar believes ... 30-year locust ... 30 year locust Then, in the second situation Oscar instead believes ... katydid ... katydid Oscar's perceptual memories, and perceptual identification and discrimination abilities are also individualistically the same in the two situations. The obvious difference between the two situations is that Oscar's mental states and abilities are causally related to different natural kinds. Anti-individualism asserts that the representational differences in the two situations are due to these causal differences. Examples of this kind can be multiplied *ad infinitum*, the anti-individualist picture is supported by theoretical considerations, and individualism is subject to powerful criticisms.²⁵ So, I will suppose that anti-individualism is correct.

Before proceeding to discuss the incompatibility of anti-individualism and epistemic transparency, I should note that epistemic transparency is incompatible not only with anti-individualism but also other doctrines concerning environmental determinants of representational properties. In particular, a thesis somewhat weaker than anti-individualism holds simply that what a mental state *represents* can constitutively depend on its non-representational relations to their subject's environment. Now I believe that anti-individualism is correct. At certain points, however, it will be worth noting that this weaker thesis merely

²⁵ For an extensive array of examples, see (Burge, "A-I and the Mental, "Bodies", "Cartesian Error and the Objectivity of Perception", "Individualism and Psychology", "Intellectual Norms and the Foundations of Mind"). Those articles, as well as (Dretske, *Knowledge*; Evans, *Varieties*; Millikan, *Language*; Burge, "Introduction" to *Foundations of Mind*) also provide a wide variety of theoretical arguments for a wide variety of anti-individualist positions.

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about subject-matter is also incompatible with epistemic transparency. So, let us investigate

the consequences of anti-individualism and the environmental determination of reference for

univocal reasoning.

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Three Kinds of Cases

Natural Kind Cases

Successful Identification

I am now going to present a pair of cases, in the second of which there seems to be anti-individualism-induced rational equivocation.

We first consider a case of successful identification of 30-year locusts. In Oscar's twenties, he sees the 30-year locusts hatch for the first time. Because of exposure to toxic chemicals, the 30-year locusts mutate, start hatching every year, take on novel appearances, and eat more kinds of plants and tree leaves. So, Oscar goes into business as a 30-year locust exterminator. As a result, he acquires such beliefs as 30-year locusts now hatch every year and 30-year locusts eat acacia leaves. The new and old 30-year locust-instances are paired and figure in logical corepresentation reasoning. Take the valid argument

I saw 30-year locusts in school
30 year locusts now hatch every year
 \therefore The things I saw in school now hatch every year

The validity of this argument is partially dependent on the guaranteed coreference of the two 30-year locust-representations. And, Oscar correctly and rationally accepts this argument, partially because his pairing competence pairs the 30-year locust instances in the two premises. I will call this case the “stable case”.

Locust Misidentification

Now we consider a variation of this case, in which Oscar appears to equivocate between different concepts, mistakenly pairing instances of one with instances of the other. This second, *switch* case is, for Oscar, just like the original case, until just before the 30-year locusts hatch. But, in Oscar's environment, there is a second insect species, the 100-year

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katydids. Oscar's community, being only 80 years old, has had no interaction whatsoever with these katydids. Nor is there any more roundabout causal relation between Oscar's community and the katydids. The katydids look and behave just like the 30-year locusts. The katydids hatch slightly before the 30-year locusts and eat all the 30-year locust eggs, completely wiping out the 30-year locusts.

So, in his early twenties, Oscar instead encounters katydids, mistaking them for 30-year locusts; when he sees a katydid, he mistakenly thinks that is a 30-year locust. Because of exposure to toxic mutagens, the katydids start hatching every year, take on novel appearances, and eat more kinds of plants and tree leaves. Oscar goes into business as an exterminator.

Plausibly, Oscar eventually starts forming beliefs that represent the new species, as katydids. Oscar believes, of the insects *in his environment, with which he interacts*, that they hatch every year and eat acacia leaves. There is a group of insects, the katydids, which he truly believes to hatch every year, and so forth. That is, where ψ is a representation of the katydids, Oscar believes ψ hatch every year, ψ eat acacia leaves, and so forth. So, though Oscar does not realize it, there is new reference to a new species.

What concept is ? It is not 30-year locust, since all instances of *that* concept represent only the 30-year locusts. ψ is plausibly a *new* natural kind concept representing (at least) the katydids.²⁶ For any group of properties G , Oscar need not believe any description uniquely to apply to any insect kind in his environment. So ψ is not a definite description of the katydids. ψ is not a demonstrative representation, since it does not rely on particular occurrent

²⁶ And maybe the 30-year locusts. See below.

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perceptions or memories of the katydids.²⁷ And, Oscar is inclined to engage in cognition with ψ that is characteristic of purported natural kind concepts, such as believing there may be ψ look-alikes.

ψ might be katydid, which represents all and only katydids. Oscar's new concept might instead be an *amalgam* concept, representing both katydids and 30-year locusts.²⁸ There is little in my description of Oscar's psychology or his environment to favor his having one concept or the other. For current purposes it does not matter precisely which concept Oscar acquires. What will be important going forward are two properties of the new concept. First, it is distinct from 30-year locust. Second, while in the first situation Oscar comes to believe 30-year locusts now hatch every year, in the second situation Oscar instead comes to believe ψ now hatch every year. And more generally, if in the first situation Oscar came to believe ... 30-year locust ... sometime after the mutation, then in the second situation Oscar instead comes to believe ... ψ So, while I think it is an interesting question which new concept Oscar acquires, I will assume for the sake of brevity that Oscar acquires katydid.

Rational Equivocation

Knowing, as we do, the difference between the two species and the two concepts, we can correctly describe one representation-type as 30-year locust and the other representation-type as katydid. Oscar, on the other hand, is not aware of the two representation-types. He will use the phrase '30-year locust' to express his katydid-attitudes. And as I will now explain, Oscar equivocates rationally between 30-year locust and katydid.

²⁷ What about that species? I am not sure how demonstrative reference to species occurs, so I find this proposal difficult to assess. One consideration against it involves considering a different scenario, in which the 30-year locusts are entirely replaced, but by two different species. Then, Oscar would entertain in thought a representation that refers to both species. But, that species presumably would not do so.

²⁸ This possibility is raised in (Burge, "Memory and Self-Knowledge").

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Presumably Oscar retains his pre-katydid memories, their content unaltered by acquisition of the katydid-concept.²⁹ So he still believes I first learnt about 30-year locusts in school, using the 30-year locust concept acquired at school, which refers to the 30-year locusts. Now consider the argument

I saw 30-year locusts in school
katydids now hatch every year
∴ The things I saw in school now hatch every year

This argument is invalid, as 30-year locust occurs in the first premise while katydid occurs in the second. But Oscar erroneously accepts this argument. In Oscar's reasoning, the 30-year locust-instance is paired with the katydid-instance. Those instances behave in reasoning as if they were instances of the same natural kind concept. Hence Oscar equivocates between 30-year locust and katydid.

Oscar seems rational in his reasoning. His reasoning does not seem to be criticizable on rational grounds. Oscar cannot correct the equivocation on *apriori* grounds alone. Discovery of his mistake requires empirical evidence of the species switch. And Oscar's lack of that evidence is not a rational fault. Oscar does not misuse his logical reasoning competences, and they do not malfunction. There seems to be no defect in his rational abilities responsible for the illogical reasoning. Some of the competences governing certain 30-year locust- and katydid-beliefs are dissonant with the world's contribution to the representational

²⁹ (Ludlow, "Social Externalism, Self-Knowledge, and Memory"; Tye, "Externalism and Memory") argue that Oscar's 30-year locust-instances are replaced by katydid-instances. If that were so, Oscar would have lots of false beliefs about the past, e.g. I saw katydids in school, but Oscar would not equivocate between 30-year locust and katydid since there would no longer be any 30-year locust instances in his mind to equivocate with. (Gerken, 2007) persuasively argues against the view that as soon as Oscar thinks his first katydid-thought, all the 30-year locust instances are replaced by katydid-instances. So long as the replacement is piecemeal, equivocation is possible.

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type of those beliefs, resulting in error.³⁰ So epistemic transparency, and its consequence that all equivocation is irrational, are false.

Another puzzling aspect of this case deserves mention, though I will not be able to give it complete treatment in the dissertation. One instance of water represents water as one natural kind. Plausibly, two water-instances jointly represent their respective referents as the same natural kind. And plausibly this is a crucial part of the subject's perspective, when pairing different water-instances. Now, instances of different concepts do not represent their respective referents as identical with one another. So, instances of 30-year locust and katydid did not represent their respective referents as identical with one another. But, from Oscar's perspective, when he entertains I saw 30-year locusts in school and katydids now hatch every year, the represented states of affairs seem to involve the same species. That is, there seems to be a representation of the 30-year locusts and the katydids as identical. Now one might think there is nothing puzzling about this at all. Oscar believes 30-year locusts are katydids. That is why the same species seems to Oscar to figure in the states of affairs represented by 30-year locusts in school and katydids now hatch every year. However, this appeal to the identity belief does not solve the problem. Oscar equivocates between any instance of 30-year locusts and any instance of katydid. So he equivocates between the instances in 30-year locusts are katydids. That is, 30-year locusts are katydids behaves in Oscar's psychology as if it were of the form $a=a$. The question is, why do the 30-year locust and the katydid instances in the identity belief seem to represent the same entity? There is a mental state that represents the

³⁰ Examples can be constructed with many kinds of conceptual representations, including perceptually based singular representations, as well as singular representation based on repeated interaction with the same entity. (Evans, "Understanding Demonstratives", *Varieties*; Campbell, "Sense", Kaplan, "Demonstratives") contain early discussions of cases involving demonstratives in language or thought. (Donnellan, "Proper Names"; Evans, "The Causal Theory of Names"; Perry, "A Problem about Continued Belief") discuss cases involving names and memory-"files".

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identity of 30-year locusts and katydids and causes rationalizes pairing of 30-year locust

instances with katydid instances. I think that a complete description of the switch case needs to fully describe this state. Unfortunately, my dissertation does not fully do so. I think some of the material I develop to explain why content is epistemically translucent, and why the equivocation between 30-year locust and the katydid is rational and warranted, can help to answer this question. I hope to address it more fully in later work. But now we need to move on, to consider other cases of apparently rational, anti-individualist-induced equivocation.

Luciano/Guisepppe Successful Identification

The second kind of case involves file-based singular reference. I will present first a case in which Oscar successfully identifies one object with his file, and then a case in which he confuses two objects. Oscar hears of a famous tenor, Luciano Pavarotti. Oscar occasionally hears and sees Pavarotti, and so gets a minimal sense of what he looks and sounds like. So Oscar can think about Pavarotti — Oscar acquires a capacity to refer to Pavarotti. As a child, Oscar was particularly struck by Pavarotti's performance of *Nessun dorma*. Remembering this later, Oscar believes As a child, I heard Luciano sing *Nessun dorma*. But Oscar does not meet Pavarotti and overall has little interest in Pavarotti.

On a hiking trip, Oscar meets Pavarotti. He suspects it is Pavarotti, but is not sure. Pavarotti introduces himself as Pavarotti. Oscar gets to know Pavarotti, they strike up a friendship, become pen pals, Pavarotti invites Oscar to his performances when he is in town.

The new and old Luciano tokens figure in logical coreference reasoning. For example, Oscar treats as valid the argument from As a child, I heard Luciano sing *Nessun dorma* and I

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saw Luciano last night to Last night, I saw someone who, when I was a child, I heard sing

Nessun dorma.

Misidentification

The misidentification case is the same as the first case, up to Oscar's fateful hike.

Pavarotti's unknown twin Guiseppe is jealous of Luciano. He kidnaps Luciano, and pretends to be Luciano in public & performance.

On Oscar's hiking trip, he meets Guiseppe. He suspects it is Luciano, but is not sure. Guiseppe introduces himself as Luciano. Oscar gets to know Guiseppe, they strike up a friendship, become pen pals, and Guiseppe invites Oscar to his performances when he is in town. In all of this, Guiseppe-information is added to the file associated with the capacity to refer to Guiseppe.

Plausibly, Oscar now has a capacity to refer to Guiseppe. His memories, and the information, are about Guiseppe. When he thinks about whom he saw at the opera last night, he is correct. For this belief to be true, it must be true iff Guiseppe was at the opera last night, not true iff Luciano was at the opera last night. Now, all Luciano tokens refer to Luciano, not Guiseppe. So this belief is not the belief I saw Luciano at the opera last night. The belief rather involves a token of a conceptual representation referring to Guiseppe. Oscar believes I saw x at the opera last night, where x is a conceptual representation referring to Guiseppe.

Perhaps x is a demonstrative that refers to Guiseppe, exploiting Oscar's perceptual memory of last night's opera. However, Oscar has other thoughts about Guiseppe, whose reference to Guiseppe does not appear to depend on any particular perceptual encounter or encounters with Guiseppe. For example, Oscar might come to believe that Guiseppe is very generous, after Guiseppe has treated Oscar to many dinners and free opera tickets. Oscar could retain

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such a belief long after he lost the particular memories which provided evidence for the belief.

It is a further question which content it is, that figures in this belief and refers to Guiseppe. I

will refer to it as "Guiseppe". So, Oscar thinks many singular tokens referring to Guiseppe.

Some are demonstrative tokens whose reference to Guiseppe depends on particular

perceptual representations of Guiseppe. Others are the file-based representations, whose

reference to Guiseppe is abstracted from particular perceptual encounters with Guiseppe.

It should be noted that Oscar may misexpress such beliefs. He will use "Luciano" in expressing beliefs containing tokens that refer to Guiseppe. Consequently, he may also form beliefs about Guiseppe based on occurrences of the word "Luciano". Thus, when Oscar reads in the newspaper "Luciano will be performing on Tuesday at the Opera Hall", he may believe Guiseppe is coming to town. And, Oscar is not aware that he has a new file-based representation that refers to a new person.

Rational Equivocation

Presumably, Oscar's memories are unaffected by the new content-type. So Oscar can still think As a child, I heard Luciano sing Nessun dorma, his memory still containing tokens that refer to Luciano. And he can think I saw Guiseppe at the opera last night. The Luciano and Guiseppe tokens figure in logical coreference reasoning, even though they refer to distinct objects.

Oscar seems rational in his reasoning. His reasoning does not seem to be criticizable on rational grounds. Oscar cannot correct the equivocation on *apriori* grounds alone.

Discovery of his mistake requires empirical evidence of Luciano's replacement by Guiseppe.

And Oscar's lack of that evidence is not a rational fault. Oscar does not misuse his logical reasoning competences, and they do not malfunction. There seems to be no defect in his

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rational abilities responsible for the illogical reasoning. Some of the competences governing certain Guiseppe and Luciano-beliefs are dissonant with the world's contribution to the representational type of those beliefs, resulting in error. So epistemic transparency, and its consequence that all equivocation is irrational, are false. It is also a question of which mental state misrepresents the identity of Luciano and Guiseppe causes and rationalizes the pairing of Luciano and Guiseppe.³¹

Demonstrative Cases Orientation

I will now present cases in which, apparently, demonstrative tokens are coreferentially confused, *i.e.*, do not corefer but are paired. This appears to happen in extreme cases of perceptual identification failure. In cases of *radical misintegration*, the perceptual system thoroughly fails to distinguish two objects. One perceptual identification equally well identifies two objects and does not discriminate one from the other, instead treating the two as if they were one. Some demonstrative tokens founded on the mistaken identification appear to refer to one of the object, some tokens to the other. A rational thinker will pair these noncoreferring tokens and be unable to correct this error on *apriori* grounds. I will first briefly describe cases of less extreme perceptual identification failure, in which demonstratives corefer in virtue of logical form and are correctly paired. This will helpfully contrast with the coreferential confusion and the features that produce it, in the cases of extreme perceptual misidentification.

Minor Failure

³¹ As with the 30-year locust/katydid case, there is also the question of how the referents of Guiseppe and Luciano are, mistakenly, represented as identical.

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Some cases of perceptual error do not involve identification failure at all. Thus, in appropriate lighting, an object's blue coloring may appear black. Viewed from a certain perspective, or against a certain background, an object may appear to be larger or smaller than it actually is. There are also cases of minor, unpuzzling identification failure. Consider the following. Oscar sees two ropes, and his perceptual system substantially correctly identifies each and distinguishes one from the other. While the two ropes are mostly spatially separated, in one area they are tangled up with each other. So, one strand of r appears to be part of s , instead of being part of r . There is thus perceptual misrepresentation of both r and s . The strand of r is mistakenly represented as not part of r and instead as part of s . This constitutes misidentification. For r and s are identified partially in terms of their bodies' parts and surfaces. And part of r 's body is represented as instead part of s 's. So there is mistaken representation both of which body r is and also of which body s is. This misidentification error may give rise to further errors. Thus, if the strand is the only red part of either rope, then the color of each rope will be misrepresented: r as not red, s as partially red.

Suppose e is a perceptual token referring to r . Then, e mostly but not entirely correctly identifies r . A singular perceptual token can entirely successfully identify its referent. When it does, it veridically represents which body its referent is. And it bears causal relations of a distinctive kind to its referent, which it bears to nothing else. But, as the ropes example illustrates, a singular token can partially misidentify its referent and partially confuse its referent with something else. To a substantial degree, e veridically represents which body r is, but e also partially misrepresents which body r is. And, e substantially bears the distinctive kind of causal relations to r , but it also bears them to s to some small degree. The puzzling

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cases of identification error also involve perceptual confusion between two objects. But as we shall now see, there is much greater confusion in such cases.

Framing of Major Mistakes

Some cases of radical perceptual misidentification appear to be cases in which there is also coreferential confusion. These cases appear to be involve distinctive kinds of attempted perceptual identification. The structure of perceptual and conceptual representation in these kinds of cases is somewhat complicated. So, for each kind of case — I will discuss two — I will first describe a successful example of that kind of perceptual identification, and then an example of radical misidentification of that kind. After describing the cases, I will explain how they contradict epistemic transparency. I should note that the description of these cases is contentious. In particular, claims about logical form in successful perceptual identification and reference in perceptual misidentification are controversial.

Tracking

Successful Tracking

Tracking is one kind of perceptual identification whose failure may result in coreferential confusion. Suppose that a billiard ball in full view rolls around on a pool table in front of Oscar. Let us suppose, what is in any case normal, that Oscar's visual system tracks the ball. When Oscar's visual system tracks the ball over the period, visually it seems to Oscar as if there is just one ball there over that period. And this comes about because the visual system detects the motion and motion and continuity of the ball's motion. The ball which was present earlier seems to be the same thing as the ball which is present later. Or, put differently, there seems to be a ball which was present earlier and is present now. Beyond this minimal description, it is difficult to describe tracking precisely in pre-theoretic terms, and its

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theoretical description is controversial. What is difficult to describe precisely is the way in which the experience is *of* the ball's identity over time.

Thought in Successful Tracking

Oscar can think demonstrative tokens enabled by his tracking experience of the ball. Suppose that, early in his tracking experience, Oscar sees the ball to have a black dot on one side, and later sees the ball to have a red dot on the other side. Then, at the end of the tracking episode, Oscar has beliefs of the form α had a black dot and β has a red dot, where both α and β tokens rely on the experience of the tracked object.³² I will call this case the stable case. I am using variables for a reason I will explain in a moment, after introducing some terminology.

According to the Unified Description of the tracking case, instances of α and β corefer in virtue of logical form. Presumably, α is β in this case. That is, α and β are the same demonstrative type — the same occurrence-based type if the discussion in [Contents, General and Occurrence-Based](#) was correct. Since Oscar is rational, Oscar will pair the α and β instances and correctly accept the valid argument

$$\begin{array}{l} \underline{\alpha \text{ had a black dot}} \\ \underline{\beta \text{ has a red dot}} \\ \therefore \underline{\text{Something had a black dot and has a red dot}} \end{array}$$

Radically Failed Tracking

In radically failed tracking, after Oscar watches one ball, a , for some time, a is replaced by a qualitative duplicate, b , without Oscar's noticing. As Campbell notes, it is very plausible that Oscar sees and thinks about a before the switch but, after the switch, sees and thinks about b ("Sense" 281; *Reference* 129). I will call this case the switch case. I will call this

³² Oscar may also believe that body (still) has a black dot. This is not warranted directly by the earlier perception alone. Its warrant requires either auxiliary conceptual beliefs about property-persistence, or a representation in memory to the effect that the object had and retained the black dot.

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description, according to which Oscar first refers to a and then to b , the Divided Reference description.

Suppose that the switch of b for a occurs after Oscar sees the black dot, and before he sees the red dot. Then, when Oscar thinks δ has a black dot, δ^{33} refers to a . And when Oscar thinks ρ has a red dot, ρ refers to b . So, when Oscar's perceptual system fails to track the objects in Oscar's environment, $\underline{\delta}$ and $\underline{\rho}$ do not corefer, and so do not logically corefer. Now, if the Unified Description of successful integration is correct, Oscar pairs instances of $\underline{\delta}$ and $\underline{\rho}$ in radical misintegration. For Oscar pairs $\underline{\alpha}$ - and $\underline{\beta}$ -instances in the successful case and, since Oscar does not notice the switch, Oscar will reason as he would have had there been no switch. Pairing $\underline{\delta}$ and $\underline{\rho}$ is a logical error. It is equivocation. The implications of this equivocation will be drawn out after I describe a second kind of radical misintegration.

Cross-Modal Integration

Successful Cross-Modal Integration

Cross-modal integration is another kind of perceptual identification whose failure may result in coreferential confusion. The final kind of identifying experience to be discussed is intermodal identification. As with tracking, it is somewhat difficult to characterize the representational content and structure of intermodal identification. Consider a case in which Oscar simultaneously sees and feels the ball. Oscar may be aware that the ball that he sees is the ball that he feels. It may seem to Oscar that he is touching and feeling the same thing. This description is problematic, however. The words in the 'that-' clause express concepts of perception, of sight and touch. But, perceptual states do not represent themselves. So the concepts and proposition expressed by the 'that'-clause are neither the content of the

³³ Depending on one's view of demonstrative contents, $\underline{\delta}$ may or may not be $\underline{\alpha}$. I use the new schematic variable just to be clear that $\underline{\delta}$ may or may not be $\underline{\alpha}$. The same point holds for $\underline{\rho}$ and $\underline{\beta}$.

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perceptual state, nor in any obvious way a conceptual analogue of the perceptual state's content. So, this description does not provide us with the content of the perceptual state(s) characteristic of intermodal identification. Nonetheless, the misleading description is a good start. We can add some further points. One way of understanding what happens in this kind of case is that there is a singular *amodal* representation of the ball. This representation is amodal because it does not occur in any particular perceptual modality. If all perceptual representations occur in a particular perceptual modality, then this is not a perceptual representation. On the other hand, it may not be a conceptual representation. Plausibly, humans have cognitive maps of the space around them. These maps can represent unperceived space — the layout of the room behind one, for instance. These are representational entities structured like maps, and so are not propositional. They are amodal. Some intermodal identification may involve such amodal maps, as well as amodal singular representations of particular objects. In such a case, both visually and haptically identified properties can contribute to one identification of the ball. So, where properties p_1, \dots, p_m are visually detected, and properties p_{m+1}, \dots, p_n are haptically detected, one object is represented as having p_1, \dots, p_m and p_{m+1}, \dots, p_n . And representations of those properties — perhaps perceptual representations, perhaps amodal representations — are all attributively combined with one singular amodal representation.³⁴ The correctness of this theory is not obvious. Let us suppose it as part of the same-type, split-reference description of intermodal identification.

Thought in Cross-Modal Integration

Oscar can think demonstrative tokens enabled by his modally integrated experience of the ball. Suppose that, early in his tracking experience, Oscar feels the entire ball's smooth

³⁴ It is a good question whether there is one singular representation token with which all of the representations are attributively combined, or whether they combine with different tokens of the same full intentional type.

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surface and sees that it is red. Then, Oscar warrantably believes α is smooth all over and β is red, where both α and β tokens rely on the modally integrated experience of the ball. I will call this case the stable case. According to the Unified Description of modal integration, instances of α and β corefer in virtue of logical form. Presumably, α is β in this case. That is, α and β are the same demonstrative type — the same occurrence-based type if the discussion in [Contents, General and Occurrence-Based](#) was correct. Since Oscar is rational, Oscar will pair the α and β instances and correctly accept the valid argument

$$\begin{array}{l} \underline{\alpha \text{ is smooth all over}} \\ \underline{\beta \text{ is red}} \\ \therefore \underline{\text{Something is red and smooth all over}} \end{array}$$

Radical Modal Integration Failure

It should be clear what a case of radical modal integration failure is like. In such a case, Oscar holds a ball that feels like just the ball in success amodal identification, and sees a *different* ball that looks just like the ball in successful amodal identification. It is quite plausible that Oscar can think about each of the balls. When he thinks a thought such as δ is red, the perceptual representations supporting which are visual, it is plausible that Oscar thinks about, and δ refers to, the seen ball. And when Oscar thinks a thought such as ρ is heavy, which relies on haptic representations, Oscar thinks about, and ρ refers to, the touched ball. I will call this case the switch case. I will call this description, according to which Oscar first refers to a and then to b , the Divided Reference description.

Suppose that the switch of b for a occurs after Oscar sees the black dot, and before he sees the red dot. Then, when Oscar thinks δ has a black dot, δ ³⁵ refers to a . And when Oscar thinks ρ has a red dot, ρ refers to b . So, when Oscar's perceptual system fails to track the

³⁵ Depending on one's view of demonstrative contents, δ may or may not be α . I use the new schematic variable just to be clear that δ may or may not be α . The same point holds for ρ and β .

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objects in Oscar's environment, $\underline{\varrho}$ and ϱ do not corefer, and so do not logically corefer. Now, if the Unified Description of successful modal integration is correct, then Oscar pairs instances of $\underline{\varrho}$ and ϱ in radical misintegration. For Oscar pairs $\underline{\alpha}$ - and $\underline{\beta}$ -instances in the successful case and, since Oscar does not notice the switch, Oscar will reason as he would have had there been no switch. Pairing $\underline{\varrho}$ and ϱ is a logical error. It is equivocation.

In both radically failed tracking and radically failed modal integration, Oscar seems rational in his reasoning. His reasoning does not seem to be criticizable on rational grounds. Oscar cannot correct the equivocation on *apriori* grounds alone. Discovery of his mistake requires empirical evidence of the replacement of one object by another in radical mistracking and of the difference between the touched and seen objects in radical modal misintegration. Oscar's lack of such evidence is not a rational fault. Oscar does not misuse his logical reasoning competences, and they do not malfunction. There seems to be no defect in his rational abilities responsible for the illogical reasoning. Some of the competences governing certain demonstrative-beliefs are dissonant with the world's contribution to the representational type of those beliefs, resulting in error. So epistemic transparency, and its consequence that all equivocation is irrational, are false. And this case raises the question of which mental state misrepresents the identity of a and b and causes and rationalizes the pairing of ϱ and $\underline{\varrho}$.

Articulated Arguments

On the descriptions of successful tracking and in successful multimodal integration — case given above, the different demonstrative instances referring to the same entity are paired by Oscar and corefer in virtue of logical form. I will call these descriptions the Unified Descriptions. The accuracy of the Unified Descriptions is quite contentious. It is also required

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if one is to conclude that radical misintegration is a counter-example to epistemic transparency.

To demonstrate that the conclusion that radical misintegration cases are counter-examples to epistemic transparency only if the Unified Description of successful integration cases is accurate, I will describe two other arguments Oscar might entertain. In stating the arguments, "this bird" and "that bird" refer to demonstrative instances of different type. In using these phrases, I make no commitment as to what extent they are of the same type and to what extent they are not or to the accuracy or inaccuracy of the view that the type of a particular demonstrative instance is determined by a schema and an occurrence. So, consider the alternate "articulated arguments":

That bird was here
That bird is this bird
This bird is there
 \therefore Something - this bird — was here
and is there

That guitar is in my hands
That guitar is this guitar
This guitar is out of tune
 \therefore Something - this guitar — is in my
hands and out of tune

Oscar could certainly rationally ratify such arguments. For example, Oscar might see a bird fly into a bush, lose sight of the bird, and shortly thereafter see a perceptually qualitatively indistinguishable bird reappear from the bush. Then, Oscar could think that bird instances relying entirely on the perceptual memory, and this bird instances relying entirely on occurrent perception. Oscar does pair the that bird instances in the first premise with the that bird instance in the second premise, but, being rational, Oscar would *not* pair instances of that bird with instances of this bird; they would not behave in Oscar's reasoning as if they coreferred in virtue of logical form. But Oscar could have evidence that there is only one bird with that appearance in the environs, and so have reason to conclude that bird is this bird.

Now, if Oscar was mistaken, and in fact a different bird flew out of the bush, the identity *belief*

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would be false, and the first argument would be unsound. But, the first argument would still be *valid*. It would still be correct to ratify it. A similar point can be made about the multi-modal argument. Thus, Oscar may be holding a guitar while wearing sound-canceling headphones that, he believes, are connected to the same guitar. But Oscar's sound engineer may have pranked Oscar, and connected the headphones to a different guitar. Then, the second argument would be valid but unsound, and Oscar would be rational to ratify it, and would make no pairing error. Now return attention to the original stable tracking and multi-modal cases. In each case, it would not be irrational for Oscar to use demonstratives of different types — relying purely on perceptual memory or occurrent perception, and touch or hearing, respectively. In the switch cases, Oscar would then have false identity beliefs. But the arguments he infers would be *valid*, and Oscar would pair only demonstratives of the same type.

As I said, the Unified Descriptions of the successful integration cases are contentious. There are reasons for and against the Unified Descriptions. I am not going to attempt to settle that issue. For the purposes of this dissertation, I will assume that the Unified Descriptions are correct. If they were incorrect, then the radical misintegration cases would not be counter-examples to epistemic transparency. That would render some of the dissertation somewhat superfluous but it would not present any puzzle about rationality or content-fixation.

Generalized Argument

I will now present an argument that generalizes from the examples. Take a thinker who successfully pairs tokens t_1 and t_2 of the same content, whose referents are fixed causally. Take that thinker, or one who is a physical and non-relational duplicate. This thinker's particular mental states would be causally related to one another in just the way that they are

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in the original thinker's mind. Consider in particular t_3 and t_4 , which are individualistic duplicates of t_1 and t_2 . Since t_1 and t_2 are paired, so are t_3 and t_4 . Now, suppose that the duplicate thinker has different relations to a different environment than does the original thinker. In particular, suppose that t_3 is causally related, in the way that fixes reference for t_3 and t_4 , to a different entity than t_4 . Then, t_3 and t_4 refer to different entities. So, it is a mistake to pair them. Because t_3 and t_4 fail to corefer only because of their different relations to the environment, the mistaken pairing cannot be corrected *a priori*. So epistemic transparency is false. And it also seems that this mere difference in the environment does not make a difference to whether or not the thinker is rational. So we need to explain how anti-individualist induced equivocation can be rational.

I am not entirely confident that this argument is sound. However, we have seen a battery of cases that are instances of the abstract pattern identified in this argument. So, I conclude that epistemic transparency and anti-individualism are incompatible. This means that one of them is false. I think that epistemic transparency is false. In the next four chapters, I am going to discuss positions of several different philosophers who hold, in effect, that anti-individualism and epistemic transparency are so incompatible that one or the other must basically be rejected. I believe that these positions are all mistaken. Each position has distinctive flaws. Common to them, however, is their failure to seriously consider the possibility that content might be epistemically translucent. That is, they fail to seriously consider the possibility that a minimally rational thinker's *a priori* reasoning powers can, in any normal situation, produce reasoning that is correct with regard to sameness and difference of content.

Strong Incompatibilism

Orientation

Strong incompatibilism is the claim that anti-individualism and epistemic transparency are incompatible, and, further, that no minimal alterations can produce compatible principles. Strong incompatibilism requires rejection of either epistemic transparency or anti-individualism. John Campbell, in “Is Sense Transparent?” (1987) and *Reference and Consciousness* (2002), and Ruth Millikan, in “White Queen Psychology, or the Last Myth of the Given” (1993) and *On Clear and Confused Ideas* (2000), advanced different versions of anti-individualism that reject epistemic transparency. Paul Boghossian, in “Externalism and Inference”, “Reply to Schiffer” and “The Transparency of Mental Content” (1992), suggested that strong incompatibilism is true and that, if so, it would be more likely that anti-individualism is false than that epistemic transparency is.

The Traditionalist Critic

Boghossian's Position

In this chapter, I will critically discuss an argument that concludes in the outright rejection of anti-individualism on the supposed grounds of its incompatibility with epistemic transparency. This argument is formulated by Paul Boghossian most extensively in “The Transparency of Mental Content”. The argument has five main claims, two involving the technical notion of narrow content, which I will explain in due course.

- (1) Epistemic transparency and anti-individualism are incompatible.
- (2) Epistemic transparency is a necessary element of any account of reasoning and rationality.
- (3) Therefore, if epistemic transparency is strongly incompatible with anti-individualism, anti-individualism is false.
- (4) Narrow content is epistemically transparent.
- (5) Epistemically transparent narrow content can play the role in an account of reasoning and rationality that anti-individualism cannot.

Boghossian formulates this argument and seems attracted to it, but explicitly does not fully endorse it. In the concluding paragraph of the central paper, “The Transparency of Mental Content”, Boghossian writes

“There is a pervasive tension between our conception of rationality[, which includes epistemic transparency] and the practice of psychological explanation it underwrites on the one hand, and currently dominant [anti-individualist] conceptions of mental content, on the other. The former presuppose what the latter deny. One or the other conception must be reconsidered.” (49).

The concluding paragraph does not state which of epistemic transparency or anti-individualism must be rejected. Earlier, he writes

“I am inclined to think it unlikely that we will get a conception of propositional content that underwrites epistemic transparency. But I am concerned that we have not fully appreciated the role that transparency currently plays and the work that would need to be done were we to discard it.” (34)

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Boghossian's view seems to be this. Epistemic transparency and anti-individualism are incompatible. Epistemic transparency may not be strictly true. Now, we lack the needed replacement for epistemic transparency. And, it will be particularly difficult to provide such a replacement that is compatible with anti-individualism. Hence, it will be particularly difficult to vindicate anti-individualism. But only narrow content will be compatible with whatever principle replaces epistemic transparency.

I think that (2) and (5) are false and not adequately defended by Boghossian.³⁶ I am first going to criticize (2) outright. Remember that content is epistemically transparent iff a minimally rational thinker's reasoning powers can, in any situation, produce reasoning that is correct with regard to sameness and difference of content. And recall that content is merely epistemically translucent iff a minimally rational thinker's reasoning powers can, in any normal situation, produce reasoning that is correct with regard to sameness and difference of content. While Boghossian is probably correct that anti-individualist content is not epistemically transparent, he does not argue against the claim that content is epistemically translucent. And, his discussion of rationality is compatible with the claim that rationality requires epistemic translucency but not epistemic transparency. Then, I will turn to (5). I will argue that, in an account of rationality epistemically transparent narrow content does not fare better any better than epistemically translucent anti-individualist content. As we will see, epistemically transparent narrow content no more facilitates avoiding equivocation than does epistemically translucent anti-individualist content.

Boghossian: Rationality requires Epistemic Transparency

³⁶ I am skeptical that there is such a thing as narrow content and so doubt that (4) has any truth-value, but I will not here argue against the existence of narrow content.

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Let us consider (2). Boghossian approvingly cites the following passage from Michael Dummett's "Frege's Distinction Between Sense and Reference"

"It is an undeniable feature of the notion of meaning—obscure as that notion is—that meaning is *transparent* in the sense that, if someone attaches a meaning to each of two words, he must know whether these meanings are the same" (Dummett, "Frege's Distinction Between Sense and Reference," rpt. in *Truth and Other Enigmas*, 131)

As Boghossian points out, Dummett does not defend this claim. According to Boghossian, both Frege and Russell also believed in epistemic transparency, but did not explicitly defend it ("Transparency" 33). Boghossian thinks that epistemic transparency seemed obvious to these great philosophers because

"As [assessment of a thinker's rationality and explanation of his behavior] are currently conceived, a thought must be epistemically transparent... Without transparency, our conceptions of rationality and of rational explanation yield absurd results." ("Transparency" 39)

That, is epistemic transparency is integral to our everyday understanding of rationality.

Boghossian's argument is as follows:

- (1) One is minimally rational only if one can avoid all obvious mistakes in logic *a priori*.
- (2) One can avoid all obvious mistakes in logic *a priori* only if content is epistemically transparent.
- (3) Therefore, minimal rationality requires that content is epistemically transparent to one.
- (4) Rational assessment and explanation, and psychological explanation, presume that subjects are minimally rational.
- (5) Therefore, rational assessment and explanation, and psychological explanation, requires that content is epistemically transparent.

The sentence "one can avoid all obvious mistakes in logic *a priori*" in (2) refers to an *apriori* capacity to avoid logical mistakes. Evaluation of the argument turns on how this sentence is understood, *viz.* what is the scope of this capacity? Does the phrase mean "in *any* situation, one can avoid all mistakes in logic *a priori*", "in *some* situation, one can avoid all mistakes in logic *a priori*", "in *many* situations, one can avoid all mistakes in logic *a priori*", "in *normal*

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situations, one can avoid all mistakes in logic *a priori*”, or what? It is true that if, in *any* situation, one can avoid all mistakes in logic *a priori*, then content is epistemically transparent. However, it is not at all obvious that one is minimally rational only if one can *a priori* avoid all obvious mistakes in logic in *every* situation.

Equivocation is an obvious logical mistake. And there are many examples in which equivocation is evidently irrational. And, in our predictive and explanatory practices, we assume that rational thinkers will not equivocate *a priori*. However, neither of these facts establish that one is minimally rational only if in *any* situation, one can avoid all obvious mistakes in logic *a priori*. By itself, the fact that there are many examples of irrational equivocation conclusively establishes only that, in *certain* situations — namely those presented in the examples — a minimally rational thinker can avoid obvious logical mistakes *a priori*. Now, it seems clear that, in any normal environment in which a thinker equivocates, the equivocation is irrational. And, our predictive and explanatory practices apply at least to any normal minimally rational thinker in a normal environment. So the examples involving rational evaluation and explanation and prediction of rational agents’ thinking, if taken at face value, establish that, in any *normal* situation, a minimally rational thinker can avoid *a priori* equivocations and other obvious logical mistakes. However, this does not by itself establish that content is epistemically transparent. It only establishes that, in *normal* situations, in a minimally rational thinker’s thinking, obvious mistakes involving sameness or difference of representational type can be avoided *a priori*. It does not establish that such mistakes are *a priori* avoidable in *every* situation by a minimally rational thinker. However, the latter, not the former, is the claim that content is epistemically transparent. And while anti-individualist switching-induced equivocation is not compatible with the latter, it may be compatible with

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the former, for it may be that anti-individualist switched-induced equivocation occurs only in *abnormal* situations. Indeed, I will later argue that minimal rationality requires the ability to *apriori* avoid equivocation only in normal situations; that anti-individualism only produces *apriori* unavoidable equivocation in abnormal switching cases; and therefore that anti-individualism is compatible with the link between minimal rationality and epistemic translucency and logical reasoning.

Boghossian: De Re/Millian Beliefs and Rationality

Here, I am going to consider two further arguments on Boghossian's behalf. The first argument is that, as Boghossian puts, "Millian contents" are neither epistemically transparent nor suitable for rational explanation, and they are not suitable for rational explanation *because* they are not epistemically transparent. The second argument attempts to establish that an *apriori* capacity to avoid obvious logical mistakes in *normal* situations must be a capacity to avoid those mistakes in *every* situation.

Before presenting the first argument, I need to address Boghossian's terminology. Boghossian states this argument in two different ways, sometimes using the pairs of phrases "*de re* belief" and "*de dicto* belief" and sometimes using the pair "Millian content" and "Fregean content". I think that the phrases "Millian content" and "Fregean content" are much better suited to the argument, but Boghossian relies much more heavily on "*de re* belief" and "*de dicto* belief". Explaining his use of the latter phrases, Boghossian writes

"By a '*de re* belief' I shall mean, *by stipulation*, a belief that is individuated by the objects it is about. Such beliefs are typically reported with the use of an 'of-clause', rather than a 'that-clause', as in,

Jane believes *of* the piano that it is ugly,

and their content is given by a *Millian* proposition. Clearly, and in contrast with fully conceptualized, referentially opaque *de dicto* beliefs, it is both necessary and sufficient for the distinctness of two *de re* beliefs applying the same predicate that they concern distinct objects." ("Transparency" 40).

Boghossian is free to stipulate that he will use “*de re* belief” in whatever way he chooses.

However, there are several problems with his choice. First, the phrase “*de re* belief” has other meanings and, in this context, misleading connotations. For example, there is the idea that the difference between a *de re* belief about *x* versus a *de dicto* belief about *x* is that the *de re* belief, but not the *de dicto* belief involves a particularly “intimate” or direct epistemic relation to *x*.³⁷ On that usage of “*de re* belief”, there is no logical or conceptual entailment that *de re* beliefs are individuated in terms of their objects. Also, there is a contrast between *de dicto* and *de re* belief reports. The precise nature of the contrast is a matter of debate. Crudely, while a *de re* belief report reports what object the belief is about, a *de dicto* belief report reports the belief’s conceptual content.

Boghossian’s use of “*de re* belief” risks confusion between *de re* beliefs in his sense, *de re* beliefs in the epistemic sense, and *de re* belief reports. The confusion even occurs in Boghossian’s own paper. He describes *de re* beliefs as “referentially opaque”. But in the normal usage of the phrase “referentially opaque”, it is occurrences of linguistic expressions that are, or are not, referentially opaque; roughly, an occurrence of a referring expression is

³⁷ See David Kaplan’s “Quantifying In”. On the conception of *de re* belief advanced in that paper, *de re* belief involves the thinker possessing a substantial amount of conceptual material uniquely describing the *re*. In “Belief *De Re*”, Burge also claimed that *de re* representations, where these representations are distinguished by relying on a direct, epistemically basic relation to their representata, but Burge claimed that the relation to the *re* was not fully conceptualized. Thus, in “Postscript to “Belief *De Re*””, Burge characterizes *de re* beliefs as essentially involving a *de re* representation, where a *de re* representation is a

“referentially successful representation that involves an appropriate ‘not completely conceptual’ relation to a *re*...All types of *de re* representation on this conception are marked by a direct, epistemically basic relation to the *re* that goes beyond merely conceiving it” (Burge, “Postscript to ‘Belief *De Re*’” 75)

where perception is the simplest case of a ‘direct, epistemically basic relation’. Burge suggests that there are also *de re* representations of small numbers and of representational contents. Concerning *de re* representations of small numbers, he suggests that the direct epistemically basic relation is their “perceptually immediate applicability”, as in a *visual* representation as of *three* pens on the table. Concerning *de re* representations of representational contents, which figure both in claims about the semantic and logical properties of those representational contents and also in attributions of states typed by those representational contents, the relation is our understanding of the content (p. 75). Now, on that understanding of *de re* beliefs and representations, there can be *de re* representations of the same object that are of different type and whose pairing is not warranted, such as *de re* representations based on different perceptions of the same object.

referentially opaque iff it is not the case that substitution of every coreferential expression preserves the truth-value of the sentence in which the initial expression occurs.³⁸ Referential expressions in the noun-phrase that is the the direct object in a *de re* belief report are thought by many not to be referentially opaque, while, in *de dicto* reports, such expressions are referentially opaque.

In addition, the terminology of “*de re* belief” is liable to lead to a certain ontological confusion, and thus confusion about Boghossian’s argument. The confusion is a misleading appearance of numerical distinctness between *de re* and *de dicto* beliefs. One might think that a subject’s *de dicto* beliefs are mental states distinct from the *de re* beliefs, in something like the way that a subject’s hopes are mental states distinct from his beliefs. But it is doubtful that subjects have *both* particular *de re* belief-states *and distinct* particular *de dicto* belief-states.

A belief’s *Fregean* content is its conceptualized content. Its *Millian* content³⁹ is a complex of its subject matter. Thus, since there can be distinct concepts of the same entity, beliefs with distinct Fregean content can have the same Millian content. Boghossian argues, in effect, that Millian content is not rationally relevant, that Millian content is not epistemically transparent, and that such content is not rationally relevant *because* it is not epistemically transparent. But as I will point out in the course of expounding Boghossian’s argument, standard Frege’s Puzzle cases illustrate that Millian content is also not epistemically translucent. Boghossian’s first argument, that rationality requires epistemic transparency,

³⁸ Quine’s “Reference and Modality” and “Quantifiers and Propositional Attitudes” were major articles bringing the issue of opacity to the center of philosophy of language. In “Opacity”, Kaplan argued that it was occurrences of expressions, as opposed to the positions in which they occurred, that are opaque or not.

³⁹ Given our earlier definition of “content” as representational properties that figure in basic psychological patterns, and given that subject-matter may not do so, the phrase “Millian content” may be oxymoronic, referring to nothing. For present purposes, let us just accept the phrase “Millian content” as defined in the text, allowing that it may involve an extended use of the word “content”.

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does not address the possibility that minimal rationality may require only the capacity to *a priori* avoid obvious logical mistakes in *normal* situations. The current argument, from the fact that Millian content is not cited in rational explanation or evaluation, suffers from essentially the same problem. The current argument does not address the possibility that Millian content is unfit for citation in rational evaluation, explanation, and prediction because it is not epistemically translucent, and not because it is not epistemically transparent. What is important for Boghossian's argument are which *representational properties* of mental states and events can be cited in rational assessments and explanations.

Now, let us consider Boghossian's argument. Boghossian provides two examples to illustrate Millian content's unsuitability for rational evaluation or explanation. Thus, he first considers a case in which Miles sees an apple first from one side, and then, somewhat later, from another. On the first viewing of the apple *a*, *a* looks to be in good condition, and so Miles thinks that apple_{*a*} is now_{*t*} wholesome. *a* is removed from Miles' visual field but he remembers the apple and its state, and so believes that apple_{*a*} was wholesome then_{*t*}.⁴⁰ After a short time, *a* is returned to Miles' visual field, but displaying its the other side, which has a worm hole. Miles thinks that apple_{*a*} is not now_{*t*} wholesome. Let us suppose, as is possible, that Miles believes that apples do not quickly change from being wholesome to unwholesome. So, thinking fondly of *a*, Miles believes that apple_{*a*} is now_{*t*} wholesome. These two beliefs have the Millian contents $\langle a, \text{not wholesome at } t \rangle$ and $\langle a, \text{wholesome at } t \rangle$. So, the Millian contents of Miles' beliefs are contradictory; Miles believes a Millian contradiction. Also, Miles is

⁴⁰ I am assuming here that a demonstrative based on a perceptual memory is indexed by the perceptual memory on which it relies and that an application of then is indexed by the time at which it occurs. Nothing essential hangs on this assumption.

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rational in holding these beliefs. But in some situations, believing a contradiction is irrational.

So why is Miles not irrational in believing this contradiction?

The obvious explanation of Miles' rationality is, according to Boghossian, as follows. Rationality requires, and rational thinkers can be predicted, to avoid obvious logical mistakes. Furthermore, rationality requires being able to avoid these logical mistakes in *any* situation on *apriori* grounds alone. This explains why Millian logical properties and relations are not rationally relevant. The logical properties and relations of Millian contents depends in part on identity and difference of their constituents. For many constituents, *apriori* reasoning capacities are in many situations not sensitive to their identity or difference. *A fortiori*, such capacities are not sensitive to such identity and difference in *every* situation — sameness and difference of Millian content is not epistemically transparent. So, *apriori* reasoning capacities are not in every situation sensitive to whether Millian contents are consistent or contradictory. That, according to Boghossian, is why Millian contents do not figure in rational evaluation or explanation. So, Boghossian concludes, it is because Millian contents are not transparent that we do not articulate rationality principles in terms of them. So, whatever contents we *do* articulate rationality principles in terms of, those contents must be transparent.

This argument is unsuccessful. Boghossian is correct that rationality principles are not formulated in terms of Millian contents and their logical relations. Boghossian is also correct that Millian contents are not epistemically transparent. However, as I will explain, he fails to establish that rationality principles are not formulated in terms of Millian contents *because* those contents are not transparent.

Recall, first, that an intentional property is *apriori* accessible in a given situation iff in that situation the thinker's *apriori* cognitive capacities can produce different responses to states

that do or do not have that property. Recall, second, that contents are epistemically translucent iff in *normal* circumstances, the sameness and difference of contents is *apriori* accessible. Millian content is not epistemically translucent. The apple scenario is a normal situation in which Miles' *apriori* reasoning capacities cannot differentiate between every content that contains the apple and every content that does not. More generally, there is nothing abnormal about being unable to determine whether one has encountered the same object again or instead has encountered first one object and then another.⁴¹ *A fortiori*, there is nothing abnormal in lacking *apriori* reasoning capacities that can differentiate between any content that contains the apple and any content that does not. Because Millian content is neither epistemically transparent nor translucent, it is an open question whether Millian content is not immediately rationally relevant because Millian content is not epistemically transparent or rather because it is not epistemically translucent.

As noted, Boghossian claims that rationality requires being able to avoid these logical mistakes in *any* situation on *apriori* grounds alone. Let us call this claim "Universality". If Universality is true, then the reason that Millian contents do not figure in rational evaluations is that such contents are not epistemically transparent. Now, consider the claim that rationality only requires that, in *normal* situations, one can to avoid logical mistakes on *apriori* grounds alone. Let us call this claim "Mere Normality". Now, Miles' rationality in the apple scenario is equally well explained by Universality and Mere Normality. For, the apple scenario is a normal scenario. And the contradiction between the Millian contents is not in that situation *apriori* accessible. Consequently, both Universality and Mere Normality entail that rationality does not require avoiding that contradiction. Now Mere Normality only

⁴¹ Though *c.f.* Jerry Fodor's comments about the unsystematic nature of Frege's Puzzle cases in *The Elm and the Expert*, *esp.* Ch. 2, p. 49.

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entails epistemic translucency, not epistemic transparency. So, simply pointing out that

Millian content is neither unsuitable for rational evaluation nor epistemically transparent does

not entail that such content is so unsuitable because it is not transparent. Millian content

could be unsuitable because it is not translucent. It seems that minimal rationality and logical

reasoning can be connected in a way that, on one hand, explains Millian content's

unsuitability for rational evaluation, but, on the other, does not entail epistemic transparency.

To establish that content is epistemically transparent, Boghossian would have to argue

for Universality and against Mere Normality. Boghossian does not discuss Mere Normality

and does not explicitly provide any argument for Universality instead of Mere Normality.

However, one passage does contain comments that bear on Mere Normality. Boghossian

writes

“What does a person have to do in order to count as a good reasoner? Clearly, it is not at all a question of knowing empirical facts, of having lots of justified true beliefs about the external world. Rather, it is a matter of being of able, and of being disposed, to make one's thoughts conform to the principles of logic on an a priori basis.¹⁹ [Footnote 19: Notice that I am talking primarily about 'good reasoning,' rather than 'rationality' more widely construed. I take good reasoning to involve norms concerning the manipulation of propositions already at hand; I leave it open whether rationality involves something more.] A surreptitiously envatted brain—transplanted from its normal adult body into a vat and attached to a computer that seamlessly duplicated and continued its previous course of experience—could be as good a *reasoner* as it ever was, despite the sharp escalation in the number of its false beliefs about the external world.” (42)

Suppose that Ella can entertain a group of propositions about the physical world.

Boghossian's claims are then as follows. As far as Ella's being a good reasoner with those

propositions goes, it does not matter whether they are true or false. It does not matter what

the state of the external world is. All that matters are the results produced by Ella's *apriori*

reasoning capacities. In particular, Ella's reasoning is rational only if her reasoning respects

logical principles as a result of the performance of those capacities. Up to the last claim, the

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defender of Mere Normality can agree.⁴² The defender of Mere Normality must disagree with the last claim.

On the Mere Normality view, if Ella is reasoning rationally but in an abnormal environment, her *apriori* reasoning capacities may not prevent violation of basic logical principles. The defender of Mere Normality instead proposes a somewhat more complicated condition on the rationality of Ella's reasoning: her reasoning is rational only if her *apriori* reasoning capacities are so performing that her reasoning would respect logical principles if she were in a normal environment. Now, Boghossian asserts that as far as the rationality of Ella's reasoning with contingent propositions about the physical world goes, it does not matter whether they are true or false. It does not matter what the state of the external world is. But these assertions do not support Universality over Mere Normality. Those assertions require that one can be rational in very different environments, perhaps in any environment in which one's reasoning capacities are intact. But the assertions do not require any particular link between reasoning's being rational and reasoning's adhering to logical principles. In particular, the assertions do not require that rational reasoning actually adhere to logical principles no matter the state of the environment. It could instead be that the reasoning is rational if the *apriori* capacities producing it so contribute to Ella's state of mind that if Elle were in a normal environment, her reasoning would respect logical principles. This does not require that Ella actually be in a normal environment.

Consequently, as far as I can determine, Boghossian does not establish any considerations that favor Universality over Mere Normality. So his main argument for

⁴² I am not at all sure that the initial claims in this line of reasoning are correct. But we can grant them for the sake of argument.

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epistemic transparency fails. It does not establish epistemic transparency, and not mere epistemic translucency, is a necessary element of any adequate picture of rationality.

Narrow Content

The argument formulated by Boghossian claims that narrow content is preferable to anti-individualism because narrow content is epistemically transparent. If there were such a thing as narrow content, it could be epistemically transparent. But as we will see, the epistemic transparency of *narrow* content would not enable any greater degree of *apriori* adherence to logical principles than is enabled by the epistemic translucency of anti-individualist content. If I am correct, then the current argument for epistemic transparency does not favor narrow content over anti-individualist content. To understand precisely what the narrow content picture holds, it will be helpful to contrast it with another alternative to anti-individualism. And in drawing that contrast, it will be helpful to distinguish between two claims:

Partial Environmental Determination of Mental Reference: The environment of a mental states's thinker, and that mental states's relation to that environment, help to determine what that mental state represents.

Partial Environmental Determination of Mental Type: The environment of a mental states's thinker, and that mental states's relation to that environment, help to determine the representational type of that mental state.

Some philosophers, such as Hugh Mellor and Eddy Zemach, have denied both claims. Mellor and Zemach held that, before the discoveries that water is H₂O and that twinwater is XYZ, 'water' had the same meaning and reference on Earth and Twin Earth, and that Oscar and TwinOscar's mental states had the same referents and were of the same representational type. In my view, the intuitions that Oscar and TwinOscar's speech and thoughts have different subject-matters, water or twinwater, respectively, are extremely strong; those intuitions are

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supported by strong theoretical considerations; Zemach and Mellor's arguments to the contrary are unsound; and those arguments involve confusions about the considerations in favor of both **PEDMR** and **PEDMT**. I will not further consider arguments against **PEDMT**.

An intermediate position accepts **PEDMR** but rejects **PEDMT**. That is, while *what* is represented by a mental state is in at least some cases partially environmentally determined, mental representational types are not at all individuated in terms of environmental relations. So, while Oscar thinks about water and TwinOscar thinks about twinwater, they are in the same type of mental states. This position holds that mental states have only *narrow content*. A mental state's representational type is its narrow content; narrow content is not individuated in terms of the environment or environmental relations; and narrow content is not individuated in terms of its subject matter. So, according to this view, there is a representational type retaw; Oscar and TwinOscar both have beliefs of this type; and Oscar's retaw instances refer to H₂O, while TwinOscar's retaw instances refer to XYZ. This sort of analysis is intended to apply to a concept if the referent of an instance of that concept is dependent on relations between the environment and the instance's thinker.

The idea of narrow content was inspired by apparatus developed primarily by David Kaplan, John Perry, and Robert Stalnaker,⁴³ in their efforts to account for contextually determined aspects of linguistic reference and truth-conditions, particularly for indexical and demonstrative expressions such 'I', 'here', 'now', 'that', 'that dog', and the like. The approach developed is as follows. Like the word 'cow', the word 'here' in English has a context-independent linguistic meaning; different utterances, uses, or occurrences of the word have

⁴³ See Kaplan's "Demonstratives", Stalnaker's "Assertion", "Indexical Belief", and "Semantics For Belief", and Perry's "The Problem of the Essential Indexical". In "Demonstratives", Kaplan raises doubts about the general application of the apparatus in §22. Stalnaker explicitly opposes the use of the apparatus to advance a narrow content position in "On What's in the Head", "Narrow Content", and "Twin Earth Revisited".

the same meaning. But while the word ‘cow’ has the same reference on different occasions — the species cow — ‘here’ has context-dependent reference; different utterances of ‘here’ typically refer to different areas because an utterance of ‘here’ refers to the location of the speaker. Kaplan and Perry suggested that the meaning of ‘here’ either was, or determined, a function that assigned referents to utterances of ‘here’, namely the location of the utterer. Different reference-determining functions were proposed for demonstrative such as ‘that dog’, including a function from the perceptual array associated with the utterance and a function from the thinker’s intentions. A further step was taken by identifying the context-*independent* linguistic meaning of an indexical or demonstrative with the representational type of those thought-instance-components that the indexical or demonstrative was used to express. The representational type of such a thought-component was thus independent of at least some representationally important environmental factors.

Advocates of narrow content⁴⁴ extended the proposals about indexical and demonstrative thought-components. First, they held that the representational type of such thought-components is in no way constitutively dependent on environmental relations. Such thought-components thus had *narrow content*. Second, they held that, if a mental state’s reference was partially environmentally determined, that state’s *content* nonetheless (a) was constitutively independent of the environment and (b) determined a rule from the contextual

⁴⁴ (Fodor, in “Methodological Solipsism Considered as a Research Strategy in Cognitive Psychology, “A Modal Argument for Narrow Content” and *Psychosemantics*, Brian Loar in “Social Content and Psychological Content” and Stephen White in “Partial Character and the Language of Thought” were early advocates of this position. Loar, David Chalmers, David Lewis, and Gabriel Segal, among others, have continued to advocate for narrow content. Fodor has since changed his mind, concluding that all content is wide, in *The Elm and the Expert*, esp. chs. 1 and 2. In one way, this a radical move on Fodor’s part, since he thinks that content is Millian. And he thinks that such content figures in intentional explanation and causation, genuine species of explanation and causation. However, he also thinks that there is a language of thought whose symbols are individuated individualistically, and that psychological processes are explainable as computations on these symbols. So for Fodor there is still a psychologically relevant explanatory state, associated with a mental state’s content, that is individualistic.

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relations of an instance of that content to its referent.⁴⁵ So, there was a narrow content retaw that a thinker in any environment is capable of entertaining, and retaw determines a function from those of its instances thought by Oscar on Earth to H₂O, and from those of its instances thought by TwinOscar on TwinEarth to XYZ. Now, thinkers in almost any environments can think retaw. So one pressing question for the narrow content theorist is, what is the rule is determines the referent of retaw-instances in all of these different contexts? Simply specifying what retaw instances' referents in two different environments does not provide such a rule.

The point of the narrow content theory is just to allow that while, yes, what we think *about* constitutively depends on the environment, the *intentional nature* of our thoughts does not constitutively depend on the environment. The narrow content theorist allows that the intuitions that there are objective and independent environmental determinants of reference, that the cases supporting this view are very strong indeed. One important motivation for narrow content theory, articulated by Fodor,⁴⁶ concerns psychological explanation. The idea here is that psychological explanation is concerned solely with interactions among mental states, that such interaction should be studied independently of the thinker's environment, and that the kinds cited by such explanation should therefore be environment-independent.⁴⁷

Narrow Content Fares No Better

⁴⁵ In "Transparency", Boghossian defines narrow content as not individuated in terms of referent or other contribution to truth-value determination. He does not characterize it in terms of these two properties.

⁴⁶ "Solipsism", "A Modal Argument", and ch. 2 of *Psychosemantics*. For rebuttal, see the Stalnaker articles previously cited as well as Burge's "Individualism and Psychology", "Individuation and Causation in Psychology", "Intentional Properties and Causation" and Part III of *Origins*.

⁴⁷ Other narrow content theorists are clearly motivated by concerns about subjectivity. Part of the idea is that content gives the thinker's subjective perspective on the world and that a thinker's subjective perspective is constitutively independent of the environment. However, the anti-individualist might simply deny a thinker's subjective perspective is constitutively independent of the environment. To actually count in favor narrow content theory, more needs to be said about how subjectivity is being understood by the narrow content theorist.

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I am now going to try to show that, as far as Boghossian's argument from transparency goes, in the final analysis narrow content fares no better than anti-individualist content. As we will see, the problem is that, while narrow content may be epistemically transparent, that epistemic transparency would not allow a thinker to *apriori* avoid equivocation in every situation. So the narrow content proposal does not preserve the root intuition that motivated the transparency requirement.

Let us consider how the narrow content advocate would describe the stable and switch situations. In the normal, stable situation, Oscar thinks multiple instances of retaw. Since Oscar does not switch, all of these instances refer to water. In the switch situation, Oscar thinks instances of the same content, retaw, before and after the switch. All of the instances thought before the switch refer to retaw, and presumably continue to do so after the switch. At some point, Oscar's new retaw instances refer to twinwater. Now, it seems that, if Oscar is capable of reflective knowledge, he could know *apriori* that his early and old thoughts contain instances of the same concept, retaw. And, Oscar can *apriori* pair an instance of retaw with all and only instances of retaw. However, this pairing ability will not save Oscar from making logical mistakes. Consider the belief, acquired pre-switched and retained, I swam in retaw as a child, whose retaw-instance refers to water, and the post-switch belief there is retaw in that glass, whose retaw instance refers to twinwater. If Oscar pairs these instances, he is making a *logical mistake*, since the two retaw instances do not corefer. Different instances of retaw need not corefer. So, it is *not* the case that if two narrow-content instances are of the same narrow content-type then they corefer in virtue of logical form. That is, an argument's logical form does not depend just on its narrow content. This is built into the very *definition* of narrow content. So, *apriori* accessibility of narrow-content sameness and difference of type does not

suffice for *apriori* accessibility of logical form. So, *apriori* accessibility of narrow content sameness and difference of type does not provide the *apriori* ability to avoid obvious logical mistakes. To put the point slightly differently, epistemic transparency is sufficient to avoid obvious logical pairing mistakes only if sameness of content suffices for logical coreference.. If the advocate of narrow content were correct, more than epistemic transparency would be required to avoid obvious logical mistakes.⁴⁸ Indeed, if pairing capacities were sensitive *only* to narrow content sameness and difference, then it seems that there would be many non-coreferring instances, and hence we would be quite unreliable at producing univocal reasoning.⁴⁹

Now, in some sense it is not surprising that this issue is not raised in Boghossian's paper. For one thing, Boghossian acknowledges that even if content is narrow, it still may not be epistemically transparent (Presumably, he thinks that narrow content is more likely to have whatever property replaces epistemic transparency.). He does not explain why he thinks this, however. Also, there *is* a logical system in which something like narrow content *does* suffice for logical coreference, David Kaplan's LD from his paper "Demonstratives". In that paper, Kaplan defines a technical notion called "character", which has the two defining characteristics of narrow content defined above. And in Kaplan's system, sameness of character is the sameness of representation that provides for logical coreference. But, that is because of a restriction Kaplan places on his system, a restriction that is violated in switch

⁴⁸ Millikan makes a similar point in ("Last Myth" 328). That essay also contains a number of other related criticisms of narrow content.

⁴⁹ In Ch. 8. of *Intentionality*, John Searle offers a different view of what might be called narrow content and which does not have this problem. On his account, Oscar and TwinOscar think different contents, referring respectively to water and twinwater. This result is achieved because each content-instance is partially self-referential, with the consequence that each of Oscar's different natural-kind thoughts about water have different contents. Burge, in "Other Bodies", and Stalnaker, in "On What's in the Head" and "Narrow Content" offer powerful objections to Searle's position.

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cases. Kaplan considers the logic, not of *utterances* of expressions, but of *occurrences* of expressions. And, in any context, an indefinite number of expressions may occur. Kaplan's LD takes advantage of this fact. Kaplan's notion of validity is defined for arguments all of whose sentences occur *in the same context*. Given that restriction, sameness of character suffices for coreference: different occurrences of an expression with the same character are guaranteed to refer to the same thing, relative to a given context. So, one way for two to expression corefer in virtue of logical is to have the same of character. But, in the switch cases, there is obviously lots of context shifting, and the entities involved in reasoning are mental states. If one was not thinking of this difference between character in Kaplan's precisely defined LD, and narrow content of mental states, then one might not notice that transparency of narrow content does not suffice for *apriori* avoidance of obvious logical mistakes. It should be noted that Kaplan does not make this mistake. He is very clear that the LD definition of validity only requires that valid arguments preserve truth *within* context, *i.e.*, the conclusion must be true in a context only if all the premises are true *in that same context*. In fact, in a famous passage, Kaplan calls attention to the fact that logical relations *across* contexts are a more complicated matter, nicely dubbed "cognitive dynamics" (537).

As discussed above, the point of narrow content theory is to cede the very strong intuitions and arguments about environmental determination of reference, but maintain that the intuitions and arguments in favor of anti-individualism are not as strong, and thereby hold onto an individualist view of the nature of mentality. Now, logical relations depend on sameness and difference of reference. So if **PEDMR** is true, then logical relations, at least across contexts, depend on the environment. This is a point that the narrow content theorist

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should accept.⁵⁰ Now, if epistemic transparency itself were just a given, then it could be appealed to in an argument supporting narrow content theory. But epistemic transparency is *not* just a datum. Narrow content is no better in satisfying strong constraints involving rationality and *apriori* access to logical relations, because *apriori* access to logical relations is stymied, not by PEDMT, which the narrow content theorist rejects, but by PEDMR, which the narrow content theorist accepts.

⁵⁰ The narrow content theorist conceivably could claim that, while environmental relations determine reference, environmental relations so contribute to the determination of reference for narrow content that different instances of narrow content in one mind have their reference determined by the same environmental relations and so are guaranteed to corefer. However, this claim could, in two ways, undermine the narrow content theorist that anti-individualism is incompatible with epistemic transparency. One, the intuitions in the switch case are about *reference*, and do not seem to rely on an antecedent commitment to environmental determination of intentional *type*. So the existence of such a narrow determinant of coreference seems incompatible with the description of the switch cases according to which anti-individualism is incompatible with epistemic transparency. That is, either (1) there is new *apriori* inaccessible reference, and (a) anti-individualism is incompatible with epistemic transparency and (b) there is no narrow determinant of coreference; or (2) there is new *apriori* inaccessible reference, in which case anti-individualism is compatible with epistemic transparency. Two, if the argument succeeded, then there would be a narrow determinant of coreference. But the existence of such a determinant could be *compatible with anti-individualism* and so could undermine narrow content theory. Anti-individualism claims that intentional type is *partially*, but not necessarily *entirely*, determined by environment-involving properties and relations. So anti-individualism is compatible with intentional type being partly individuated by properties and relations that do *not* involve the environment. Now the narrow content theorist would argue that if two mental states are linked by the putative narrow determinant of coreference, then the same environmental relations determine their reference. The anti-individualist could analogously claim that if two mental states are linked by the this narrow determinant, then the same environmental relations determine their *type*. The presence or absence of this determinant would presumably be *apriori* accessible. Consequently, even though type would be determined in part by environmental relations, two mental states of the same thinker would be of the same type iff they were linked by this narrow feature. So sameness of intentional type would be preserved, and anti-individualism would be compatible with epistemic transparency.

Millikan

In a series of works, Ruth Millikan has argued that anti-individualism and epistemic transparency are incompatible and that epistemic transparency is false. I will discuss her arguments from “White Queen Psychology; or the Last Myth of the Given” in her *White Queen Psychology and Other Essays for Alice* (1995) and from her book *On Clear and Confused Ideas* (2000).⁵¹

Before presenting those arguments, I should mention a topic I will not be discussing. In *Language, Thought, and Other Biological Categories* (1984) and subsequent work, Millikan has developed an original and provocative account of representational content in heavily evolutionary terms. Human psychologies evolved, of course, and study of the human mind can exploit this fact, by studying simpler psychological systems, both those from which ours evolved and also those which evolved in different ways, and by considering what sorts of evolutionary constraints and opportunities were provided by the human genome and the environment in which the human mind evolved. Millikan’s proposal is more radical: psychological capacities, states, and events, including representational capacities, states, and events, are *typed* evolutionarily. So, part of being the capacity to think water is having a certain evolutionary history. Indeed, Millikan thinks of the science of psychology as, in essence, a sub-discipline of biology; she writes:

“Cognitive psychology is a biological science, which means that its job is to study how cognitive systems *work*. In the first instance, it must simply ignore the multitude of instances in which these systems *don’t* work. The job of core psychology is not to predict behavior but to explain the mechanisms, including the contributions of supporting environmental structures, that together account for cases of *proper* cognitive functioning.” (“White Queen” 363)

⁵¹ Initial versions of the arguments from *On Clear and Confused Ideas* were published in “Images of Identity”, “On Mentalese Orthography”, “Perceptual Content and Fregean Myth”, and “On Unclear and Indistinct Ideas”.)

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Millikan's biosemantics⁵² proposal, in its scope, depth, and complexity, is beyond the scope of this work. And, some of her claims about and arguments for the strong incompatibility of anti-individualism and epistemic transparency are related to her larger project. However, in my view, many of them can be fairly evaluated independently of that project, and this is what I will do here.

Millikan and Fregeanism

Simplistic Fregeanism & Meaning Rationalism

Millikan's argument that anti-individualism is incompatible with epistemic transparency is part of another broader project — narrower than her biosemantics — concerning relations between identity judgments, propositional logical form, and rationality. The view Millikan argues against I will call "Simplistic Fregeanism". I call it "Fregeanism" both because it is inspired by Frege and because Millikan attributes it to him. I call it "Simplistic" because I do not believe that Frege held it and I believe that while some of its claims are false, restrictions of them are true.

Simplistic Fregeanism consists of a group of claims, only some of which are distinctive to Simplistic Fregeanism (*Ideas* 170).

1. Representational Properties

- a. Any entity can be represented by distinct intentional types, neither of which are definite descriptions, such as galvanism and electricity, Jay-Z and Shawn Corey Carter, and that rope_{e1} and that rope_{e2}.
- b. If $\underline{\alpha}$ and $\underline{\beta}$ are distinct coreferential types, then $\underline{\alpha}=\underline{\beta}$ is true, but not because it has the form $\underline{\alpha}=\underline{\beta}$.⁵³

⁵² This term is the title of one her articles and she uses it to describe her views.

⁵³ A proposition has the form $\underline{\alpha}=\underline{\beta}$ iff $\underline{\alpha}$ and $\underline{\beta}$ are of different intentional type and are arguments of $\underline{=}$. The one and only entity that is both bald and happy is identical to the one and only entity that is both happy and bald has the form $\underline{\alpha}=\underline{\beta}$ but is necessarily and logically true. It is not true *because* it is of the form $\underline{\alpha}=\underline{\beta}$. That aspect of the proposition's logical form is not what explains its logical truth. Rather, the internal logical structure of the particular $\underline{\alpha}$ and $\underline{\beta}$ are essential elements of the proposition's being a logical truth.

- c. Any tokens of the same concept, such as different instances of water, or of the same occurrence-based types, such as of that rope_{c1}, thought in the same possible situation, have the same referent.⁵⁴
- d. Consequently, every proposition of the form if α exists, $\alpha=\alpha$ is necessarily true, because it has the form if α exists, $\alpha=\alpha$.⁵⁵

2. Epistemic Properties:

- a. Intentional types are epistemically *transparent*: under any condition, identity and difference of tokens' intentional type is immediately *apriori* accessible to a rational thinker.
- b. Because of 1. and 2.a., if α exists, $\alpha=\alpha$ is knowable *apriori*, uninformative, self-evident, and certain.
- c. Because of 1. and 2.a., pairing of different instances of the same type is warranted *apriori*, requires no reasoning, is self-evidently correct, and certain.
- d. The ratification of certain arguments is warranted *apriori*, self-evidently correct, and certain, in part because of 2.c.
- e. Representations of the form $\alpha=\beta$ may lack all of the properties specified in 2.b..⁵⁶

2.a-2.d. are the claims distinctive of Simplistic Fregeanism. I think that Simplistic Fregeanism is false because of 2.a-2.d.. I will later advance a Moderate Fregeanism which contains weaker epistemic claims than 2.a-2.d..

Millikan thinks that Simplistic Fregeanism is one instance of Meaning Rationalism, a doctrine she identifies as composed of three claims:

⁵⁴ The restriction to possible situation is necessary because many representations would have referred to other entities had the world been different, e.g. The President of the United States in 2001 A.D.. Also, depending on the individuation of instances of indexical types, there may be different instances of the same intentional type that refer differently. Consider two here instances thought by differently located individuals, at the same time and in the same situation. If the *full* type of these instances is given by here, then instances thought by different thinkers of the same type at the same time in the same situation need not corefer. But, it may be that the full type of each instance includes an indexing by the event of the application of the here-ability. Since the two here instances are distinct applications of the here ability, they would not be entirely of the same intentional type.

⁵⁵ Maybe $\alpha=\alpha$ is true even if α does not refer. But this is debatable. the greatest natural number = the greatest natural number is not *obviously* true.

⁵⁶ Simplistic Fregeanism is consistent with the claim that a proposition of the form The one and only entity that is both φ and ψ is identical to the one and only entity that is both ψ and φ , while of the form $\alpha=\beta$, can be known *apriori* and may have some of the other epistemic properties of sentences of the form $\alpha=\alpha$. But it does not have those properties *because* it is of the form $\alpha=\beta$.

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1. The epistemic givenness of meaning identity and difference A rational person has the capacity to discern a priori whether or not any two of her thoughts correspond to the same term or proposition, the same meaning.

2. The epistemic givenness of univocity A rational person has the capacity to discern a priori when she is entertaining a thought with double or ambiguous meaning (if ambiguous thoughts are possible at all).

3. The epistemic givenness of meaningfulness A rational person has the ability to discern whether she is meaning a term or proposition or whether her thought is empty of meaning." ("White Queen" 287)⁵⁷

As with Simplistic Fregeanism, I think that while Meaning Rationalism is false, qualifications of it are true.

Millikan's Anti-Fregeanism

Millikan rejects Simplistic Fregeanism and Meaning Rationalism wholesale. She writes "I am driven by a naive but fanatical desire to make it utterly clear not only to Alice but to Every Reader that, and why, meaning rationalism is a Very Bad Idea and a Hopeless Dead End" ("White Queen" 303). To explain the depth of Millikan's rejection of Simplistic Fregeanism, it will be helpful to quickly introduce Millikan's version of Strawson's dot-model of representations, which she outlines in *On Clear and Confused Ideas*. The details of this model need not concern us. On the dot-model, a thinker can entertain distinct modes of presentation of the same object. The key relevant feature is that, over any appreciable amount of time, for each object that the thinker believes there to be, the thinker entertains only *one* mode of presentation. So if a thinker comes to believe $\underline{\alpha}=\underline{\beta}$, then the thinker will discard either one of $\underline{\alpha}$ and $\underline{\beta}$ and replace all occurrences of the discarded mode of presentation with occurrences of the other, retained mode of presentation. Or, the thinker will replace all occurrences of $\underline{\alpha}$ and $\underline{\beta}$ with a new mode of presentation $\underline{\gamma}$. If $\underline{\alpha}=\underline{\beta}$ is false, then the one remaining mode of

⁵⁷ Later in "White Queen" (326), Millikan reformulates these claims using her term of art "semantic modes of presentation".

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presentation will be either ambiguous, empty, or refer to α 's referent or β 's referent but not both. Millikan believes that *all* mental systems of identity representation fit the Strawson model of sameness marking (159). Now, with regard to Simplistic Fregeanism, she writes

“I conclude that given Strawson’s model of sameness marking there is no way to salvage the notion that there are such things as modes of presentation that will do all, indeed perhaps any, of what Frege wanted them to.” (158)

In her view, there is no intentional type such that each of its instances represent the same entity and whose identity and distinctness from other types is *apriori* accessible (170, *ff.*). As suggested by Millikan’s advocacy of the Strawson model, her position is in fact rather extreme. She writes

“[A]s distinguished from an identity sentence or assertion, there is no such thing as an identity *judgment*. It is not the job of an identity sentence to induce a belief. Its job is to induce an act of coidentifying.... Grasping an identity is not remotely like harboring an intentional attitude. Similarly, mistaking an identity is not harboring a false belief.” (172-3).

‘coidentifying’ is a term of art (144-6) that, for current purposes, can be understood as the merging, described above, of the representations associated with two representation-types so that all those representations are associated with the same representation-type.

To explain what is going on here, we need Millikan’s content/vehicle distinction. Millikan does not explicitly define the term ‘vehicle’. However, as I understand her distinction, associated with a given mental state are a vehicle and maybe a content. The vehicle is a mental representation, where mental representations are *individuated* non-*semantically*, have *causal powers*, and have representational properties in that they are potentially representations *of* entities. The vehicle might have linguistic form, but it need not.⁵⁸

⁵⁸ Millikan allows for this possibility at pp. 140-142. As we will see, her conception of linguistic vehicles is somewhat different from the standard picture of a language of thought.

It might instead be structured like a map, for instance.⁵⁹ A mental state's content is its properly representational properties. For Millikan, that content may be a Millian proposition, if the vehicle is a linguistically structured representation. Millikan does not tell us what the content of a mental state using a map-structured vehicle is, but presumably it would be some sort of structure of objects, properties and relations. Millikan seems to think the causal interaction between contentful mental states can always be explained in terms of the mental states' representational *vehicles*, independently of the mental states' contents.

One common understanding of the mind that involves something like vehicles is the Language of Thought computational model.⁶⁰ On this model, there is a language of thought. A language of thought is made up of non-semantically individuated expressions and has a recursive grammar. Each expression in the language, including sentences is unambiguous and has a semantic value. Associated with each kind of propositional attitude A , such as wishing or believing, is a distinctive computation relation c_A . A thinker A s that p iff in the thinker's mind there is a sentence s of the language thought, s means that p ,⁶¹ and s stands in c_A . Causal relations among propositional attitudes can be described in terms of the purely computational and syntactic relations between the sentences of the language of thought.

Millikan does not endorse all of the Language of Thought view just explained. She seems to think that some but not all thoughts include or rely on sentences from a language of thought. However, she thinks that elements of the language may be ambiguous or lacking in

⁵⁹ Millikan endorses this possibility on p. 142.

⁶⁰ See Field, "Mental Representation" and Fodor, *The Language of Thought* and *The Elm and the Expert*. Fodor continue to develop his characterization of the language of thought.

⁶¹ There are different proposals for the nature of p , i.e., for the meaning of a sentence in the language of thought. They include: truth-conditions, Russellian propositions, and narrow contents. I suspect that Millikan prefers Russellian propositions ("White Queen"). But since none of the arguments to be considered rely on claims about the specific nature of the meanings of sentences in the language of thought, I will not pursue the issue.

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semantic value. In particular, not all sentences of the language need express a proposition.

Notably, identity sentences do not. And she does not think that causal relations among the propositional attitudes underlain by sentences must be explained in terms of *computational* relations between those sentences. On this view, when a thinker “mentally asserts” an identity sentence ‘ $\alpha=\beta$ ’, there is no proposition asserted, since ‘ $\alpha=\beta$ ’ does not express a proposition.⁶²

Rather, all occurrences of ‘ α ’ and ‘ β ’ are replaced by one expression of the same category, either one of the old expressions ‘ α ’ or ‘ β ’, or a new expression ‘ γ ’.

Moderate Fregeanism

Moderate Fregeanism is an alternative to Simplistic Fregeanism and radical Anti-Fregeanism. Moderate Fregeanism agrees with Simplistic Fregeanism on the representational properties of intentional types, but disagrees with Simplistic Fregeanism on claims about epistemic properties.

1. Representational Properties

- a. Any entity can be represented by distinct intentional types, neither of which are definite descriptions, such as galvanism and electricity, Jay-Z and Shawn Corey Carter, and that rope_{e1} and that rope_{e2}.
- b. If $\underline{\alpha}$ and $\underline{\beta}$ are distinct coreferential types, then $\underline{\alpha}=\underline{\beta}$ is true, but not because it has the form $\underline{\alpha}=\underline{\beta}$.
- c. Any tokens of the same concept, such as different instances of water, or of the same occurrence-based types, such as of that rope_{e1}, thought in the same possible situation, have the same referent.
- d. Consequently, every proposition of the form if α exists, $\alpha=\alpha$ is necessarily true, because it has the form if α exists, $\alpha=\alpha$.

2. Epistemic Properties:

- a. Intentional types are epistemically *translucent*: under normal conditions, identity and difference of tokens’ intentional type is immediately *apriori* accessible to a rational thinker, but may not be so accessible under abnormal conditions.

⁶² The phrase ‘mentally assert’ is problematic for Millikan. She explicitly denies that there are identity *judgments*. She seems to allow that there are *assertions* of mental identity sentences. However, the notion of assertion in use here is arguably deviant. Assertions do use sentences. But a thinker makes an assertion by producing a publicly available sentence of a *public* language. And, what is asserted is, in effect, that the *propositional content* of the public sentence is *true*. I do not think that it would much more deviant to say that thinkers do make identity judgments, but that such acts have no content and so, *a fortiori*, no content is judged true or false.

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- b. Because of 1. and 2.a., any proposition of the form if α exists, $\alpha=\alpha$ is knowable *a priori*.
- c. if α exists, $\alpha=\alpha$ is uninformative and self-evident only relative to a warranted presupposition of environmental normality.
- d. Warrant for if α exists, $\alpha=\alpha$ is infallible in normal environments but fallible in abnormal environments.
- e. Because of 1. and 2.a., pairing of different instances of the same type is warranted *a priori*.
- f. Such pairing is fallible, self-evident and uninformative only relative to a presupposition of environmental normality.
- g. The ratification of certain arguments, and inferring of a subset of those, is warranted or knowledgeable *a priori*, is self-evidently correct only relative to presupposition of normality, and infallible, in part because of 2.c.
- h. Representations of the form $\alpha=\beta$ may lack all of the properties specified in 2.b..

Structure of Millikan's Argument

I will discuss two groups of Millikan's arguments — arguments against an anti-individualistic version of Simple Fregeanism, and arguments in favor of her view of identity sentences. Now, since I am not advocating Simplistic Fregeanism, her arguments against anti-individualistic Simplistic Fregeanism are not formulated to criticize my position. The choice here is between anti-individualistic Moderate Fregeanism and Millikan's radical Anti-Fregeanism. So the questions before us are, to what extent do Millikan's arguments against anti-individualist Simplistic Fregeanism also tell against anti-individualist Moderate Fregeanism? And how strong are her arguments for radical Anti-Fregeanism as the preferred alternative to anti-individualist Simplistic Fregeanism?

Millikan's Arguments Contra Simplistic Fregeanism

Supposed Flawed Fregean Assumptions about Identity Cognition Orientation

Three of Millikan's arguments, one from "White Queen" and two from *On Clear and Confused Ideas*, concern the representation of, judgments about, and inferences involving,

identity. I will address these arguments first, since a certain picture of conceptual capacities is the crux of the Moderate Fregean's reply to all three of these arguments.

Millikan: Fregeans Assume Semantic Individuation of Explanatory Properties

Assumes Semantic Individuation

The first argument is from "White Queen". It consists of a criticism of the argument from Frege's Puzzle cases to Fregeanism. In brief, Millikan charges that the argument illicitly assumes that *semantic* properties are the explanatorily relevant properties. A Frege's Puzzle case is any case in which we have two pairs of representation-instances, all the representation-instances represent the same entity, and the two pairs have different cognitive properties. The Fregean hypothesizes that the cognitive differences are explained by intentional differences: the members of one pair of representation-instances are of the same type while the members of the other are of different types from one another. Consequently, there are distinct but coreferential intentional types. So, suppose that Esperanza sees a rope. In the first situation, because of the rope's arrangement, all of the visible parts of the rope are represented as part of the same rope. And, one of the rope looks red and the other looks green. Esperanza can justifiably believe, of the rope, that it has a green end and that it has a red end.

Demonstrative-instances relying on the experience and referring to the rope figure in both beliefs. Now, the Fregean argument is addressed to a philosopher who thinks that if two intentional instances corefer and are not structurally different, then they are of the same intentional type. So the Fregean's opponent holds that the two instances referring to the rope are of the same type because they are structurally identical and corefer. The Fregean agrees that the two instances are of the same intentional type (though he has a very different view of what the intentional type is). So it is common ground between the Fregean and his opponent

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that those different representation-instances are of the same intentional type. Then, Esperanza might warrantably believe, on the basis of experience alone, α has a green end and α has a red end, where the α -instances are singular conceptual demonstrative representations that rely on Esmerelda's perception of the rope and refer to the rope. According to the standard description, the α -instances corefer self-evidently and *apriori*. Consequently, given Esmerelda's rationality, the argument

α has a green end
 α has a red end
 \therefore some rope has a green end and a red end

correctly functions as valid in Esmerelda's psychology. Absent any other evidence, Esperanza could warrantably infer some rope has a green end and a red end. Or, where both α -instances rely on the experience of the rope, $\alpha=\alpha$ is self-evident, uninformative, and *apriori*. In the second situation, Esperanza sees r and both of its ends, but the middle of r is occluded and r is tangled with other ropes. So, in Esmerelda's visual experience, there are distinct perceptual instances both referring to the rope, one relying on stimuli caused by the part of the rope visibly connected to the green end, the other relying on stimuli caused by the part of the rope visibly connected to the red end. Then, Esperanza might warrantably believe, on the basis of experience alone, β has a green end and δ has a red end, where β and δ -instances rely, respectively, on the first and second visual representations tokens referring to the rope. Object variables " x " and " y " can be used without prejudice to the question of whether, on that occasion of use, they have the same value. Just so, I use the different schematic variables " β " and " δ " without prejudice to the question of whether or not they have the same value — which in this case would be the same intentional type. Esperanza would be warranted in dividing instances of β from instances of δ . Consequently, given Esmerelda's rationality, the argument

β has a green end

δ has a red end
 \therefore some rope has a green end and a red end

would correctly function as *invalid* in Esmerelda's psychology. Absent further evidence, were Esperanza to infer the conclusion from the premises, the belief in the conclusion would not be warranted. Again, the identity proposition $\underline{\beta}=\underline{\delta}$ is informative, *aposteriori*, and not self-evident.

Pairs of $\underline{\alpha}$ -instances epistemically differ from pairs of $\underline{\beta}$ and $\underline{\delta}$ -instances. The simplest difference is that the coreference of different $\underline{\alpha}$ -instances is *apriori* accessible, while the coreference of $\underline{\beta}$ and $\underline{\delta}$ -instances is not. The moderate Fregean believes that these sorts of epistemic properties are to be explained by intentional properties. So, the moderate Fregean concludes that there is a difference between the intentional type of the $\underline{\alpha}$ -pairs and pairs of $\underline{\beta}$ and $\underline{\delta}$ -instances. The moderate Fregean concludes that $\underline{\beta}$ and $\underline{\delta}$ are different intentional types, where intentional types have the properties discussed above under the heading of moderate Fregeanism. Millikan's first argument criticizes drawing this conclusion. In "White Queen", she writes

"Frege's argument assumes exactly what needs to be proved. It assumes that if some sentence "A is B" is to effect a change in one's cognitive processes, this could occur only because it effects a change in one's bank of information. That is, psychological processing of cognitive materials, for a cognitively intact person, is assumed to be governed solely by information content, by the semantic nature of thought. That is exactly the rationalist thesis. What is ignored is the possibility that sentences of the form "A is B" might have a purely psychological function, the function of producing, in the interpreter, a merging or identifying of thoughts previously associated with "A" and with "B". (335)⁶³

Here Millikan puts the point in terms of epistemic and cognitive differences between linguistic expressions rather than epistemic and cognitive differences between thoughts. She formulates it more directly in terms of the mind in *Ideas*:

"Frege's second move is continually rehearsed in the literature. *Cicero is Tully* is an informative thought whereas *Cicero is Cicero* is not, so these thoughts must have different contents. But, quite transparently, that begs exactly the question at issue. Of course the thoughts corresponding to "Cicero"

⁶³ Millikan's Footnote 29 reads "For a more complete formulation of this position, see LTOBC, chap. 12, and Millikan, forthcoming. For compatible remarks about the function of "exists," see LTOBC, chap. 12." ("White Queen", 335)

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and "Tully" are *different*, at least for some people, or they couldn't move these people's minds differently. Their causal action on these people's minds is not the same, so clearly they are mediated differently. The question is whether their *contents* must be different in order for this to be so. Might they not differ instead, as it were, merely in notation, in vehicle?" (132)

According to Millikan, the Fregean argument is as follows.

1. Pairs of coreferring representation instances causally differ from one another.
2. So the different pairs properties differ in some causally relevant way.
3. And, representations can have different causally explanatory properties while coreferring.
4. The causally explanatory properties are intentional properties.
5. Therefore, there are causally explanatory intentional properties such that different representations can differ with respect to them but have the same reference.

According to Millikan, the Fregean simply asserts 4. without argument. This, she says, begs the question.

Answers to Assumes Semantic Individuation Argument Misdcribes Explananda

I think that Millikan's criticism has several problems. First, the criticism misdescribes those differences which, the Fregean concludes, are best explained by intentional differences. The Fregean appeals, not just to causal differences, but to epistemic and perspectival differences. In some cases but not others, the representations' coreference is *apriori* and trivially accessible and the identity statement linking them is uninformative. One difference to be explained has to do with how things seem, from the thinker's perspective, when entertaining the representations. This means that the Fregean does not assert 4. Rather, the Fregean asserts something like

- 4*. The properties explaining the difference in how things seem to the thinker are intentional properties.

How things seem to the thinker is a representational fact. So the natural sort of property to explain it is an intentional property. The Fregean can go on to assert

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5*. If there is a difference in intentional properties between representations, and those representations also differ causally and epistemically, then the difference in intentional properties explains the causal and epistemic differences.

Now in my view, 4* and 5* are *prima facie* plausible. So even if the Fregean had nothing more to say in response to Millikan's criticism, the Fregean could at least claim that they were asserting plausible premises. But in fact, as we shall now see, the Fregean has rather more to say than that

In fact, while Millikan's question may be motivated in the case of linguistic Frege's Puzzle, it is not so well motivated in the case of conceptual Frege's Puzzle cases. In the paradigm linguistic cases, different linguistic expressions occur in the cases in which there is logically guaranteed and apriori accessible coreference and those cases in which there is not. Specifically, in the first case, the different coreferring expressions are phonetically or orthographically type-identical, whereas in the second case they are not. So, there is at least the *prima facie* question, why not think that phonetic/orthographic identity or difference is the explanatory feature?. Indeed, in the quoted text above, Millikan talks about linguistic expressions — sentences and singular terms. However, this is out of place, since the issue is Frege's Puzzle in thought, not in language. Now, thoughts obviously have intentional properties. However, it is not obvious what *other* properties of thoughts could explain the differences highlighted in Frege's Puzzle cases. One might posit the existence of a language of thought, or some other broader notion of a "thought-vehicle", a property or entity associated with a thought that is not semantically individuated but whose type-identities and differences correspond with the epistemic phenomena exposed in Frege's Puzzle cases. However, positing such a syntactic system of properties of thoughts, corresponding to their intentional properties, requires motivation, which Millikan does not provide.

Millikan's question can be answered in favor of the Fregean

Millikan's question can be answered in favor of the Fregean. Millikan is correct that the argument from the Frege's Puzzle cases presented above does not conclusively and definitively establish that it is the thought's intentional properties that produce the epistemic differences. However, there is a battery of reasons to think that intentional properties are indeed the explanatorily relevant ones. Before discussing these, I should note that, in this particular argument, Millikan accepts that there are logical and epistemic differences between the two cases. Specifically, $\underline{a}=\underline{a}$ is acknowledged to be a logical truth while $\underline{\beta}=\underline{\delta}$ is not. Different instances of \underline{a} have a logical guarantee of coreference while instances of $\underline{\beta}$ and are not logically guaranteed to corefer with instances of $\underline{\delta}$. And, the coreference of \underline{a} -instances is *a priori* accessible and indeed informative, while the coreference of $\underline{\beta}$ and $\underline{\delta}$ is not.

Off the Point

A major problem with Millikan's criticism is that it is somewhat off target. As previously cited, Millikan claims that "exactly the question at issue is whether or not causal differences can be explained in terms of non-intentional differences." In light of the earlier point that Millikan has misdescribed the Fregean explananda, we should rewrite this to "exactly the question at issue is whether or not causal, *epistemic*, and *perspectival* differences can be explained in terms of non-intentional differences".perspectival But that is not exactly the main question that is at issue for Frege. It is true that the Fregean conclusion concerns causally, epistemically and perspectivally relevant intentional properties: they are individuated more finely than reference, in the sense that different structurally identical intentional properties can have the same reference. And it is also true that in the argument from Frege's Puzzle, it is simply asserted that intentional properties are the ones relevant to the epistemic,

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causal, and perspectival differences. But the point of the Frege's Puzzle argument is not to establish that intentional properties are relevant in those ways. It is to establish, given that intentional properties are relevant, which intentional properties are the relevant ones.

Roughly, are they properties concerning just the subject-matter of the representations? Or are they some other intentional properties, having to do with the way in which the subject-matter is represented?

So Millikan is correct when she asserts that the Fregean's appeal to Frege's Puzzle cases does not establish that intentional properties, and not, *e.g.*, orthographic or phonemic properties, are epistemically explanatory. But she is wrong to suggest that this begs any question. As we saw, there is some *prima facie* plausibility to the claim that intentional properties explain the causal, epistemic, and perspectival differences in Frege's Puzzle cases, because, first, there is a perspectival and hence representational difference and, second, that representational difference is suited to explain the causal and epistemic differences.

It is particularly unfair to charge *Frege* himself with ignoring the possibility of explanation in terms of orthographic or phonemic differences and simply assuming that some epistemic differences are to be explained in terms of intentional differences and. Frege's main article establishing the sense/reference distinction is "Über Sinn und Bedeutung".⁶⁴ Even though the main concern of that article is not the question of which kind of properties are epistemic relevant Frege *does* provide an argument that orthographic differences do not

⁶⁴ In 'Über Sinn und Bedeutung', Frege does not use quite our terminology, but one *main* point of that article was to establish that the relevant intentional properties were ones individuated more finely than reference. In normal German usage, 'Bedeutung' and 'sinn' are German words that, in normal usage, respectively mean meaning and sense (Beaney 37). However, for Frege, 'bedeutung' is a term of art, and bedeutungen are, roughly, the *subject-matter* of linguistic and conceptual representations. And *sinn* are explained as modes of presentation of bedeutungen.

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explain the phenomena of his puzzle. Nonetheless, in “Über Sinn und Bedeutung” itself,

Frege writes

“Nobody can be forbidden to use any arbitrarily producible event or object as a sign for something. In that case the sentence $a = b$ would no longer be concerned with the subject matter, but only with its mode of designation; we would express no proper knowledge by its means. But in many cases that is just what we want to do. If the sign ‘ a ’ is distinguished from the sign ‘ b ’ only as an object (here, by means of its shape), not as a sign (i.e. not by the manner in which it designates something), the cognitive value of $a = a$ becomes essentially equal to that of $a = b$, provided $a = b$ is true.” (Frege “USB”, rpt. in Beaney, 152; no quotation marks on ‘ $a = a$ ’ or ‘ $a = b$ ’ in source text).

Here Frege argues that, when we know $\underline{a=b}$, we *acquire* knowledge beyond $\underline{a=a}$ — the propositions differ in informativity. And he argues that, because the meanings of signs are arbitrary, the informativity of $\underline{a=b}$ cannot be explained in terms of them. Now whether or not one agrees with this argument, Frege *provides an argument*. While the main question at issue for him is not Millikan’s, he does address her question of why intentional properties are the ones to explain cognitive and epistemic phenomena in Frege’s Puzzle cases.

Now, I am not certain about the soundness of Frege’s argument from linguistic arbitrariness. Frege’s corpus is quite large and this is not a historical project, so I am not going to explore his texts for other arguments for the conclusion that intentional properties explain the cognitive and epistemic phenomena in Frege’s Puzzle cases. Instead, I am now simply going to present what I think is a very strong consideration in favor of that conclusion.

Systematicity of Thought-Production

I will begin with an example. If Esperanza can think one thought about x , she can think many. She has an ability to think about x . This ability is exercised in the course of thinking thoughts, whose intentional types are propositions. The ability produces part of the intentional type, one which refers to x . It is an intentional property of a belief produced by that ability that it was produced by that ability. Now, in the first case, Esperanza acquires from her experience one ability to think of r . And she exercises this ability in thinking all of

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her thoughts about r — that it is self-identical, that it has a green end, and that it has a red end. In the second case, Esperanza acquires from her experience two abilities to think of r . One ability produces, first, the representation-instances in the belief, of r , that it is has a green end and, second, one of the representation-instances in an identity belief about r . The other ability produces, first, the representation-instances in the belief, of r , that it is has a red end and, second, the other representation-instance in that identity belief about r . In the first case, all of the instances produced by the one ability logically corefer with one another and have *apriori* accessible coreference. In the second case, all of the instances produced by either ability logically corefer with the other instances produced by *that same ability* and that logical coreference is *apriori* accessible. But, when the two instances are produced by the different abilities, they do not *logically* corefer and that coreference is *not apriori* accessible. So, for any two coreferring instances, the same ability produces the instances iff the coreference is logically guaranteed and *apriori* accessible. Furthermore, the abilities are already epistemically relevant. So, there is an ability that is guaranteed to produce the necessary semantic feature — coreference, which is epistemically relevant, and which marks the thoughts on which it is exercised. The Fregean takes the Frege's Puzzle cases to show that these abilities, their products and their types are epistemically relevant. That is, we have reason, *independent of the epistemic and logical differences between the cases in a Frege's Puzzle pair of cases*, to believe in certain abilities. The Frege's Puzzle case requires an intentional type that guarantees coreference and is epistemically relevant. This ability — for which there is *independent evidence* — fits the Frege's Puzzle bill.

It is not just a coincidence that our capacities to think about objects can explain Frege's Puzzle cases. It is part of the representational function of an ability to think about x

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that it produce correct pairing involving x -thoughts. Rationality places many requirements on an ability to think about a particular object x . It requires that one can think multiple thoughts x . It requires that different x -instances can represent the identity of their subject-matter. It requires that one can correctly combine in reasoning the different x -thoughts produced by that ability, as thoughts about the same entity. And one must be able to do so without further reasoning, experience, or acquisition of other cognitive capacities. An ability to conceptually represent x is an ability to think about x . And the requisite thinking is not just entertaining different propositions representing x . The thinking includes different x -thoughts representing their partial identity of subject-matter and successfully paired with one another. In other words, it is individuating of an ability to think about x that it produce such representation and enable such pairing. An ability would not be an ability to conceptually represent x if the thoughts it produced did not represent the identity of their subject matter or did not pair with one another.

I conclude that, while Millikan is correct that appeal to the Frege's Puzzle cases does not directly support the contention that the finer-than-reference-explanatory properties are intentional properties, there is strong reason to think that those properties are intentional properties.

Millikan: Fregeans Conflate Identity of Representational Type and Representation of Referential Identity

Her Argument

In *On Clear and Confused Ideas*, relations between representations r_1 and r_2 , and between what they represent, are distinguished from representation of those relations. Millikan argues that Fregeans are guilty of confusing sameness of representation with representation of sameness. Here examples involving relations besides sameness are helpful. One example

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involves temporal relations. There is obviously a difference between the temporal order of the occurrence of *representations* of two events, and the temporal order of the events. In an archeological dig, one typically first forms beliefs about events and states of affairs occurring later in the history of one's subject, because the residue of those events is on top of the residue of earlier occurring events. As one digs, and time passes, one acquires representations of earlier events. So, the archaeologist first acquires representations of later events, and later acquires representations of earlier events. In this case, there is no temptation to conflate the temporal relations between the representations with the temporal relations that are represented as holding between the historical events. Millikan argues that in theorizing about certain perceptual cases, philosophers can often be found making this mistake. According to Millikan there are cases with the following features.

1. At t_1 , a thinker acquires a representation r_1 of an event e_1 occurring slightly before⁶⁵ t_1 .
2. At t_2 , a thinker acquires a representation r_2 of an event e_2 occurring slightly before t_2 .
3. At t_2 and subsequently, using r_1 and r_2 , the perceptual system represents e_2 as occurring *before* e_1 .

According to Millikan, some philosophers, in thinking about time and perception, have not allowed that 3 is possible given 1 and 2. And according to Millikan, this is because they have failed to distinguish the temporal relations between the occurrences of r_1 and r_2 from the temporal relations that are represented as holding between the events represented by r_1 and r_2 .

According to Millikan, Fregeans have made a similar mistake. The Fregean thinks that identity of representation-type suffices for representation of identity. The Fregean thinks this,

⁶⁵ Slightly before, as opposed to at, because it takes time for the event e_1 to affect the perceptual system and the perceptual system to generate the representation r_1

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Millikan charges, because the Fregean has conflated identity of representation-type with representation of identity of referent.⁶⁶ Millikan attributes this error to Frege, Peacocke, and Evans (§§9.2-3). Her brief discussions of Evans and Peacocke notes that each infers from identity of representation-type to representation of identity. But merely drawing such an inference does not mean that one has *confused* identity of representation-type and representation of identity. It just means that one thinks that, at least in some situations, the former suffices for the latter. She then engages in an extended discussion of Frege. I find the discussion somewhat confusing. The discussion does not cite Frege. It in fact begins with the footnote “I am no Frege scholar. I speak here to the understanding philosophers have mostly had of Frege, not to his texts”. However, she later claims “What happened in *Frege’s* mind is clearly documented” (132, her emphasis). Millikan does explain how the confusion could lead to Fregeanism, and how it *could* have motivated Frege. But she provides no textual support for attribution of confusion to *any* of Peacocke, Evans, or Frege. And as far as I can tell, she does not argue that the *only* way to establish a Fregean conclusion is *via* such a confusion.

2 Replies to Her Argument

My Argument Did Not Make This Assumption

No Fregean must or should conflate the identity of representation-type with representation of identity of referent. My argument of the previous section demonstrates as much. There I argued that it is a function of a conceptual representational ability to produce instances that represent their identity of their referents with one another. I claimed that abilities have this function because it is necessary for minimal rationality. Since

⁶⁶ In leveling this charge, Millikan uses her own terminology, using her terms of art “sameness” and “markers”. I do not see that the terminological change is relevant. But if it is, that is to the detriment of her argument. The picture here on offer uses the terminology of identity, representation, representation-type, and representation-instance. If Millikan’s argument is set back by this terminology, that means that Millikan’s argument is less effective against pictures using that terminology.

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representation-instances are typed at least partially by the ability that produces them, those representation-instances are of the same type. Hence, conceptual representational instances of the same type represent the identity of their referents. Here there is no assumption that identity of representational type entails representation of identity.

Representation of Identity depends on Structures and Functions of Implicated Representational Abilities

Indeed, the argument of the previous section allows for a representational type whose different instances do *not* represent the identity of their respective referents. I claimed that to be *rational* one needed to be able engage in a certain kind of *reasoning*, *viz.* pairing of representation-instances that coreferred. I claimed that one needed to be able to do so *apriori* and trivially. I observed that because the ability to refer to a particular object is guaranteed to refer to that object on any occasion, immediate sensitivity in reasoning to sameness and difference of referential ability paid the bill charged by the reasoning constraints. I did not, however, argue that a thinker necessarily *need* be sensitive to the fact that two instances are produced by the *same* referential ability. And it is consistent with my argument that there be representational abilities whose possessors are not sensitive to that sameness and difference.

Consider a perceptual attributive ψ that represents squareness and singular perceptual representations \underline{a} and \underline{b} that refer to a and b . Suppose that the perceptual system attributes squareness to both a and b by combining instances of ψ with \underline{a} and \underline{b} . In one sense, the perceptual system represents a and b as having the same shape, since being square is attributed to both. However, there is also a two-place relation being the same shape as, which holds of x and y iff x and y have the same shape. Now, can the perceptual system in question

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represent the same-shape relation? Without more information about the perceiver's abilities, I do not think we can say.

The difference between being able to attribute a given shape to different objects and being able to attribute the relation *is the same shape as* can be highlighted by contrasting two learning exercises. In the first, pushing a square button produces food and pushing a circular button produces water. Suppose that the animal with the perceptual system could learn that pushing a square button produces food and that pushing circular buttons produces water. Now consider a slightly more sophisticated learning task. Suppose that the animal can differentially respond to several different shapes, and that at different times, one or another of these shapes is projected onto a screen in the animal's cage. If the animal pushes the button that is the same shape as the then-projected figure, the animal gets food and water. Pushing any other button has no result. So, the animal needs to learn that it can obtain food and water by pushing whichever button is the same shape as the figure. I see no reason to think that every animal that can succeed at the first task can succeed at the second task.

I do not see that an animal that can attribute one shape to different objects must also be able to attribute the relation *is the same shape* to pairs of those objects. So, one can be a Fregean while accepting the possibility and actuality of identity of representation-type that does not represent identity. One need not be so confused as Millikan suggests.

Now, in *Origins of Objectivity*, Burge argues persuasively that one of the distinctions between non-representational sensation and representational perception is that perception involves perceptual constancies but mere sensation does not. Examples of perceptual constancy include: representing a coin as a circular disc while the coin rotates and the distribution of its effects in the visual field changes from circular to elliptical; representing an

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object as having a certain size as it moves away and its effects in the visual field shrink; representing an object as a certain shade of grey as the lighting changes. In all of these cases, the same perceptual attributive ability responds to quite different effects, and the same property is attributed as a result of those effects. So, to perceptually represent at all, there must be some properties each of which a perceptual system can ascribe to multiple objects and each of which a perceptual system can ascribe on the basis of a range of proximal stimuli. But there need be no representation *of* sameness, only representation of the same property. Again, it may be necessary that different instances of the same representation have similar cognitive effects, *e.g.*, whenever an object is represented as having length l and one reaches for the object, one's index finger is always length m from one's thumb. But the fact that different instances of a given representational type can produce the same type of result does not entail that there is representation of identity. Rather, depending on the structure of psychological abilities, type-identity may or may not represent identity of referent.

Indeed, it is an interesting and open question at what degree of cognitive sophistication different representation instances of the same type represent the identity of their representata. A Fregean can recognize this. A related question of interest is: once a mind is capable of representing identity, to what degree must it be sensitive in its cognition to sameness and difference of intentional type of pairs of representations?

Millikan: No Content to Identity-"Judgments"

Millikan's Identity Cognition Argument

Millikan's final structural argument against Fregeanism is her most radical; she argues against the Fregean by arguing directly for radical anti-Fregeanism. Millikan accuses the Fregean of projecting the structure of a public formal language onto thought when thought

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actually lacks this structure. And, she thinks that the characteristic Fregean distinctions — between different modes of presentation of the same object, and between the different kinds of epistemic and semantic relations that hold between instances of the same mode presentation and those that hold between instances of different modes of presentation — are legitimate only if this projection is correct. Now Millikan argues that thought lacks several features of public formal languages. I will confine this discussion to what I take to be her core argument against Fregeanism.

Millikan's core identity-cognition argument runs through her radical view of identity cognition. Her coidentification notion is involved in the statement of that view as well as the argument for it. I will discuss that notion in a little more depth than I did previously, restate her radical view of identity-cognition, present her argument for that view, and then criticize the argument.

Definition of Coidentify

Millikan's first definition of coidentification is as follows.

In an act of coidentifying, two representational vehicles are employed together in a manner that assumes, that is, requires for correctness, an overlap or partial identity in content, thus effecting an act of reidentifying of content....

For a perceiver or cognizer to [coidentify]⁶⁷ something JUST IS to be disposed, or for some subsystem of theirs to be disposed, to pair representations of that thing in perception and/or thought as a middle term for mediate inference, or other amplificatory information-processing, and/or for guiding action. (*Ideas* 144)

Now, by 'content', Millikan is talking about a representation's *subject-matter*, the "Millian content" discussed in the previous chapter on Boghossian. We have been using 'content' to refer to those intentional properties of a mental state that figure in explanations of cognition.

⁶⁷ In the text, Millikan has 'reidentify', not 'coidentify'. But Millikan identifies reidentification and coidentification in the sentences immediately preceding the beginning of this quotation. She writes "Described on the level of content...we call these "acts of identifying" or "reidentifying." Described on the level of the vehicles or mental bearers of information involved, we can call them acts of "coidentifying." (*Ideas* 144).

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So Millikan is using 'content' in a very different way than we are. Millikan subsequently slightly narrows the definition of coidentification, requiring that it be caused by

"some kind of indication in the initial or "premise" representations of where sameness of reference is occurring. It must result from a system or systems of sameness marking in perception and thought."
(*Ideas* 144)

This definition of 'coidentification' resembles, but importantly differs from, our explication of pairing. Pairing does require, for its success, identity of content and identity of reference if any. So any pairing is a coidentifying. But there are coidentifications that are not pairings.

Consider the argument

Esperanza plays the bass
Esperanza is Ms. Spalding
Ms. Spalding is unmarried
∴ Esperanza plays the bass and is unmarried.

Pairing occurs in rational acceptance of this argument, between the two instances of Ms. Spalding and between the three instance of Esperanza, but not between any instance of Ms. Spalding and any instance of Esperanza. But the Esperanza in the first premise and the Ms. Spalding in the third premise are coidentified. For those representations are "employed together in a manner that assumes...identity in" subject-matter, *viz.* referent. The coidentification between different Esperanza instances is quite different from the coidentification between the Esperanza instances and the Ms. Spalding instances. The former coidentification does not rest on any evidence, empirical or *apriori*. No substantive reasoning is involved in its production. If there is any evidence that could lead to withdrawal of the coidentification, it would be evidence that the thinker's reasoning capacities were failing. The different Esperanza instances behave, in the thinker's reasoning, in ways whose correctness is explained by their logically guaranteed coreference. The coidentification of Esperanza and Ms. Spalding instances is causally dependent on Oscar's belief Esperanza is Ms. Spalding.

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That belief, if rationally acquired, is supported by evidence. Substantive reasoning could produce it. And there is lots of evidence that could lead to the belief's revision. So, there are substantive differences between different varieties of coidentification: the cognitive properties of pairing are quite different from the coidentification produced by identity beliefs.

Millikan's Radical View of Identity Cognition.

We can now turn to Millikan's view of identity cognition, which is as follows. There are no identity judgments, for there is no intentional type representing the identity relation. Asserting ' $\alpha=\beta$ ' causes the coidentification of instances of α and β . And the structure of the vehicles of representation changes. There is one type of vehicle of singular representation, γ , that occurs wherever there was an instance of either α or β . γ may be α , β , a new type α -or- β , or an entirely new type. Consequently, the distinct bodies of $\underline{\alpha}$ -thoughts and of $\underline{\beta}$ -thoughts merge into one body of $\underline{\gamma}$ -thoughts. So before there were two separate bodies of thoughts, one with all the thoughts using the $\underline{\alpha}$ vehicle and the other with thoughts using the $\underline{\beta}$ -vehicle. Different members of one body functioned in reasoning as about the same entity, but did not so function in relation to members of the other body. After the change, there is only one body of thoughts, created out of the two old bodies made up all the thoughts produced by replacing either $\underline{\alpha}$ or $\underline{\beta}$ vehicle instances with $\underline{\gamma}$ vehicle instances. And, assertions⁶⁸ of identity sentences and internal assertions of identity-vehicles are not the holding-true of a certain proposition. Instead, the assertion of ' $\alpha=\beta$ ' merely serves the important functional role just specified, to merge coidentificatory bodies of thought.

⁶⁸ On Millikan's view, the identity symbol does not represent the identity-relation, so identity sentences do not have truth-conditions. One might think an assertion is necessarily assertion of the truth of something with truth-conditions. If that were correct, then on Millikan's view, identity-sentences could not be asserted, since they do not have truth-conditions.

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I am first going to explain why this radical view of identity cognition is incompatible with Fregeanism, then present Millikan's argument for the view, and finally criticize that argument.

Incompatibility of Fregeanism & Radical View of Identity Cognition

The main clash between Millikan's radical view of identity cognition and Fregeanism concerns the impossibility, given that view, of any entity playing both of two of the roles required by Fregean modes of presentation. The first role is logico-semantic: different instances of the same mode of presentation are guaranteed to corefer (if either refers to anything). The second role is epistemic: sameness and difference of the type of different mode of presentation instances is *apriori* accessible. Because of these two features, the pairing of two mode of presentation instances of the same type can have *apriori* warrant.

The tension between Fregeanism and Millikan's view, according to Millikan, is found in the latter's view of the results of mistaken identity judgments. So, suppose that α and β are differently referring thought-vehicles, respectively referring to a and b , and that Dizzy mentally asserts " $\alpha=\beta$ ". On the radical view, the result is that there is a singular representation vehicle γ , and all of the predicates combined with either α or β are combined with γ . According to Millikan, γ 's reference is equivocal between a and b : some of the instances of γ refer to a while others refer to b . We are not here considering different and unrelated instances of indexical or demonstrative vehicles analogous to the English phrase 'that bird'. Rather, we are considering, for example, different instances of vehicles analogous 'water' or 'gold', words whose reference is not sensitive to the context of particular instances. Dizzy will mistakenly pair these different, differently referring, instances of γ with one another. For from his perspective, all the instances of γ refer to the one entity which α and β supposedly referred to.

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And Dizzy does not have the *apriori* cognitive resources to discover that some of the ρ instances refer to a while others to b . So, there is no *apriori* accessible entity whose type-sameness determines sameness of reference. Unfortunately, Millikan does not provide examples to substantiate her claim that ρ refers equivocally.

Although Millikan does not point this out, if she is correct about ρ 's equivocal reference, then singular representational vehicles resulting from mistaken identity judgments are not the only locus of contradiction between Fregeanism and the radical view of identity cognition. Recall the case in which Oscar is unknowingly switched from Earth to Twin Earth. Oscar first interacts with tigers and, let us suppose, uses vehicle α to represent the species tiger and to mean tiger. After Oscar goes to Twin Earth, he interacts with tiggers without distinguishing them from tigers. Then, old and new instances of α will have substantial causal relations to tiggers. So, there is a body of thoughts, those in which α figures, whose members are substantially causally connected to tigers, tiggers, or both. So, it could be that α -instances refer equivocally, some to tiggers, some to tigers, some to both. That is at least possible if not likely. If Millikan is correct about that mistaken identity judgments result in equivocally referring vehicles. Again, consider the jade-case. Thinkers mistakenly believe the instances of jadeite and nephrite in their environs to be instances of one natural kind. As usually described, this results in the thinker's grasping one concept, jade, which refers to both jadeite and nephrite, *i.e.*, the kind jade. Now, Millikan thinks that a mental vehicle-type can refer equivocally. If she is right, then perhaps there is one vehicle-type α , some of whose instances refer to jadeite, others of which refer to nephrite, and others of which refer to both jadeite and nephrite. If, as I believe, all instances of a purported natural kind concept corefer, then the thinker would have two different natural kind concepts, one referring to jadeite, one to

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nephrite, and a kind concept referring to both. Millikan, however, might be willing to countenance equivocal concepts, and prefer to describe the case as one in which the thinker has one concept whose different instances differ in which of the minerals they refer to.

It should be noted that the claim that vehicles can refer equivocally does *not* follow from the radical view of identity cognition. For the radical view of identity cognition makes no claims about how reference of singular representation vehicles is determined. But, I will grant Millikan that vehicles can refer equivocally claim, both for the purposes of argument and also because, *if* the content/vehicle distinction were a legitimate one and used to describe the switching cases, the switching cases would probably exemplify a case of an ambiguous vehicle. However, as the jade case demonstrates, the possibility of equivocally referring *vehicles* does not entail the possibility of equivocal *concepts*. The differently referring instances of the one vehicle could express distinct, differently referring, concepts.

Millikan's Argument for the Radical View

So, let us consider Millikan's argument for the radical view of identity cognition. I will quote at length the section in which the argument is presented.

Whatever the individual mind/brain treats as the same mental word again IS the same word again. For mind-language there are no conventions — there is only the private user. Nor is there any reason why mental typing should not evolve in an individual mind or brain over time. If the private user changes her habits, then the typing rules for her mental representations will change. This is because the typing rules ARE nothing but her dispositions to coidentify.

For the mind, there is also no distinction like that between an identity axiom or postulate, $A = B$, written at the top of the page, and a typing rule. For [in the mind] there is no distinction like that between what is written on the paper and what is written in the structure of the reader — in the structure responsible for conforming the reader's reactions to a certain typing rule. One structure responsible for brain coidentifying patterns is on a par with any other; all are equally "written" in the brain.... Whether the mechanism in the mind effects only that the mental *Ciceros* get coidentified with the mental *Ciceros*, or also that the mental *Ciceros* get identified with the mental *Tullys*, this mechanism is no more or less of an extra postulate one way than the other.... Marking sameness [of vehicle type], however that's done, and fixing identity beliefs is exactly the same thing.

Thus if we think carefully about the effects of an equals marker on the system that understands it, the distinction between it and a Strawson marker collapses. What effect are we to imagine mental *Cicero* = *Tully* to have if not, precisely, that it changes the mind's dispositions to mental typing? Henceforth, mental *Cicero* and mental *Tully* will behave as representational equals. They become the same mental word, that is, they are ready to be coidentified. But if this is so, the mental equals marker behaves

exactly like a Strawson marker. It merges two thought types into one, threatening equivocation in thought, and doling out to each thinker just one mode of presentation per object. (*Ideas* 167; her emphases)

The basic argument is quite simple:

1. Asserting a mental identity sentence ' $\alpha=\beta$ ' changes the thinker's coidentification dispositions, from coidentifying different α instances with one another, and β instances with one another, but not α instances with β instances, to coidentifying α or β instances with one another.
2. A thinker's coidentification dispositions determine vehicle type: two vehicle instances are of the same type iff the thinker is disposed to coidentify them.
3. Therefore, if a thinker mentally asserts a mental identity sentence ' $\alpha=\beta$ ', then instances of α and β become instances of the same vehicle type.
4. Therefore, ' $\alpha=\beta$ ' does not express a proposition.

Now, I do not think it is clear that 4. follows from 3. However, as we have seen, 3. already appears to be inconsistent with Fregeanism, so a defense of Fregeanism requires rejection of the argument from 1. and 2. to 3. I think the argument can be rejected — in my view, 2. is false, as I will now argue.

4. is false - Frege/Geach

The basic argument against 2. was hinted at in my discussion of the similarities and differences between the pairing relation and the coidentification relation. Every instance of pairing is an instance of coidentification. But, as we saw, not every instance of coidentification is an instance of pairing. And, as I will argue, it is pairing in particular, and not coidentification in general, that is, in general, equivalent to sameness of type. Criticism of 4., that identity sentences do not express a proposition, will help us see why it is important that there are different kinds of coidentification, not all of which suffice for type-sameness.

Millikan's view of mental identity-sentences is similar to many expressivist views of moral language. On those views, morally evaluative sentences, such as " α is permissible" or " α

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is bad” do not express propositions. Rather, they express some other attitude; on the crudest version of expressivism, they express the speaker’s like or dislike of *a*. The prominent Frege-Geach objection to expressivism is as follows.⁶⁹

1. Moral sentences can be embedded in larger sentences, such as “If α is allowed by the categorical imperative, then α is permissible”
1. Such sentences express propositions and have truth-conditions.
2. Their truth-conditions and the propositions they express are compositionally determined.
3. Compositional determination of a complex sentence’s truth-conditions and of the proposition it expresses requires each of its constituent sentence to have truth-conditions and express a proposition.
4. \therefore Moral sentences do express propositions and have truth-conditions.

This is not merely a technical objection to expressivism. The larger sentences in which simple moral sentences embed have great moral significance: they are a medium for moral reasoning.

Millikan’s view that identity-sentences lack meaning suffers from the same problem as do expressivist views of moral language. We reason about identity and we do using identity propositions, both bare and embedded in other propositions.

Millikan briefly considers embedded identity sentences, by considering the negations of identity sentences. However, she only considers the possibility that negations of identity sentences would be used to undo the retyping she claims occurs as the result of an assertion of an identity sentence. She asserts that such reversals would be rare and very difficult, and consequently that no account needs to be given of their meaning (168). In my view, her support for this assertion is weak. But we need not consider that support, since she neglects to consider other embeddings and other uses of negated identity sentences. Consider the following situation. Mia is climbing El Capitan. She knows that rope is the only rope attached to the rock. She can thereby infer if this rope is that rope, then this rope is attached to the wall

⁶⁹ The formulation of this point is attribute to Geach’s papers “Imperative and Deontic Logic”, “Ascriptivism” and “Assertion”, as well as Searle’s “Meaning and Speech Acts”.

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and if this rope is not that rope, then this rope is not attached to the wall. Being thousands of feet off of the ground, these sentences are of great interest to Mia. For, by determining which sentence's antecedent is correct, she can determine whether or not weighting that rope would be relaxing or fatal. Mia may correctly conclude this rope is not that rope, and then infer this rope is not attached to the wall. Here, the negated identity sentence does not serve to *undo* a mistaken coidentification. At first, Mia was *agnostic*; having the ability to entertain the distinct representations this rope and that rope did not incline her to reason as if this rope and that rope had *distinct* referents. She then used the negated identity proposition to come to the conclusion not to weight the second rope. Insofar as Millikan's view of identity sentences cannot account for the meanings of the propositions in question or the reasoning involving them, that view is false.

Different Kinds of Coidentification Dispositions

The Mia example can also be used directly to demonstrate the falsity of 2, which, it will be recalled, is:

2. A thinker's coidentification dispositions determine vehicle type: two vehicle instances are of the same type iff the thinker is disposed to coidentify them.

Now, the above-cited section actually contains something of an argument for 2.

Whatever the individual mind/brain treats as the same mental word again IS the same word again. For mind-language there are no conventions — there is only the private user....[In the mind] there is no distinction like that between what is written on the paper and what is written in the structure of the reader — in the structure responsible for conforming the reader's reactions to a certain typing rule. One structure responsible for brain coidentifying patterns is on a par with any other; all are equally "written" in the brain....Whether the mechanism in the mind effects only that the mental *Ciceros* get coidentified with the mental *Ciceros*, or also that the mental *Ciceros* get identified with the mental *Tullys*, this mechanism is no more or less of an extra postulate one way than the other. (*Ideas*, 167)

This paragraph suggests the following argument:

- A. Normally, vehicle-typing is determined by *some* sort of coidentification disposition.
- B. To the extent that coidentification dispositions differ at all, those differences are not relevant to the relation between those dispositions and vehicle-typing.

- C. Therefore, normally, two vehicle instances are of the same type iff their thinker is disposed to coidentify them.

B. in this argument is the problem. In the passage cited above, Millikan claims, in effect, that the only cognitive effect of an identity judgment is that the thinker is disposed to coidentify the representations figuring in the identity judgment. And she claims that there is no important difference in the coidentification disposition effected by an identity judgment and the coidentification disposition that, according to the Fregean, holds between instances of the same concept or instances of the same occurrence-based conceptual type.

But there seem to be quite evident differences between the coidentification involved in pairing capacities and those involved in beliefs. As we have seen, one can construct many Frege's Puzzle cases directly concerning thoughts, avoiding language. These demonstrate that there are different kinds of coidentifications. There are the uninformative, *apriori* accessible, rationally required coidentifications, of which pairing is an example. Undermining these is very difficult. A thinker sophisticated enough to think about her own logical reasoning capacities and the conditions under which they go wrong might get worked into a rational doubt about a given pairing, believing that her logical reasoning capacities are wildly malfunctioning. It is not clear how else they could be rationally undermined. Identity beliefs, on the other hand, are open to rational support and undermining by all sorts of evidence and reasoning. So to the extent that a thinker is rational, the coidentification dispositions resulting from identity judgments will be very different from the coidentification dispositions that hold between different instances of the same concept or occurrence-based conceptual type.

So, Millikan may be correct about what is "written in the brain" insofar as the both pairing dispositions and identity sentences supervene on neural states. Each can be modified by affecting its neural supervenience basis. However, the *reasoning* and *cognitive* dispositions

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are still different. And, insofar as the causal relations of and among mental states are supervenient on the causal relations of and among their neural supervenience bases, there are neural *differences* between the neural states on which identity beliefs supervene and the neural states on which pairing dispositions supervene. Specifically, the sorts of neural states that can affect the former neural states — those neural states which are the supervenience bases of the cognitive states, structures and capacities which can affect identity beliefs — cannot affect the latter neural states. So, there *is* a difference in the way that different coidentification dispositions are “written in the brain”, insofar as their different neural supervenience bases have different sorts of causal relations with other neural supervenience bases.

We have also seen that there is a difference between the way that identity-propositions and type-sameness represent identity, corresponding to the epistemic and cognitive differences. Identity-propositions can figure as premises and conclusions in reasoning and are embeddable in other propositions. Type-sameness has neither of these properties. Rather, it plays a role in establishing connections *between* propositions.

Millikan: Fregean Requires Internal Coreference Guarantor My Construal of Her Argument

Millikan’s final major argument against Fregeanism, from *On Clear and Confused Ideas*,⁷⁰

Involves explicit appeal to the environmental determination of reference. The criticism of Fregeanism (169-170) is:

1. Suppose a representation’s relations to the environment beyond its thinker’s body, such as causal or information relations, determine its referent.

⁷⁰ Millikan also claims that the Fregean illegitimately assumes that “how a thought functions has no effect on its content. One assumes that how the mind understands its thoughts is irrelevant to their significance.” (168). She does not explain why she thinks the Fregean makes this assumption. She may think this assumption is required to block her argument about coidentification dispositions and vehicle-typing. I have criticized that argument, and have done so in a way compatible with the assumption that there are tight relations between a thought’s cognitive and epistemic roles and its content.

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2. So, whether a thinker (a) thinks a pair of representation-instances that corefer and are instances of the same concept or (b) thinks a pair of representation-instances that do not corefer can depend only on whether or not the members of the pair are causally or informationally related to the same entity.
3. No *apriori* capacity can distinguish between every pair of representation-instances whose members have the same environmental cause as one another or carry the same environmentally determined information as one another and every pair whose members have different environmental causes or carry different environmentally-determined information.
4. Therefore, no *apriori* capacity can distinguish between (a) every pair of representation-instances that corefer and are instances of the same concept and (x) every pair of representation-instances that are not guaranteed to corefer by sameness of conceptual or occurrence-based intentional type.
5. So, no *apriori* pairing capacity can avoid pairing representation-instances that do not corefer.
6. If an *apriori* pairing capacity pairs instances of $\underline{\alpha}$ and $\underline{\beta}$, then $\underline{\alpha}=\underline{\beta}$ is uninformative.
7. If $\underline{\alpha}=\underline{\beta}$ is uninformative, then $\underline{\alpha}=\underline{\beta}$ is rationally unrevisable.
8. So, if an *apriori* pairing capacity pairs instances of $\underline{\alpha}$ and $\underline{\beta}$, then $\underline{\alpha}=\underline{\beta}$ is rationally unrevisable.
9. So, if an *apriori* pairing capacity pairs $\underline{\alpha}=\underline{\beta}$ but $\underline{\alpha}$ and $\underline{\beta}$ do not corefer, then $\underline{\alpha}=\underline{\beta}$ is rationally unrevisable but false.
10. So, if there are *apriori* pairing capacities, there are rationally unrevisable falsehoods.
11. There are not rationally unrevisable falsehoods.
12. So, there are not *apriori* pairing capacities.
13. So, there is no intentional property of representation instances that both guarantees coreference and which can be the basis for *apriori* pairing.

Her Argument Differs from My Construal

Before criticizing this argument, I should note two respects in which it differs from the argument Millikan gives. She writes:

Uninformative identities are so called because they do not inform us of anything not already immediately known *a priori*. Presumably these claims also cannot be false. Frege is not supposing that there might be false identities that we cannot help but affirm. (169)

The last sentence is similar to 9. but the two are not equivalent. A belief is psychologically unrevisable if its revision is psychologically impossible. A belief is rationally unrevisable if its revision is necessarily irrational. A proposition can be rationally necessary without being psychologically necessary: rejecting a rationally necessary proposition is simply being irrational. And a belief can be psychologically necessary but not rationally necessary if its psychological persistence does not depend on the proper functioning of a thinker's reasoning

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capacities. Because our beliefs can be caused and sustained in arational ways, it is not obvious that any belief is psychologically necessary. So it is not clear that uninformative beliefs are psychologically necessary. As I will shortly explain, it is more plausible that uninformative beliefs are *rationally* necessary. I first need to note the second difference between the cited text and the argument given above. In the text, Millikan argues from unformativity, through the *apriori*, to rational unrevisability. The argument above, on the other hand, moves directly from unformativity to rational unrevisability. This is because much *apriori* knowledge is informative. Specifically, pieces of mathematical knowledge, such as the Fundamental Theorem Calculus, the Gödel Incompleteness Theorems and the Banach-Tarski Theorem, are *apriori* but informative. One can be rational yet not know these facts. Consequently, learning them is informative. But $\underline{\alpha=\alpha}$ is different. It might seem that a minimally rational thinker who directs his attention to $\underline{\alpha=\alpha}$ believes it. Further, it might seem that the truth of $\underline{\alpha=\alpha}$ is given before one begins rational inquiry into the truth of any propositions. One does not *discover* that $\underline{\alpha=\alpha}$. Arguably it is a presupposition of all rational inquiry, and hence rationally unrevisable. It might be suggested that, for the Fregean, the unformativity of $\underline{\alpha=\alpha}$ must consist in its being a universal presupposition of rational inquiry. And, there is no process of reasoning that could undermine a presupposition of all reasoning. So if $\underline{\alpha=\alpha}$ is unformative, then it is rationally unrevisable. So, Millikan's construal of unformativity in terms of the *apriori* is unnecessary to her argument.

At Least Some Pairings are Rationally Revisable

Recall

7. So, if an *apriori* pairing capacity pairs instances of $\underline{\alpha}$ and $\underline{\beta}$, then $\underline{\alpha=\beta}$ is rationally unrevisable.

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I am going to argue that 7. is false: some if not all mistaken pairings are rationally revisable.

As we will see, complications arise around correction of errors in switching cases and the rational status of *correct* pairings. But we can see that 7. is false prior to addressing those concerns. So I am now going to discuss the more general possibility of correction of logical error and its relation to rational revisability and then apply the results of that discussion to pairing. Suppose that a thinker is disposed to reason in accord with a certain schema and, on a particular occasion, that disposition is triggered and illogical reasoning results. There are two possible sources of error. First, the schema may be invalid. This would be the case if the thinker were disposed to affirm the consequent, *i.e.*, to ratify $\varphi \rightarrow \psi, \psi \therefore \varphi$. Second, the schema may be valid but the piece of reasoning not an instance of the schema. That would be the case if a thinker, due to confusion about a particular argument's logical form, exercised a *modus ponens* competence but accidentally affirmed the consequent. In general, to cover all the bases, a thinker must be open to considering whether either she has committed either sort of error.

In the case of a pairing capacity, a rational thinker is at most minimally open to considering whether or not the schema associated with the capacity — pair concept instances iff they are instances of the same concept — is correct. If she rationally considers the question, she immediately concludes that the schema is valid. A rational thinker should be somewhat more open to the possibility of having misapplied a pairing competence, *e.g.*, of having equivocated.⁷¹ A thinker engaged in taxing reasoning — a thinker new to a logic class who has a tendency to affirm the consequent or a sophisticated thinker engaged in complicated philosophical reasoning — should be open to the possibility of having misapplied the *modus*

⁷¹ A thinker could also misapply a pairing competence by exercising the competence with instances of the same concept but failing to pair them. In his "A Puzzle About Belief" Kripke advances several cases — the 'furze'/gorse' case, the 'Paderewski' case, and the 'London'/Londres' case — in which he alleges pairing failure occurs. I do not think that pairing failure occurs in such cases but such error does not concern us here.

ponens schema and mistakenly affirmed the consequent. Similarly, thinkers new to similar concepts or thinkers engaged in complicated reasoning should be open to the possibility of having equivocated. It is a mark of rationality to be open to the possibility that one has equivocated. Now, one need not be *very* open. In most situations, it is easy to determine whether or not one has equivocated. If one discovers that one has accidentally affirmed the consequent, the rational thing is to withdraw one's endorsement of the conditional's antecedent. Just so, if one correctly concludes that one has equivocated, then the rational thing to do is to rescind the pairing.

So one can rationally revise mistaken pairings. It does not immediately follow that one can rationally revise correct pairings. It may be that, when two representation-instances of the same type are paired with one another, it is not possible to actually get good reason to retract the pairing on the grounds of an apparent mistaken application of a pairing competence. So some but not all products of the pairing capacity would be rationally revisable. As we will shortly see, the situation becomes more complicated once we consider the possibility of correcting equivocations due to switches. There are two other pieces of business to attend to before we reach that final issue, however.

First, 7. was not just flatly asserted in the argument given above. Rather, 7. was presented as the consequence of

5. If an *a priori* pairing capacity pairs instances of α and β , then $\alpha=\beta$ is uninformative.
6. If $\alpha=\beta$ is uninformative, then $\alpha=\beta$ is rationally unrevisable.

So if 7. is rejected, then either 5. or 6. must be rejected. I think that 5. should be rejected. If a thinker mistakenly equivocates between two concepts, it does not follow that the identity belief between the concepts is uninformative. It *seemed* uninformative to the thinker, but the thinker was mistaken about the belief's subject-matter.

Millikan: Frege's Puzzle Argument for Fregeanism Requires Infallible Pairing

Capacities

The first reply to my criticism of 7. is suggested by a comment Millikan makes in the following footnote.

If [identity of Fregean sense] were not transparent to mind, then that one cannot think a contradiction about a thing while thinking of it under just one mode of presentation could not be criterial of sameness of sense, nor could it be assumed that uninformative identities are never false identities. (*Ideas*, footnote 3 of chapter 10, p.170)

Millikan claims that if the pairing capacity is fallible then the argument from Frege's Puzzle to Fregeanism fails. In brief, the suggested argument by Millikan's footnote is: if the pairing capacity pairs fallibly, then there is no argument from Frege's Puzzle cases to Fregeanism, because failure to pair in the Frege's Puzzle case may be an example of the pairing capacity's fallibility. At more length, the argument is as follows.

1. Sameness and difference of intentional type are equally accessible to the pairing capacity. That is, where F is an epistemic property such as fallibility, the pairing capacity provides F -ish warrant for pairing
iff
the pairing capacity provides F -ish warrant for dividing.
2. So, if the pairing capacity provides fallible warrant for pairing, then it also provides fallible warrant for dividing.
3. If there is fallible warrant for dividing, then there can be mistaken yet rational division.
4. If there can be mistaken yet rational division, then there are (at least) two scenarios in which a thinker can rationally fail to pair coreferring representation instances.
 - a. the representation instances are not of the same intentional type
 - b. the representation instances are of the same intentional type. The pairing capacity functions properly but fails and one cannot infer just from the rationality of a given division to the divided instances' being of different type.
5. If there are (at least) two scenarios in which a thinker can rationally fail to pair coreferring representation instances, then rational division does not entail difference in intentional type.
6. So, if the pairing capacity provides fallible warrant for pairing, then rational division does not entail difference in intentional type.
7. The argument from Frege's Puzzle to Fregeanism succeeds only if rational division entails difference in intentional type.
8. So, if the pairing capacity provides fallible warrant, then the argument from Frege's Puzzle to Fregeanism fails.

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I think that all of the premises of these argument are correct, except for 7. But 7. is simply false. The move from the Frege's Puzzle cases to the Fregean conclusion would be supported by the claim that rational division entails difference in intentional type. But the move does not require that claim. Thus, in [Systematicity of Thought-Production](#), I argued for Fregeanism without appeal to the claim that rational division entails difference in intentional type. That argument can be summarized as follows. There can be multiple capacities to refer to an object. These capacities can provide intentionally relevant types. Two representation-instances are produced by the same capacity iff their coidentification is *a priori* and uninformative. I argued that Fregeanism best explains this coincidence. That argument does not appeal to the claim that rational division entails difference in intentional type.

As I will argue in my Solution Chapter, the following principle holds:

- *Relative* to a correct rationally default presupposition of environmental normality, two instances are of the same type iff a thinker is not rationally open to their revision.

This principle is a weakening of the strong Fregean principle. But it can be applied to argue from Frege's Puzzle cases to Fregeanism. For the antecedent is true in the Frege's Puzzle cases we have considered: the reasoner has a correct rational default presumption of environmental normality. Now, this principle may not be entirely obvious. So it may not be helpful in an argument from Frege's Puzzle cases to Fregeanism. However, the principled does allow the Fregean to draw a principled distinction between those cases in which rational division entails difference of type and those in which rational division does not.

Revisability of Error in Switching Supports 5. and 7.

Let us consider a different defense of 5. and 7. The basic worry, which will take some unpacking, is that correct pairings must be rationally revisable because the switched thinker

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can rationally revise her mistaken pairing. Let us consider this at greater length. If a switched thinker is to rationally revise her mistaken pairings of, *e.g.*, tiger and tigger-instances, she must learn of the switch. She can learn of the switch only from empirically sourced information. Learning about the switch includes learning about one's changing relations to one's environment. The latter can be accomplished only empirically.

So, given certain empirical evidence, the switcher thinker can rationally revise mistaken pairings. Now, consider the stable thinker. Suppose that the stable thinker were provided a lot of misleading evidence that she had been switched. In fact, suppose that her evidence was just as strong as the switched thinker's evidence. Then, the stable thinker would *mistakenly* revise her *correct* pairings. She would mistakenly conclude that tiger-tiger pairings were actually tiger-tigger.

Several questions arise about the stable thinker. First, is she rational in accepting the misleading evidence? Second, if she is so rational, is she also rational in her reasoning to the conclusion that what are actually tiger-tiger pairings are tiger-tigger pairings? Third, if she is so rational, does it follow that tiger-tiger pairings are rationally revisable?⁷²

If tiger-tiger pairings were rationally revisable and if Fregeanism would be true only if correct pairings were rationally unrevisable, then Fregeanism would be false. However, neither premise is obviously true. Here I am going to focus on the first premise, the question of whether tiger-tiger pairings are rationally revisable.

The stable thinker is rationally blameless. We have stipulated that her empirical evidence, false though it may be, is overwhelmingly evidence for the conclusion that she has

⁷² Discussion with Burge was instrumental in the following discussion of revisability, particularly in pushing me to distinguish between being degrees of rationality, and also between *having* and being able to *access* a rational consideration.

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been switched. And, had she been switched, certain of her pairings would have been tiger-tigger pairings. So if her evidence were accurate, it would be correct to revise some of her pairings. And, there is no cognitive act or state of hers about which we can say "Performing that act, or being in that, state was mistaken, and here is the consideration that shows that act or state to have been mistaken, and here is how, by reasoning, you could have realized as much." Her pairings are in fact tiger-tiger pairings, and we may assume she has good understanding of tiger. But, merely by reasoning rationally, she cannot access the fact that the pairings are tiger-tiger in a way that undermines the empirical evidence of her having been switched. We cannot say that, merely by reasoning in such-and-such a way, the thinker could have realized that her pairings were correct.

Perhaps her rational status is better than blameless. If one has very good evidence that ψ is true, and there are no counter-considerations, then it is rational to believe ψ . And if one rationally believes ψ , and it is correct to reject a given pairing if ψ is true, and there are no undermining considerations, then it is rational to rescind the pairing. So it might seem that our stable but benighted thinker is rational in rescinding her tiger-tiger pairings.

But the case is not so simple. For arguably the considerations in favor of a tiger-tiger pairing are (1) the sameness of type and (2) the thinker's understanding of that type. If so, then the benighted thinker *does* have the considerations to support her tiger-tiger pairing. The problem is that she cannot access those considerations in a way that, from her perspective, rationally establishes that the pairing *is* a tiger-tiger pairing.

Rationality can be construed in more or less objective terms. Very roughly, on the more objective end, there is the idea that which reasons there are and which attitudes they support is determined independently of the ability of a reasoning process to discover those

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reasons and which attitudes they support. The mistaken revisions of correct pairings are not rational if this more object subjective construal of rationality is correct. Again very roughly, on the more subjective end, there is the idea that which reasons there are and which attitudes they support is determined by the reasoning processes used to discover the reasons and what they support. The mistaken revisions of correct pairings are rational if this more subjective construal is correct. Or perhaps, the reasoning is rational in one way, “subjectively”, and not rational in another, “objectively”.

The heavily objective construal of rationality is not necessary for concluding that the revision is not rational. Rationality might be glossed as the ability to appreciate the reasons that one actually has, and what they support. Arguably, on this construal, the thinker is irrational in mistakenly dividing different tiger-instances. The thinker is unable to appreciate fact that her understanding of tiger and the fact that the pairing is a tiger-tiger pairing conclusively support the pairing. So, the first premise of the argument considered above, that correct pairings are rationally revisable, is difficult to assess. In light of the different construals of rationality, it is also difficult to assess the claim that Fregeanism would be true only if correct pairings were rationally unrevisable. It is not obvious how rationality should be understood here. And it is therefore not obvious whether Fregeanism would be true only if correct pairings were rationally unrevisable.

I am not sure whether we should conclude that the benighted reasoning is rational, not rational, or rational in one way and not rational in one another. And I am not sure whether there is a sense of rationality according to which the benighted reasoning is rational and correct pairings are rationally unrevisable. If there were such a sense of rationality, then the

Fregean position would be in trouble. But it is not obvious that there is such a sense. The issue requires more investigation.

Millikan Summary

In a series of papers and books, Ruth Millikan has presented a battery of arguments against Fregeanism. She has claimed that:

- 1) The argument from Frege's Puzzle to Fregeanism assumes, without justification, that intentional properties are the kind of property to explain the differences between informative and uninformative identities.
- 2) Fregeans illicitly conflate identity of representational type with representation of identity.
- 3) Identity judgments merely merge different bodies of thought and do not express propositions. Consequently, there are no epistemically different identity judgments with which a Fregean might construct a Frege's Puzzle. And there is no such a thing as mode of presentations whose different instances must corefer and whose type-identity and type-difference is *a priori* accessible.
- 4) Reference is externally determined. Therefore, no pairing capacity is infallible. But Fregeanism requires infallible pairing capacities.

I argued that 1) is off target. The main purpose of Frege's Puzzle cases is to establish that coreferring conceptual⁷³ representations can have different epistemically explanatory properties. The claim that intentional properties are the epistemically explanatory ones relies mainly on other sources, such as the systematicity argument I gave. 2) is not seriously supported: no text is provided in which a Fregean clearly is guilty of this confusion. 3) is false

⁷³ Frege's Puzzle cases can also be constructed for perceptual, non-conceptual representations.

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because the radical view of identity cognition is false. We reason about identity-relations. The medium for such reasoning includes complex propositions which have, as constituents, propositions in which identity is represented. 4) succeeds only against Simplistic Fregeanism. The discussion of 4) did leave open interesting and important questions about the relations between being a good reasoner, having cognitive access to reasons and rational relations, and which reasons there are. These topics are worthy of further investigation. But we do not have evidence to think that such investigation will discover facts contrary to Fregeanism.

Disjunctivism

Disjunctivist Views of Thought and Experience

Disjunctivist views of thought and experience have become quite popular.⁷⁴ Roughly stated, a disjunctivist view of singular experience holds that there is no type in common between a singular experience-token of *a*; a singular experience-token of *b*, which looks just like *a*; and an illusion or hallucination-token in which there appears something just like *a*. In particular, the *content* of the experiences is different: *which* thing *a* seems to be is different from which thing *b* seems to be. And that can be the case even when *a* and *b* are indistinguishable in terms of their perceptible qualities and relations. Such a view is called *disjunctive* because it holds that there is no intentional type in common to the three experiences, only the derivative disjunctive type: experience of *a* or experience of *b* or hallucination as of thus-and-such.

I am going to discuss and explain Disjunctivism at more length. Then, I will explain why it has seemed to some that the phenomena of radical misintegration supports Disjunctivism about experience and thought. In the following chapter, I will argue that the phenomena of radical misintegration cannot support Disjunctivism. I will claim that taking the phenomena of radical misintegration to support Disjunctivism over alternate theories begs the question against those alternate theories. And I will argue that Disjunctivism provides a poor account of the logical character of the causation and rationality of Oscar's reasoning.

Initial exposition of Disjunctivism

Statement & Campbell Quotation

⁷⁴ Prominent examples include Gareth Evans' "Understanding Demonstratives" and *The Varieties of Reference*, John McDowell's "Singular Thought and the Extent of Inner Space", "*De re* Senses", John Campbell's "Is Sense Transparent?" and *Reference and Consciousness*, and Michael Martin's "The Transparency of Experience". For critical discussion, see e.g. Tyler Burge's "Disjunctivism and Perceptual Psychology".

John Campbell, in his 2002 book *Reference and Consciousness*, advances a Disjunctivist

view of experience, which he explains as follows.

“[T]he phenomenal character of your experience as you look around the room...is constituted by the actual layout of the room itself: which particular objects are there, their intrinsic properties, such as colour and shape, and how they are arranged in relation to another and to you...

[T]here is nothing intrinsic in common between the cases in which there is a dagger to which you are consciously attending, and the case in which you are just having a hallucination. In the case in which there is a dagger, the object itself is a constituent of your experience. The experience is quite different in the case of the hallucination, since there is no object to be a constituent of your experience....

[T]here is no single type of state, ‘having a visual experience as of something being F’. The notion of an experience as of something being F covers two quite different types of state. One is the case in which the object is there...The other is the merely hallucinatory or illusory state.”
(116-7)

This helps to bring out a way in which the existence and identity of the objects could make a difference: the object is literally a constituent of the experience, and that is because having the experience is being in a relation to the experienced objects.⁷⁵ So if the object had not existed, the experience could not have, since there could not be a relation to it. And if a different object is perceived, then the experience is different, since it is a relation to a different object.

Fido examples

An example will help to further illustrate the view. Suppose Alfred sees a dog, Fido.

Then, Alfred has a singular experience-token of Fido and thinks a demonstrative referring to

⁷⁵ The quoted passages express a specific form of Disjunctivism, Relationalism, which holds that the physical objects of perception are constituents of perception and that perception and thought have different kinds of content, and which is expounded in the quotations in this paper. In *Reference and Consciousness*, Campbell argues for Relationalism over Disjunctivism but the differences between different varieties of Disjunctivism will not concern us here, however. In *Reference and Consciousness*, Campbell uses sometimes uses ‘disjunctivism’ to mean disjunctivism as formulated in this work, and in other places uses ‘disjunctivism’ and ‘relationalism’ as contrary versions of the disjunctivism formulated in this work. On these latter uses, as stated for example on p. 122, ‘disjunctivism’ is disjunctivism from the text plus the claim that perceptual states have propositional/conceptual content, while ‘relationalism’ is disjunctivism from the text plus the claim that perception is a relation to the environment, without propositional content, or any other content. Campbell advocates for relationalism over disjunctivism. Throughout the chapter prior to drawing that distinction, Campbell uses ‘disjunctive’ in the broader sense which I follow Snowdon in using. Disjunctivism is not committed to the claim that the perceived object is a constituent of the content or subjective character of the experience. An alternative is that the perceived (and demonstrated) object partially individuates the singular experience-token (and demonstrative). In *The Varieties of Reference*, Evans held such a view about what we are calling demonstratives.

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Fido. Rover is Fido's indistinguishable twin. Alfred might have seen Rover, instead of Fido. In that case, Alfred would have had a singular experience-token of Rover, not Fido, and would have a thought a demonstrative referring to Rover. Again, Alfred could have been the victim of an illusion. It could have happened that it seemed to Alfred as if there was before a dog before him. And, the properties that dog appears to have would be just those that Fido has. In this case, one of Alfred's percepts would not be of anything, but would have a rather abnormal etiology. Again, Alfred might have encountered both Fido and Rover, but failed to distinguish them, as in a radical misintegration case. For example, suppose that Fido is actually partially occluded by a lamp-post. It could have been, instead, that both Fido and Rover were behind by the lamp-post, that Alfred saw the front of Fido and the back of Rover, but that it looked as if there was just one dog. Or suppose that Alfred watched Fido run around a park for a few minutes. It could have been, instead, that first Fido ran around the park, and then was surreptitiously replaced by Rover, but Alfred did not notice the switch. In this case, Alfred would have a singular experience-token of Fido and a singular experience-token of Rover.⁷⁶

Uncontroversial Differences between Examples

There are clearly differences between the experiences in the five scenarios. The experiences have different causes, and are of different objects. In some of the situations, Alfred has an accurate experience; in others, he has an inaccurate experience. So, it should be uncontroversial and obvious that experiences can differ in some ways, due to their different relations to the world.

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⁷⁶ Whether there is one singular experience-token which changes reference, and whether the singular experience-token of Fido is of the same type as the singular experience-token of Rover, are further questions, which will receive further treatment.

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Disjunctivism involves further controversial claims about the cases. Disjunctivism about perception of objects holds, roughly, that there is no perceptual type in common between: seeing one object; seeing another, qualitatively indistinguishable object; hallucinating a qualitatively indistinguishable object; and confusing two objects for one. Disjunctivism with respect to different demonstratives⁷⁷ holds that such demonstratives are of different type if they differ in reference. So, there is no type in common between a singular demonstrative token referring to *a*; a singular demonstrative-token referring to *b*, which looks just like *a*; and a singular demonstrative token which fails to refer.⁷⁸

Intentional types are causally and epistemically explanatory. For example, part of being rational is not believing contradictions. And whether or not a belief is a contradiction is a matter of its intentional type. Again, a thinker is *prima facie* warranted in believing Fido to be brown, while thinking of Fido with a demonstrative, if the experience that demonstrative is based upon presents Fido as brown. Because intentional types, or *contents*, are epistemically and causally significant, Disjunctivism could have substantial consequences for the causal and epistemic properties of experiences and demonstratives.

Given the previously discussed views about demonstrative's reliance on percepts, disjunctivism about experience provides strong *prima facie* support for disjunctivism about

⁷⁷ Disjunctivism about experience and disjunctivism about demonstratives are logically independent. Evans advanced Disjunctivism about thought but not about perception (*Varieties* 124-5, 172-5; *Understanding* 295-299). The argument I will discuss aims to establish Disjunctivism first for thought and then for experience. I focus on the initial stages of the argument so we do not need to worry about the differences.

⁷⁸ Kaplan uses different terminology than this dissertation but he presents a view according to which differently referring demonstratives can be entirely of the same intentional type (529-540). Perry formulates similar views ("The Problem of the Essential Indexical" 16-20; "Frege on Demonstratives" 491-496). Burge, in "Belief *de re*" and Five Theses on De Re States and Attitudes", and Peacocke in *Sense and Content* and "Demonstrative Thought and Psychological Explanation", present views of demonstrative content compatible with or explicitly claiming that differently referring demonstratives can partially the same intentional type partially of different intentional type.

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demonstratives. For, if two demonstrative-tokens refer to different objects, then they must rely on singular experience-tokens that are of different objects. And if Disjunctivism is correct, then the two demonstrative-tokens severally rely on two percepts of different type. If demonstrative-tokens entirely inherit type-sameness and difference from the percepts on which they rely, then the demonstrative-tokens in question are of different type. However, disjunctivism about demonstratives may be true even if disjunctivism about experience is not; elements introduced at the level of thought might combine with perceptual reliance to produce disjunctivism about thoughts.

Disjunctivism & Subjectivity

Typically, Disjunctivist views are concerned with the *subjective* aspects of thought and experience, with what it is like for the subject to have the thought or experience in question. So, percepts of *a* and *b* can be subjectively distinct, just because one is of *a* and one is of *b*, even though *a* and *b* are qualitatively indiscernible. Again, a hallucination of a dagger and an accurate experience of a dagger can differ subjectively. And, this can happen just because the existence, or not, of an experienced object can itself make a subjective difference to the experiences.

To some ears, including these, the claim that there are subjective differences in these different cases seems *prima facie* very implausible. To paint with a broad brush, when two objects are described as indistinguishable, that means *the subject* cannot distinguish them. That is, how things are, *for the subject*, is the same. Again, the reason why an illusion is an *illusion* is that, *to the subject*, the world seems to be one way, but it is actually another way. The way it *seems to the subject* to be is how it would be if the experience were veridical, *i.e.*, how it seems in the other cases. As noted, Disjunctivism and some of the prominent arguments for it have

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come under heavy criticism. I will be concerned with Disjunctivism as it relates to the

switching cases. It will take some work to get to that point. Getting there will involve going through a discussion of one central motivation for Disjunctivism.

Now, the Disjunctivist is not unaware of these ideas and have various replies. Evans and Campbell, among others suggest that, in these cases, the subject is mistaken about *how things seem* to herself (*Reference* 130; *Understanding* 295). There is a difference between the way things seem to the subject, depending on whether or not the subject sees a dog or is under an illusion, but the subject is not reflectively aware of the difference. Whether or not this is a satisfactory reply, what would push one to make it? The Disjunctivist thinks Disjunctivism is the only theory of content according to which a subject is *really* aware of external objects and can *really* know the identities of her objects of thought. The basic thought is as follows. If a subject is really aware of x , then x must make a difference to how things are subjectively, for the subject. If there is no subjective difference between “being aware” of x and “being aware” of y , the Disjunctivist thinks, then the *subject* is not really aware of x or of y . The subject is only aware of something in common to x and y . Yes, the mental states involving one “awareness” or the other may have different causes, and perhaps different veridicality conditions. But those are *non-subjective* differences between the states. Since they don’t make a difference *to the subject*, they don’t put *the subject* in contact with x or y , as opposed to something common to x and y . Hilary Putnam, in *Reason, Truth, and History*, advanced an anti-skeptical argument from anti-individualism. Commenting on this argument, Campbell writes

“We can accept Putnam’s proof only if we accept that we have no conception of what the world is like, only a set of representations which one way or another will be interpreted so as to come out true, whichever way the world is.” (*Reference* 152).

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The issue of Putnam's proof is orthogonal to our concerns. What is important is that this sentence, I think, expresses the root concern motivating Disjunctivism. We can theorize all we want about external relations determining reference, and reliability contributing to knowledge, and in general how relations to the environment are mentally significant. But, if those relations do not make a difference for the subject, then they do not connect the subject with the world. Disjunctivism is the only way to really connect the subject to the world.

Alternatives to Disjunctivism

It is important to note that rejection of disjunctivism is compatible with the claim that singular experience-token₁, singular experience-token₂, and singular experience-token₃ are *partially* of different type, in virtue of their different genealogies and objects. That is, a singular experience-token might be individuated partially in terms of which object it is of, if any, and whether or not it is a hallucination or illusion. Disjunctivism is the stronger claim that there is *no* type in common. Peacocke, Burge, and Mark Johnston, among others, have advanced the claim that singular experience-tokens of different objects are partially of the same intentional type and partially of different intentional types.⁷⁹

The Objectivity Argument

In the discussion of perception in the previous chapter, it was in effect claimed that perception was objective, inasmuch as perception is of objective entities. That is, perception is of entities whose existence, identity, nature, and fundamental patterns of behavior are mind-independent. There are alternative views of perception, such as Enlightenment British empiricism and twentieth century sense-data theories. According to Hume, perception is of impressions, which are vivacious and forceful mental entities. According to sense-data

⁷⁹ See (Burge, "Disjunctivism and Perceptual Psychology", "Postscript to 'Belief *De Re*'", "Five Theses"; Peacocke, "Demonstrative Thought", *Sense*; Mark Johnston, "The Obscure Object of Hallucination").

theories, experience is of sense-data, not ordinary physical objects such as tables, trees, or tigers. Sense-data theorists differed on the question of whether sense-data were mental, physical, both, or neither. But they agreed that, unlike ordinary physical objects, sense-data could be known infallibly.⁸⁰ Sense-data theories are generally held to be false, and I will not rehearse all of the standard criticisms of them. One important problem for sense-data theories concerns the relation between perception and thought. We have said that perception of x enables a subject to think about x . Also, we think about objective entities, and conceive of them as objective. And, that thought relies on perception. This raises the question: how can thought be of objective entities, when it relies on perception of subjective entities? One standard answer is as follows. A subject may develop a theory of such entities, as providing the best causal explanation of sensational patterns in experience. On this picture, experience provides indirect evidence for the existence of the objects of thought. Thought about objective entities does not rely on experience's being of objective entities since, on this view, experience is of subjective entities.

As I said, sense-data theories are false. So I am not going to evaluate the sense-data theorist's proposals concerning the relation between the objectivity of thought and the subjectivity of perception. However, we will be concerned with the relation between perception and the objectivity of thought. The Objectivity Consideration in favor of Disjunctivism holds that only Disjunctivism can explain how perception of x can enable objective conception of x . Campbell's initial formulation, which he later revises, is as follows:

“Experience of objects has to explain how it is that we can have the conception of objects as mind-independent. The objection to the common factor view is that on it, experience of objects could not be what explains our having the conception of objects as mind-independent....On the common factor view, all that experience of the object provides you with is a conscious image of the object—the image which

⁸⁰ Chapter 4 of *Origins* provides an overview of the many varieties of sense-data theory that cropped up in the first half of the 20th century.

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bears the representational content. The existence of that conscious image is in principle independent of the existence of the external object. The existence of the image, though, is dependent on the existence of the subject who has the conscious image. So if your conception of the object was provided by your experience of the object, you would presumably end by concluding that the object would not have existed had you not existed, and that the object exists only when you are experiencing it." (121)

I am going to point out three very serious problems with this argument.

Problems with the Objectivity Argument

Doubtful that Experience Alone Explains our grasp of the concept objective

First, it is not particularly plausible that experience alone explains our grasp of the concept objective, *i.e.*, our ability to think of objects as mind-independent. It *is* plausible that, to think of mind-independent objects, we must experience mind-independent objects. But there is a difference between experience or thinking of a mind-independent object and experience or thinking of an object *as* mind-independent.⁸¹

An entity is mind-independent if it is possible for the entity to exist without any minds existing. Rocks are mind-independent. So if Oscar entertains a perceptual or conceptual singular representation that refers to a rock, then Oscar experiences or thinks of a mind-independent object. It is a further question whether Oscar experiences or thinks of the rock *as* mind-independent.

Thinking of an object as mind-independent is exemplified by entertaining that rock is mind-independent. Experiencing an object *as* mind-independent would be to be in a perceptual state that attributes to the object the property of mind-independence, *i.e.*, to be in a perceptual state that is correct only if it is veridical and whose content is a predicative combination of a representation referring to the object with an attributive representation true

⁸¹ In *Origins of Objectivity*, Burge uses this distinction against some of Campbell's forerunners, Strawson and Evans (ch.6).

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of all and only mind-independent objects. So, experiencing or thinking of an object as mind-independent is a distinct state of affairs from thinking of a mind-independent object.

It is highly doubtful that experience can represent objects *as* mind-independent. Visual experience attributes properties such as round, red, rotating, rough, and the like. Now, it *may* be that visual experience can represent objects as having certain goals. And if an object has a goal, it has a mind. But that does not mean that visual experience has an attributive minded, true of all and only entities with minds. And it definitely does not mean that visual experience has an attributive independent.

Normal human adults can *think* of objects as mind-independent. But *prima facie*, reference to the rock does not require believing the rock to be objective. Certainly Oscar need not consciously believe that rock is mind-independent. *Perhaps* rational and cognitively competent adult humans are disposed to believe α is mind-independent if α is a representation of a physical entity and the question of α 's mind-independence should arise. But this disposition is not evidently necessary for them to think of the rock.

Also, quite young children and apes can think. And it is very doubtful that they could either formulate the concept mind-independence or rationally form beliefs with it. How the mind concept develops is an object of intense psychological investigation. Understanding the concept likely involves a suite of unlearned abilities, including abilities to make inferences about the mental states and behaviors of others. Having the concept independent of likely requires being able to think could exist without the existence of any. Understanding the concept requires being able to infer from the former to the latter. So understanding the concept requires understanding modal operators, such as could, and logical operators such as any operators. Autonomous understanding of those constituent concepts involves inferential

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capacities that are not purely experientially warranted, if experientially warranted at all. And to the extent that the warrant for these capacities is *aposteriori*, it is likely dependent on empirical generalizations, not a particular empirical observation. Rationally believing that rock is mind-independent requires having all of these abilities and hence depends on much more than the experience of the rock. Rationally believing that rock is mind-independent also requires having either rational beliefs about conditions for mind-independence or rational dispositions to infer from representations of such conditions to conclusions about mind-independence. It is simply quite doubtful that young children or apes have these abilities. So *their* experience does not by itself suffice for, and hence does not by itself explain, an ability to think of objects as mind-independent. And if these observations about the abilities are correct, then *our* experience does not present objects as mind-independent, either.

Now, rationally concluding that an object is mind-independent requires evidence of its mind-independence. And such evidence could include representations of the object as existing over time; representation of the object as the same across different sensory-modalities; visual representation of the object as having a backside, *i.e.* representing it as having a determinate shape at *t* but not actually perceptually representing its entire three-dimensional shape, *i.e.* not representing the shape of its unperceived parts; and series of representations in which not all of the object is perceptually represented but in which it is presented as persisting, as when it moves behind an occluder or when it rotates in front of the perceiver. Rationally concluding that an object is mind-independent may require having either perceptions of this sort or other representations with similar purport. So the content and character of our perceptions may be very relevant to our ability to rationally conclude that perceived objects are mind-independent. That does not show that the perceptions themselves present their objects as

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mind-independent. It *does* mean that any account of perceptual representation must be able to explain how perceptual representation could have that content and character, if that account is to explain how some perceivers can rationally conclude, partially from such perceptions, that the objects of those perceptions are mind-independent. As we will see, Campbell's later arguments in effect suggest that a common-factor view cannot account for those aspects of perceptual representation that, while not presenting objects as mind-independent, probably do play an important role in our rationally concluding that those objects are mind-independent.

Other Objective Constituents

Second, it should be noted that the objectivity consideration seems to neglect the possibilities of other objective constituents, besides the object itself. Thus, it could be that the singular experience-token is partially constituted by broader objective and extra-mental patterns and facts, but not constituted by the object itself. Thus, as discussed earlier, perhaps part of a singular experience-token's type is that that singular experience-token, and other singular experience-tokens of that type, stand in systematic causal relations to bodies and their physical properties. *Prima facie*, a so-constituted singular experience-token could have objective reference and, for a sufficiently sophisticated thinker, could play a role in attaining a conception of a body as objective. Burge has argued as much at some length and in some detail.⁸²

Distinguishing Constitution & Epistemology

The third problem with the objectivity consideration is that it appears to mistakenly treat common-factor views as the same as sense-data views, insofar as the objectivity consideration treats common factor views as holding that experience is of mental entities. In

⁸² See "Disjunctivism", "Postscript", "Five Theses", *Origins*.

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discussing one's conception of objectivity and the common factor view, Campbell invokes the

idea that, on the common-factor view, experience would be relevant to acquisition of the

concept mind-independent by putting into thought representations of the properties of a

conscious image, not representations of a perceived physical object. This would make sense

only if the experience was of the conscious image. John McDowell claims that on common-

factor views, experience is of images, not physical objects:

“But Burge makes this look inexorable only by a patent slide; from concepts as parts or aspects of the *content* of a representational state, such as a belief, to concepts as *means* of representation. In the former sense..., concepts would indeed be analogous to *what is expressed* by words, as Burge says. In the latter sense, they would be analogous to *what does the expressing*: to the words themselves.” (“*De Re Senses*” 286)

“[A common factor view] generates a falsification of, for instance, demonstrative thought, akin to the falsification of perceptual experience that is induced by representative realism. Representative realism postulates items in experience whether objects are perceived or not, with the effect that even when an object is perceived, it is conceived as “present to the mind” only by proxy. Analogously, if an object thought of demonstratively is present to the mind only by way of something which could have been deployed in thought even if the object had not existed, the object is before the mind only by proxy.” (“*De Re Senses*” 292-3)

McDowell and Campbell characterize the common-factor views as follows. There is an image,

word, or other mental symbol. This mental symbol has representational properties.⁸³ The

mental symbol represents objective, non-mental entities. The mental symbol occurs in the

subject's mind. What the subject is conscious or aware of, in being in a mental state, is the

mental symbol, not the object represented by the symbol. If we then ask, “How do things

seem to the subject?” or “What is the world like from the subject's perspective?”, the answer

will be in terms of mental symbols, not in terms of what is represented. The answer might be:

right now, there is a visual image of a dog and its brownness. The answer would not be: there

seems to be a brown dog.

⁸³ This leaves open whether a mental symbol is like expressions of natural language, whose representational properties are contingent, or instead may have its representational properties necessarily.

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The view just articulated, which I will “Intermediary Representationalism”, is a common-factor, anti-Disjunctivist Representationalism. It differs from sense-data theories in the character of the object of which the thinker is held to be conscious. According to sense-data theories, the thinker is conscious of non-representational entities. According to *this* Representationalist View, the thinker is conscious of representational entities.

Representationalism should not be formulated in the way that Disjunctivists formulate it. Representationalism is not committed to the view that the primary object of awareness in experience is a representation. Direct Representationalism holds that it is *by way of* the occurrence of a common-factor representation that the subject is consciously aware of a distal object. In characterizing what things are like for the subject, appeal is made directly to the representational properties of the representation: it seems to the subject that there is a brown dog. So, the common-factor does not represent its object to the subject in the way that a painting or word represents its object to an observer. The common-factor is instead what makes the subject able to perceive or think about, and thereby potentially be consciously aware of, its object. The common-factor is a “means” of representation insofar as it allows the subject to think about its object. But it does not do so by being “present” to the subject’s mind, or the subject’s being aware of it.⁸⁴

Disjunctivist: Direct Representationalism is merely a notational variant of Intermediary Representationalism.

Now, the Disjunctivist at this point may object that Direct Representationalism is merely a notational variant of Intermediary Representationalism. According to this charge,

⁸⁴ The McDowell quotations above are from his article “*De Re Senses*”, in which he criticizes Tyler Burge’s “*Belief De Re*”. Nothing in “*Belief De Re*” requires reading ‘means of representation’ as ‘an object of awareness’, and Burge (conversation) states that he never thought of perceptual content as an object of awareness. McDowell’s criticism of “*Belief De Re*” thus rests on a tendentious and incorrect interpretation of that article.

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Direct Representationalism *claims* that subjective awareness is of physical objects, and not of mental intermediaries. But, this claim has not been given any meaning or justification. It has not been *explained* in what way awareness really is *of* the physical object and not of a mental intermediary. Direct Representationalism must *justify* its claim that awareness really is of physical objects. On the face of it, these complaints have little force. It is true that the gloss of Direct Representationalism just given does not say very much about how subjective awareness is of objects — but it was just a gloss, and much work has been done on this topic. And it is entirely unclear why there should be a presumption that Representationalism is Indirect until proven otherwise. *If* a mental state not constituted by its object was not awareness of the object, but instead was of subjective aspects of that state, *then* there might be some force to the claim that the mental state could not provide a conception of objectivity. Many Disjunctivists think that the antecedent is true. But, so far, Disjunctivism has simply asserted the antecedent, and not argued for it. And given our poor understanding of concepts such as ‘awareness’, ‘consciousness’, ‘subjectivity’, and ‘how things seem to the subject’, as well as the apparent coherence of Direct Representationalism, there is every reason to doubt the antecedent.

The Disjunctivist might attempt to elaborate this worry as follows. The Disjunctivist might posit that if a mental state’s being of a given type suffices for that mental state to be a subjective awareness of x , then all instances of that type refer to x . Now, Direct Representationalism claims that the occurrence of a perceptual demonstrative in a conscious mental state makes the subject aware of what the demonstrative refers to. But, the Disjunctivist claims, on common-factor views, the same demonstrative can refer to different

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entities. And the Disjunctivist claims that it follows that the subjective awareness cannot be of any particular referent. At best, it is of something common to the different possible referents.

Direct Representationalism is not merely a notational variant of Intermediary Representationalism

This complaint can be answered with some conceptual sophistication. Note, first, that the claim that there is *a* common intentional factor between differently referring demonstratives is consistent with the claim that there are also intentional differences between the demonstratives. Direct Representationalism can appeal to such intentional differences to explain how differently referring demonstratives are subjectively different. In order to flesh out this explanation, we will use the distinctions between ability-general and occurrence-based abilities and schema and applications, first introduced in [Contents, General and Occurrence-Based](#). Possession of table is ability-general; the possession of the ability requires no causal relations to any particular tables, table-makers, table-uses, table-creations, etc. An ability-general ability is individuated by being freely repeatable. Its possession and usage requires no particular relations, causal or otherwise, between either it or its possessor and some particular entity or event. More germane are demonstrative abilities. By demonstrative ability, one might mean the ability, on different occasions, to exploit particular contextual relations to a referent obtaining on that occasion, to refer to a particular. The visual systems of many animals can exploit stimulation of sensory organs that carry information about a particular object's boundedness, coherence, rigidity, and the like.⁸⁵ Now a normal visual system can simultaneously represent multiple objects, each as a distinct object. So different applications of this ability, even simultaneous applications, can refer to different entities.

⁸⁵ Chapter 10 of *Origins* contains a review and extensive bibliography of the psychological literature establishing this.

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Similarly, a thinker can have a conceptual ability to exploit singular perceptual

representations to refer to the referent of the singular perceptual representation. This ability, as well, can refer to different individuals on different occasions. These abilities, products of the exercise of which refer to different entities, because of the different relations of the products, are *schematic* abilities. The particular use of such an ability is an *application*.

As noted in [Schematicity is Compatible with Demonstrative Coreference in virtue of Logical Form](#), occurrence-based abilities can be individuated so that different exercises of the same occurrence-based ability all refer to the same entity. Or at least there is such a *prima facie* possibility and the arguments from [Valid Arguments Involving Demonstrative-Pairing](#) seemed to realize that possibility. Now the switching cases raise some doubt about whether different exercises of the same occurrence-based ability must all refer to the same entity. Indeed, as we will later see, that is the point at which Disjunctivism and the topic of this dissertation intersect. But we are not there yet. The possibility of such individuation means that Campbell does not precisely address the Direct Representationalist position when he writes that contextual features do not help to constitute subjective awareness. He is correct that features of the external physical context do not make a difference to the ability-*general* ability. But, more or less directly, they may make a difference to the occurrence-based ability. Thus, if, as Peacocke in effect suggests,⁸⁶ the object itself individuates the application, then every actual or hypothetical representation-instance produced by the ability necessarily refers to the object. (“Demonstrative Thought”, *Sense* 108). Now, if occurrence-based abilities and their representational types are epistemically transparent or translucent, then objects do not individuate occurrence-based abilities. For, it is normally possible to visually and conceptually

⁸⁶ Peacocke does not use our terminology in his discussions.

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twice represent the same object, without reidentifying it as the same object. Both representation-instances are of the same ability-general type. And if occurrence-based representations are individuated only in terms of their object, then the instances are of the same occurrence-based type. But the representations are not paired as, *ex hypothesi*, the object is not reidentified.

Another possibility is that an occurrence-based ability is individuated by those effects of the world which are such that, if effects of that type occur, they are likely to all be caused by one and the same object, and which cause the exercise of the ability-general ability which produces the occurrence-based ability. Consider a visual representation. Light reflected from the object enters the eye, stimulating optic neurons, causing them to fire, which firing in turn causes neural activity in the visual system. Eventually, a visual representation of the object is produced, correlated with an occurrence-based ability. The resultant occurrence-based type may be individuated in terms of some of the earlier neural, sensory, or perceptual events earlier in this sequence. That is, the type may be individuated in terms of its psychological ontogeny. If the occurrence-based type is so individuated, then all actual instances of it refer to the same entity. Individuating an occurrence-based type in terms of its causal history establishes a relation between all of its instances and a given context — all of the instances have a causal relation to those objects and events in the causal history of the individuating event, including objects and events in the physical world.

It might be that particular psychological events that Fido causes could have been caused by Rover instead. In particular, it may be that the events individuating the occurrence-based type which actually refers to Fido could have been caused by Rover instead. If that were the case, then one instance of an occurrence-based type could refer to different entities in

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different possible situations. And the Disjunctivist might claim this is an unacceptable implication. The Disjunctivist might claim that if an instance's having a given type constitutes subjective awareness of x , then *every* instance of that type, in *any* possible situation, refers to x .⁸⁷ There is little reason to believe this strong modalized claim, however. For one thing, it seems that a given occurrence-based type that is actually a means of being aware of Fido could have been a means of being aware of Rover. In addition, it is possible that the occurrent individuating factors include *both* the psychological ontogeny *and* the distal object. So there are possible common-factor views that can satisfy the strong modalized claim.

Reason for Discussing Disjunctivism

So far in this chapter, I have introduced Disjunctivism, explained that its primary motivation has to do with accounting for a thinker's "access" to the world, or how a state of subjective awareness can be "genuinely of" an objective state of affairs, and considered several failed arguments for Disjunctivism.

In the face of these problems, a proponent of Disjunctivism might attempt to revise the Argument from Objectivity. The Argument from Objectivity is quite abstract, and it might be difficult to figure out how to revise it at such an abstract level. So one strategy is to produce a more concrete version of the Argument from Objectivity, and then, if possible, generalize from that version. John Campbell has offered a concrete version of the Argument from Objectivity. He has argued that only Disjunctivism can account for the phenomena of radical

⁸⁷ Campbell appears to believe something like this: "The aspects of context which fix the reference of a particular demonstrative element on a particular occasion are not themselves assumed to be available to the subject (Burge 1991: 203-6). The thing that is subjectively available — the demonstrative element — cannot of itself, therefore, distinguish between presentation of one object and presentation of another." (*Reference* 125). Put to the side the question of the soundness of Campbell's argument. Campbell here seems to be considering *one* demonstrative element, of one type, in different situations, and claiming that because of variability of reference across those situations, the demonstrative element does not amount to subjective awareness of the object itself. Similarly phrased claims follow through the end of the chapter, to page 131.

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misintegration. And, he thinks that this argument is in effect a more concrete version of the

Argument from Objectivity; the more concrete argument from radical misintegration

establishes one respect in which constitution by particular object individuates perceptual and conceptual types.

In the remainder of this chapter, I will expound Campbell's argument that only Disjunctivism can account for the phenomena of radical misintegration, attempt to discern in what way that argument is an instance of the Argument from Objectivity, and finally consider whether that argument can cast any light on our earlier question about the significance of type-constitution by an object. In the subsequent chapter, I will argue that Campbell's argument fails, and that Disjunctivism in fact provides a *poor* explanation of the phenomena of radical misintegration.

Arguments For Disjunctivism

The Logical Argument

One might think that one could argue for Disjunctivism solely from the *logical* features of the switching cases. Such an argument might run as follows:

- (L1) In successful integration, the paired demonstrative instances are guaranteed to corefer.
- (L2) It is a logical property of those paired demonstratives that they are guaranteed to corefer.
- (L3) In radical misintegration, the paired demonstrative instances do not corefer, and *a fortiori* are not guaranteed to corefer.
- (L4) Therefore, the paired demonstrative instances in successful integration logically differ from the paired demonstrative instances in radical misintegration.
- (L5) Contents have their logical properties essentially.
- (L6) Therefore, the paired demonstrative instances in successful integration differ in content from the paired demonstrative instances in radical misintegration.

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- (L7) The paired demonstrative instances in successful integration have all the same physical, biological, neurological, and individualist functional properties as the paired demonstrative instances in radical misintegration.
- (L8) The paired demonstrative instances in successful integration differ from the paired demonstrative instances in radical misintegration in their relations to their respective environments, and in particular in which objects they are related to.
- (L9) Therefore, which object a demonstrative instance is related to makes a constitutive difference to the demonstrative instances' content.
- (L10) Therefore, the demonstrative instances in successful switching have no type in common with the demonstrative instances in unsuccessful integration.

Criticisms

Object-Individuation and Disjunctivism Do Not Follow From Previous Premises

Campbell does not offer this argument. It suffers from several serious flaws. The Logical Argument does not establish that Disjunctivism is the only view of demonstrative content on which the demonstrative content in successful integration suffices for coreference. At most, the Understanding Argument establishes that there is an intentional property F and a relation between demonstratives and their environment R such that

- (a) having F suffices for coreference;
- (b) the demonstratives in integration have F while the demonstratives in radical misintegration lack F ;
- (c) the demonstratives in integration have R while the demonstratives in radical misintegration lack R ; and
- (d) (c) explains (b).

However, the Argument does not establish that there is not another property G that is shared by the demonstratives in integration and radical misintegration. So, (L10) does not follow from (L9). Given (L6) and (L9), there is some object-individuated difference between the demonstrative pairs in successful integration and radical misintegration. But it does not follow that the contents are entirely different. There might be some similarities, and some differences. For example, a demonstrative instance might be individuated, as Burge suggests is possible, in

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part by the body-identification method it exploits, and in part by which object it refers to. In that case, differently referring demonstrative instances relying on the same general object-identification ability would have a type in common. So (L10), *i.e.* Disjunctivism, does not follow from (L6) and (L9); objects can help to individuate contents without requiring complete type-differences between differently referring contents.

(L9) does not follow from (L6), (L7), and (L8). I want to make this point in the context of the intentional property F and the environmental relation R discussed above. According to Disjunctivism, demonstrative content types are at least partially determined by the objects the demonstratives are of. So, according to the Disjunctivist, the demonstratives in integration have their content type partially determined by the same object, while the demonstratives in radical misintegration do not. So, for the Disjunctivist, the relation to the environment R discussed above is: have their content type partially determined by the same object. But there are other eligible relations. For example, there is the relation: being causally related to the same object. If that were the individuating relation, Disjunctivism could be false. To see this, it will help to contrast three concrete cases. The first case is one of successful integration in which both demonstratives are related to Fido. The second case is one of successful integration in which both demonstratives are related to Rover. The third case is one of misintegration in which one demonstrative is related to Fido and the other to Rover. There are at least two kinds of environmental differences between the two cases of successful integration and the one case of radical misintegration. The first kind of difference is in the particular entities to which the different demonstratives are related. The two successful cases differ from one another in this way: in one case the demonstratives are related to Fido while in the second they are related to Rover. The second kind of difference is whether the two

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demonstratives in the situation are or are not related to the same object. In radical misintegration, the demonstratives are related to different objects. In both cases of successful integration, the two demonstratives are related to the same object. So, the two cases of successful integration do not differ from one another in this way. So, one way for (L7) and (L8) to be true is that the occurrence-based type of a demonstrative is partially determined by which object it is related to. Another way for (L7) and (L8) to be true is that part of the full intentional type of a demonstrative instance is determined by which other demonstrative instances the first corefers with. This coreference condition is only a necessary condition for type-sameness; it does not entail that any two coreferential demonstratives are of the same intentional type.

Separation of Content's Logical and Cognitive Significance

Let us turn to (L4) and (L5).

(L4) Contents have their logical properties essentially.

(L5) Therefore, the paired demonstrative instances in successful integration differ in content from the paired demonstrative instances in radical misintegration.

One might attempt to defang (L5) by distinguishing between different roles content plays.

One role that content plays is to provide certain semantic properties for mental states with

that content. Thus, propositional content normally provides truth-conditions. Sub-

propositional components provide other semantic properties, such as reference, extension, or

truth-functions, that, in combination with the semantic properties of other sub-propositional

components, as well as the structure by which the contents constitute a content, determine

truth-conditions. A second role played by content is cognitive and epistemic. As discussed in

[Functions have Causal Significance](#), cognitive generalizations and explanations and evaluative

epistemic principles cite, among other things, the contents of mental states. Cognitive

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competences and processes are individuated partially in terms of the contents of the states on which they operate and some contents are individuated partially by being subject to certain competences and processes. Contents are *directly* cognitively explanatory of some phenomenon when they are individuated of the cognitive processes producing the phenomenon.

Now, if we suppose that contents have logical properties *essentially*, then, if one pair of demonstrative instances are of the same type as one another, and another pair do not corefer with one another, then there is a difference of type, of content, between the first and second pair. But, that does not yet establish that the logically required content difference is directly cognitively relevant. First of all, that content difference may not be at the ability-general schematic level, but only at the occurrence-based level. Second, we have seen that multiple factors might individuate occurrence-based content: the psychological ontogeny and the distal object for example. Indeed, *both* of those factors might individuate occurrence-based content. The suggestion on hand is that while there may be a difference in content between the demonstratives in a case of successful integration and a case of radical misintegration, that difference is not directly cognitively explanatory of pairing. So, the distal referent could individuate occurrence-based contents, so that there were different occurrence-based contents in integration and radical misintegration. And there could be a common psychological ontogeny between the demonstratives in integration and radical misintegration. And, a thinker's pairing capacities might be responsive to sameness and difference of ability-general types and the sameness and difference of the contribution made by the psychological ontogeny, while not differentiating between demonstrative contents that differ *only* in that their content is partially determined by their distal object. And, since the warrant for a pairing is at least partially dependent upon the functioning of the capacity that produced the pairing,

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the correct and incorrect pairings would have at least some degree of warrant in common. So even if this logical argument succeeded in establishing some sort of content difference, it would not necessarily establish a directly cognitively relevant content difference. An in fact, I think this is probably the case with the switching examples. There *is* a content difference between the stable and switch cases. But, this content difference is not directly cognitively explanatory. This position is the one I will defend against the Disjunctivist.

Roadmap

I will proceed as follows. I will present other versions of the sketched argument that explicitly aim to establish that object-individuated aspects of demonstrative content are epistemically relevant to logical reasoning. I will criticize those arguments, on two points. I will argue that they are potentially self-defeating, and I will argue that they present a view of logical reasoning that is too empirical and particularistic. I will then offer an alternative picture of the aspects of demonstrative content relevant to logical reasoning, and pairing in particular.

The Infallibility Argument

Statement of the Infallibility Argument

Can appeal to infallibility in logical reasoning can be used to maintain the connection between logic and epistemic aspects of content? An argument would be as follows.

- (C1) In successful integration, demonstrative instances produce correct, canonically warranted, pairing.
- (C2) Correct, canonically warranted, pairing is a variety of correct basic logical reasoning.
- (C3) The contents and reasoning capacities involved in canonically warranted correct basic logical reasoning are infallible.
- (C4) Therefore, the pairing capacity and demonstrative instances in successful integration are infallible. (By C1, C2, and C3).

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- (C5) Contents and reasoning capacities are infallible only if in no situation do the contents and capacities produce mistaken reasoning.
- (C6) Therefore, in no situation does exercise of the pairing capacity with the demonstrative instances from successful integration result in mistaken pairing.
- (C7) Therefore, either the demonstratives or the pairing capacity in radical misintegration are distinct from the demonstratives or pairing capacity in successful integration. (By C5 and C6).
- (C8) If the pairing capacity in radical misintegration is distinct from the pairing capacity in successful integration, then the demonstratives are different as well, because the only way for the pairing capacities to differ is in terms of the content-types whose instances they pair.
- (C9) Therefore, the demonstrative instances in successful integration have different content from the content of the demonstrative instances in radical misintegration. (By C7 and C8).

Radical Misintegration is Inconsistent with Infallibility Requirement

The most important problem with the Infallibility Argument is that (C3) is false. Much empirical knowledge, for example, is fallible. And it is simply not obvious that logical knowledge or warranted logical reasoning leading to knowledge *must* be infallible. Thus, there are irrational equivocations, where a thinker mistakenly pairs instances of different type, through some defect or other in the thinker's mind. And, one can have knowledge without having absolutely ruled out that such a mistake has been made. So, the warrant for successful pairing does not provide infallibility. In fact, one might take the possibility of radical misintegration to show that pairing in integration situations is fallible. Thus, while in successful integration the pairing is in fact correct and successful, Oscar might have paired unsuccessfully, had he instead been in a radical misintegration situation. That possibility of failure shows that the successful pairing is fallible. Now, it might be objected that this argument begs the question against the Disjunctivist, as follows. The argument requires that

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the *same* pairing occur in both successful integration and radical misintegration, that sameness of pairing requires sameness of paired types, that on the Disjunctivist proposal, the types in successful and radically failed integration are of different type. But this is not a good objection. Setting pairing to the side, we are in general obviously logically fallible, and can have knowledge nonetheless. Now, the fallibility of drawing a logical argument has to be demonstrated by the possibility of drawing an invalid argument, with the same warrant. And arguments have their logical properties necessarily. So the argument involved in the mistaken reasoning has to be a different argument than the one involved in the successful reasoning. So, at least for logical arguments, the fallibility of successfully drawing one argument can be established by the possibility of drawing a *different* invalid argument. So, the mere difference in type is not enough to show that one mistake does not bear on the fallibility of another success.

Campbell Does Not Make the Infallibility Argument

While certain passages could be read as advancing the Infallibility Argument (125, 127-8), Campbell does not intend them to be so read. Campbell explicitly disavows the idea that, in arguing for disjunctivism, one should rely on the claim that knowledge requires infallibility.

“[T]he common factor theorist could as readily as anyone else define a notion of ‘knowledge’ which more or less matched the ordinary concept. For example, there is no evident difficulty in the idea that a common factor image could be a reliable sign of an external phenomenon; if you already have the concept of that phenomenon, there is no particular difficulty about using a reliable sign of it to give you knowledge of it. The fundamental objection to the common factor approach is that on the common factor approach, experience cannot play its explanatory role; we cannot understand how experience, so conceived, could be what provides us with our concepts of the objects around us.” (123; italics added)

Here Campbell explicitly allows that knowledge might require only reliability, not knowledge. Campbell claims that the fundamental problem for the common factor approach is rather that it cannot explain how experience “provides us with our concepts of the objects around us”. I take this passage to be simply a statement of the content of Campbell’s objection to the

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common factor view, not an argument for that objection. It is clear from the surrounding text that Campbell means this to be a restatement of the Objectivity Consideration. A particular experience provides us with an ability to think about an object by making us aware of certain facts about the object. Being able to think of an object requires being able to think of it as the thing that is, as self-identical, distinct from other objects, existent, and objective. So, when an experience of a stone enables us to think of that stone, then the experience is as of the thing that that stone is, as self-identical, distinct from other objects, and existent.⁸⁸ I think that the idea motivating Campbell is that, on the common factor view, experience cannot so represent its objects. The key to understanding Campbell's view, then, is to understand why he thinks that, on the common factor view, experience cannot so represent its objects. I am now going to consider an argument that can be extracted from Campbell's text, that appears to attempt to flesh out the idea that the common-factor view cannot explain how experience can represent an object as identical over time, and that does not explicitly involve any appeal to infallibility.

Understanding is Knowledge Argument

Let us call a thinker's understanding of a representation's logical properties her "logical understanding". "Minimal understanding" is the understanding required for using or thinking the relevant expression or concept. "Minimal logical understanding" is understanding

⁸⁸ In the initial statement of the Objectivity Consideration, Campbell faulted the common-factor view for not explaining how experience could provide with the concepts mind-independent or objective. Here the Campbell instead faults the common-factor view for not explaining how experience of an object could provide a concept of that object. So Campbell shifts from talking about a concept of *objectivity* to talking about a concepts of particular objects. I do not think that having concepts of particular objects or the concept object requires having the concept objective. But I think that Campbell's argument is best formulated in terms of the charge that on the common-factor view experience does not provide us with concepts of particular objects. And when he actually discusses radical misintegration, he does not mention the concept objective. So this shift in the statement of the Objectivity Consideration, while intrinsically significant, does not weaken his argument against the common-factor view.

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of a representation's logical properties that is required for using or thinking the relevant expression or concept. The key idea of the Understanding Argument is that, allegedly, minimal logical understanding of the demonstratives in successful integration partially *consists in knowledge of coreference*. Now, since there is not coreference in radical misintegration and knowledge is factive, Oscar does not have knowledge of coreference in radical misintegration. So, Oscar's minimal logical understanding in radical misintegration does not comprehend knowledge of coreference. So, Oscar's minimal logical understanding of the demonstratives in successful integration is a distinct mental state type from the minimal logical understanding in successful integration. Plausibly mental states are of different intentional type only if they have the same minimal logical understanding. So, the demonstratives are of different type. Now, Campbell claims, experience provides the minimal logical understanding. In particular, the type of the experience determines the type of understanding. Since the understanding-states are of different type, the experiences are of different intentional type. In premise/conclusion form, we have:

- (U1) Minimal logical understanding of a logical constant warrants particular patterns of logical cognition with that constant, and that understanding includes knowledge of the semantic properties which make that cognition correct.
- (U2) At least for logical cognition, in central cases, the relation between understanding, warrant, reasoning, knowledge and semantic properties is the same for nonlogical expressions, including demonstratives, as for logical constants.
- (U3) At least in successful integration, which is a central case, minimal logical understanding of demonstratives warrants pairing with demonstratives of the same type.
- (U4) Pairing is validated by coreference.
- (U5) So, in successful integration, understanding of the demonstratives includes knowledge of coreference.
- (U6) Knowledge is factive.
- (U7) The demonstratives in radical misintegration do not corefer.
- (U8) So, in radical misintegration, Oscar lacks knowledge of coreference.
- (U9) So, knowledge of coreference is a constituent of Oscar's understanding of the demonstratives in successful integration, but not of the demonstratives in radical misintegration.

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- (U10) So, Oscar's minimal logical understanding in successful integration is type-distinct from Oscar's understanding in radical misintegration, because the former consists in knowledge while the latter does not.
- (U11) And so, the singular demonstrative aspects of Oscar's thoughts in successful integration are type-distinct from those aspects in radical misintegration.
- (U12) Oscar's understanding of the demonstratives is constituted⁸⁹ by his experiences of the demonstrated objects.
- (U13) Therefore, Oscar has type-distinct experiences in successful integration and radical misintegration.
- (U14) These type-differences are best explained by Disjunctivism.
- (U15) Therefore, Disjunctivism is true.

One central idea in the Understanding Argument is that the thinker understands the demonstratives in successful integration whereas the thinker misunderstands the demonstratives in radical misintegration. Now Oscar can think the demonstratives, so by definition he has at least minimal understanding of the demonstratives. In addition, if *r* is the referent of one of the demonstratives, he understands that *r* is a body, i.e., a spatiotemporally bounded and connected rigid mobile mass. This understanding might not be discursive but it will be reflected in his inferences with the demonstrative. He also has some logical understanding of the demonstratives. He is competent with the fact that each is a singular representation. And he is competent with the implications of their coreferring in virtue of logical form and, if they corefer, that coreference not being in virtue of logical form. But, he is not competent with respect to whether or not they actually do corefer in virtue of logical form. And arguably this incompetence constitutes some degree of misunderstanding. But even if that incompetence is misunderstanding, it is a further claim that the mental states which constitute that understanding are, in the stable and switch cases, of different intentional type. That relies on the claim that, at least in central cases, minimal logical understanding of

⁸⁹ One might expect that at least some of his understanding would consist in connections with conceptual and logical capacities that are *not* grounded in the experience. And Campbell does not to my knowledge explicitly assert that the understanding is provided *entirely* by experience. However, I am not aware that he ever makes allowance for such connections.

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demonstratives requires knowledge of coreference. Shortly I will argue that this claim is false.

Before I do, I should note that Campbell nowhere spells out his argument as I just have. As we will see, he does assert (U1) and (U2), but he does not explicitly connect them to the Disjunctivist conclusion in the way I have suggested. This argument is a reconstruction that I think may capture Campbell's intentions. I am first going to explain the similarities and differences between this argument and the infallibility Argument and why I think the Understanding Argument may capture Campbell's intentions, and then will turn to criticizing the Understanding Argument, focusing on problems with (U1) and (U2).

Contrast with Infallibility Argument

In the Infallibility Argument, the move is from knowledge of coreference, through the ideas that knowledge requires infallible warrant and that warrant is provided by experience, to the conclusion that the experience must guarantee the identity. The move in the Understanding Argument is from the idea that, in the absence of contrary evidence, experience provides knowledge of coreference. Knowledge is factive; what is known is the case. So, any state that suffices for knowledge must suffice for the knowledge's correctness. So, if an experience provides knowledge that demonstratives corefer, then the occurrence of that experience is sufficient for the demonstratives to corefer. So the argument does not *appeal* to the idea that knowledge is infallible. The soundness of the Understanding Argument may entail the infallibility of pairing, however. If so, and given pairing's fallibility, that would be a problem for the Understanding Argument. I will focus on other problems, however.

Attribution

In his exposition of his argument for Disjunctivism, Campbell writes:

"Any account of our understanding of logical connectives must, on a classical account, explain how it can be enough to guarantee knowledge of the existence of the truth-table...{A} In the case of a logical constant, on a Classical View of the matter, *understanding the term requires that you know the truth-table for*

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the term; that you know which truth-table it has. It would not be enough, for an understanding of the logical constant, merely that you have grasped something which is reliably though not invariably correlated with the existence of a truth-table for the term. If we accept that {B} *the assignment of a reference to a demonstrative is to be thought of in parallel to the assignment of a truth-table to a propositional constant*, then an understanding of the demonstrative will not be provided merely by grasp of something which is reliably correlated with there being a reference for the term. To understand the demonstrative, you will need to know which thing it refers to. This understanding has to be provided by your experience of the object." (127-8; italics and bracketed letters added)

{A} expresses (U1) and {B} expresses (U2). By themselves, (U1) and (U2) are compatible with both Disjunctivism and the denial of Disjunctivism, though the anti-Disjunctivist need not accept either. If the Understanding Argument reaches a Disjunctivist conclusion, that is only later, when (U1) and (U2) are combined with descriptions of successful and radically failed integration attempts. Throughout *Reference and Consciousness*, Campbell asserts both that minimal logical understanding of logical constants warrants basic logical inference patterns and also that such understanding provides such warrant because it includes knowledge of certain semantic properties of the constants — their truth-tables — that validate those basic inference patterns. Now, it is uncontroversial that minimal logical understanding of demonstrative expressions warrants basic logical inference patterns, including pairing.⁹⁰ According to Campbell, minimal logical understanding of demonstratives, both occurrences and types, is similar to minimal logical understanding of logical constants. According to Campbell, those understandings are similar because each warrants specific patterns of logical reasoning. And, each includes knowledge of the semantic properties that validate those patterns. So, minimal logical understanding of demonstrative occurrences supposedly includes knowledge of coreference because coreference is supposedly what validates pairing.⁹¹ This

⁹⁰ Though, as noted in the discussion of the Articulated Argument, it is contentious when such pairings occur.

⁹¹ Actually, coreference by itself does not validate pairing. Pairing is validated by coreference *guaranteed by form*. So this account of logical understanding is incomplete.

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explains the italicized parts of Campbell's continuation of his argument in the following

quotation:

"[T]here are certain basic patterns of inference involving demonstratives whose correctness cannot be *grasped* by someone interpreting the demonstrative by means of [a]... common factor.... For example, there is the Temporal Case, in which the two premises state knowledge which depends on you having kept track of a single thing:

That woman is jumping;
That woman is running;
Hence, that woman is jumping and running

{C} *Recognizing the validity of the inference requires that [your understanding, and hence, because it provides your understanding,] your experience should make the sameness of the object transparent to you; but, on the common factor conception, that is precisely what your experience of the object cannot do. On the common factor conception, your experience of the object would have been exactly the same whether there was one woman there throughout, or many, or none. {D} So your experience in itself, on the common factor picture, can provide no guarantee of the sameness of the object throughout.*

...
{E} *Experience of the object, conceived on the Relational model, in contrast, does have the capacity to make the validity of these inferences comprehensible to us; it makes existence and identity over time and across sensory modality transparent to us." (129-130; italics added).*

At {C}, Campbell invokes the metaphor of transparency in describing what understanding of a demonstrative term must provide. I think that this metaphor anticipates Campbell's Disjunctivist conclusion; what Campbell means to be asserting is the requirement imposed on demonstrative understanding by the putative fact that demonstrative understanding warrants pairing: that demonstrative understanding includes knowledge *of* identity. Now unlike (U2), Campbell does not restrict his claim to understanding of demonstratives in central cases. But as we will see in discussion of (U2), Campbell *cannot* consistently assert that minimal logical understanding includes knowledge of identity, since such identity is lacking in radical misintegration. Two points need to be made about {D}. First, Campbell is correct that a factor common to integration and radical misintegration cannot guarantee sameness, since that factor is present when sameness is lacking. Second, {D} might be taken to suggest that Campbell is falling back into making the Infallibility Argument. However, as explained in the preceding [Contrast with Infallibility Argument](#), the Understanding Argument also entails that

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experience must provide a guarantee of sameness. So this text is compatible with interpreting the text as expressing the Understanding Argument. At {E}, Campbell points out that, if Relationalism⁹² is true, then there are different experiences in successful and radically failed integration. And so the experience in successful integration can provide knowledge of identity.

⁹² Recall that Relationalism is Campbell's favored version of Disjunctivism, any version of which would have the same consequence.

Evaluation of Disjunctivism & the Understanding Argument

Understanding Argument does not establish Disjunctivism

In [Object-Individuation and Disjunctivism Do Not Follow From Previous Premises](#) I raised some problems for the Logical Argument. These are also problems for the Understanding Argument. The Understanding Argument does not establish that there is *no* intentional factor in common between the demonstratives in integration and radical misintegration. It only establishes that there is some different intentional factor. In addition, the Understanding Argument does not establish that this difference in intentional factor is due to the demonstrative contents' being partially individuated by their objects. It could instead be that the demonstratives' types in integration are partially determined by the fact that they are causally related to the same thing, but that it does not matter *which* thing that is.

As I said above, I am somewhat inclined to think that occurrence-based types are partially environmentally constituted, by which object they are related to. So, the demonstratives in radical misintegration are of different occurrence-based types from one another, and hence at least one⁹³ is different in occurrence-based type from the demonstratives in successful integration. However, I do not think that *this* difference in occurrence-based type is directly cognitively or epistemically explanatory of pairing reasoning. I think *another* difference in occurrence-based type is explanatory.

Recall that in [Direct Representationalism is not merely a notational variant of Intermediary Representationalism](#) I introduced different pictures of the individuation of occurrence-based types. On one picture, the occurrent element of an instance's type is determined by the distal worldly object that caused the instance. On a second picture, the

⁹³ The first demonstrative instance in radical misintegration might be entirely of the same occurrence-based type as the first demonstrative instance in integration.

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occurrent element is determined by psychological events in the instance's ontogeny. Now, suppose that the second picture is at least partially correct: a demonstrative instance's psychological ontogeny at least partially determines its occurrence-based type. Then, arguably, all of the demonstrative instances — the demonstrative instances in integration and the demonstrative instances in radical misintegration — share significant psychological ontogeny.

The very same neural, sensory, and perceptual events give rise to the first demonstrative instance in both integration and radical misintegration; there is no difference in the two scenarios at that point. Subsequently, in integration the same object continues to affect Oscar's perceptual system while in radical misintegration a new object affects Oscar's perceptual system. It may be that the very same neural, sensory, and perceptual events figure in the ontogeny of the demonstrative instance in integration that refers to the old object and the demonstrative instance in misintegration that refers to the new object. Suppose that the ontogenies are identical. Then, the four demonstrative instances could have, at least in part, the same occurrence-based type, *viz.* that part which is determined by psychological ontogeny. I suspect that this is the case and that this aspect of occurrence-based type is what pairing capacities are exercised on, to produce pairing. This suspicion is at this point a mere hypothesis. It should be noted that this hypothesis is consistent with the claim that distal objects also play a role in individuation of occurrence-based types.

Warranted Fallible Alternative

My evaluation of the Understanding Argument and Disjunctivism will touch on several topics. A common thread will be Campbell's constant reliance on the problematic claim that in central cases, minimal logical understanding of demonstratives consists in

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knowledge of coreference. I will present an alternative view of that understanding. I will

argue that this account better explains a variety of aspects pairing in integration and radical misintegration. So before beginning the evaluation of the Understanding Argument, it will be useful to have an alternative sketched out.

One alternative, false but illustrative, is that minimal logical understanding of demonstratives consists in *normally accurate but fallible warranted belief about ("grasp of")* some of the demonstratives' logical properties. In central cases, such belief amounts to knowledge. But, that knowledge is both fallible and defeasible. The warrant for the belief is compatible with the belief's falsity, in which case the belief is not knowledge. And, to constitute understanding, the belief need not have been knowledge; the belief might have been false. If this view were correct, then the Understanding Argument would fail. Oscar's understanding would amount to knowledge in successful integration but not in radical misintegration. So the same beliefs would constitute the understanding, and amount to knowledge or not depending on the situation. Campbell addresses this view only very briefly, in the paragraph cited above from page 128. I will discuss the argument of this paragraph shortly. (U2) is false if this view and (U1) are correct. For according to (U1), minimal logical understanding of a logical constant is knowledge, not warranted belief.

Now, I do not think that either the knowledge picture or the warranted fallible belief picture is correct, because I think that both knowledge and belief are too sophisticated mental states to constitute minimal logical understanding. Rather, I think that minimal logical understanding consists in a competence to reason logically in most cases. Such a competence may be connected with a conscious representation as of identity, but I do not think this representation is a belief. Previously, I hypothesized that that the four demonstrative-

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instances may be in part of the same occurrence-based type because they may share a

common psychological ontogeny. I suspect that that commonality in occurrence-based type is the representation as of identity.

Criticisms of the Argument

I am now going to critically assess the Understanding Argument and Disjunctivism's account of demonstrative-pairing. I will begin with a criticism of the argument and then turn to the conclusion. For expositional sake, I am going to drop 'minimal logical' from 'minimal logical understanding', and simply use 'understanding', because there are no other varieties of understanding under consideration.

(U1) and Semantic Knowledge

U1 is not established

I believe that the Understanding Argument has very serious problems. As intimated, I am skeptical of (U1) and (U2), and the notion of semantic knowledge involved in them.

According to (U1), understanding of a logical constant includes knowledge of the constant's truth-table and this understanding grounds the ability to reason logically with the constant.

This requires that the knowledge be distinct from the ability. However, Campbell does not explain what the knowledge *is*. And he does not explain how it produces or warrants logical reasoning.

Two Construals of Semantic Knowledge

Recall the first premise:

- (U1) In central cases, minimal logical understanding of a logical constant warrants certain logical cognition with that constant, and that understanding includes knowledge of the semantic properties which make that cognition correct.

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This premise stakes out an apparently substantive position concerning logical understanding:

in central cases, logical understanding involves *knowledge* of the relevant *semantic* properties.

So, if this premise is to be evaluated, we need to know what this knowledge of semantic properties is. The fundamental problem with (U1) is that, while Campbell intends to invoke a rich notion of knowledge of semantic properties, the notion is not sufficiently explained. Here it is worth noting some views about what logical understanding might consist in. One philosophical approach to the understanding of 'and' attempts to explain such understanding purely in terms of cognitive patterns. The simplest such view is that understanding of 'and' consists in a disposition to accept (correctly) arguments conforming to the patterns, *i.e.*, to be disposed so that arguments conforming to these patterns are operative:

$$\begin{array}{ccc} \frac{P}{Q} & \frac{P \text{ and } Q}{\therefore Q} & \frac{P \text{ and } Q}{\therefore P} \\ \therefore \underline{P \text{ and } Q} & & \end{array}$$

More sophisticated versions of this approach might invoke the notions of competence,⁹⁴ primitive compulsion,⁹⁵ or some other such more robust notion. Versions might also restrict the circumstances under which the arguments are accepted. Versions might also involve reference to the intentional properties of and itself. Now such a competence could *produce* knowledge, most obviously by playing a role in inferring the conclusion of one of these arguments from that argument's premises. But the competence *itself* need not *be* propositional knowledge.⁹⁶ One *could* then simply stipulate that 'knowledge of semantic properties' refers to

⁹⁴ See Chomsky as well as Davies' "Tacit Knowledge" series of articles.

⁹⁵ See Peacocke, *A Study of Concepts*.

⁹⁶ On some views, such a competence would be, or would be grounded in, "implicit" knowledge, which could be propositional. But nothing said here would require that.

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such competences, or what have you. But if there were no further sense in which the competence were knowledge, this would be a somewhat misleading stipulation.

Campbell's intended interpretation involves a richer notion of knowledge of semantic properties. Campbell agrees with the dispositional approach to minimal logical understanding, to the extent that both he and that approach hold that minimal logical understanding of a logical constant require that a thinker be disposed to reason in certain logically correct patterns with that constant. He agrees with a competence approach, in that he thinks that the understanding consists in what causes and justifies the disposed acceptances. But Campbell takes a further step. He thinks that there is something a thinker *knows* — in the case of a truth-functional connective, a truth-function or truth-table. And he thinks that this knowledge causes and justifies the disposed reasoning *because* the knowledge is of the semantic facts that makes those arguments valid.

Knowledge-Representation is Required for Campbell's Argument

As I will now explain, the construal of logical understanding in terms of knowledge distinct from dispositions or other cognitive capacities is very important for Campbell's argument. There is a logical difference between the arguments in integration and misintegration. Since intentional type gives logical form, there must be a difference in intentional type. However, as discussed in [Separation of Content's Logical and Cognitive Significance](#), the Disjunctivist aims to establish that the intentional-type difference between integration and radical misintegration is a directly cognitively explanatory difference. And, a logical difference does not necessarily suffice for a directly cognitively explanatory difference. So, there are two relevant possibilities. Either (1) the disposition is the same in the two cases, producing the same result, viz. pairing of two representation-instances, because of some

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 directly cognitively explanatory intentional property shared by the representation-instances,
 or (2) the dispositions in the two cases are distinct, producing the same result, but in response
 to different intentional types.

Suppose for the moment a simple view of minimal logical understanding — false but
 illustrative — that, in central cases, such understanding consists, not in knowledge of
 coreference, but in having correct pairing dispositions. More specifically, suppose that in
 central cases, the disposition triggered in the successful case pairs representations only if the
 representations corefer in virtue of logical form. Now, it might be that when triggered in any
 situation, this disposition produces pairing only if it is correct. In that case, this disposition
 does not producing the mistaken pairing in misintegration. So, (2) would obtain. Or, the
 disposition might be guaranteed to produce correct pairing only in central cases. And
 misintegration might be a non-central case in which that disposition produces mistaken
 pairing. Then, (1) could obtain. So, without further argument, a dispositional view of minimal
 logical understanding would not establish that the representations in integration and
 misintegration have different cognitively explanatory intentional types.

We can put these points in terms of the spelled-out Understanding Argument. Recall

- (U8) So, in radical misintegration, Oscar lacks knowledge of coreference.
- (U9) So, knowledge of coreference is a constituent of Oscar’s understanding of the
 demonstratives in successful integration, but not of the demonstratives in radical
 misintegration.
- (U10) So, Oscar’s minimal logical understanding in successful integration is type-distinct,
 in an epistemically explanatory way, from Oscar’s understanding in radical
 misintegration.

We can rewrite U8, U9, and U10 in terms of pairing dispositions instead of knowledge, as
 follows.

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(U8*) So, in radical misintegration, Oscar's dispositions result in mistaken pairing.

(U9*) So, the dispositions which constitute Oscar's understanding of the demonstratives in successful integration produce correct pairing in successful pairing, but the dispositions which constitute Oscar's understanding of the demonstratives in misintegration do not produce correct pairing in misintegration.

(U10*) So, Oscar's minimal logical understanding in successful integration is type-distinct, in an epistemically explanatory way, from Oscar's understanding in radical misintegration.

(U10*) simply does not follow from (U9*). As earlier noted, (U9*) is correct, and, given that logical form is an essential property of intentional type, it follows that that there is a difference in intentional type. But we do not get a difference in intentional type which itself plays a cognitive and epistemic role. (U9*) does not entail any such difference. So, the Understanding Argument as it stands *requires* the notion of knowledge of semantic properties.

No Discursive Formulation

The problem with (U1) is that Campbell does not explain this very important idea of knowledge of semantic properties. The simplest construal is that it is propositional knowledge. However, that cannot work, for two reasons. First, such a requirement hyper-intellectualizes logical reasoning. Primitive logical reasoners, a group including children and perhaps some apes, can engage in rational logical reasoning, but could not think a truth-table. Indeed, few mature adults can (a) on reflection and independently discursively formulate the recursive truth-conditions for sentences whose main connectives are the different logical constants *and* (b) discursively state the relations between the truth-table and the validity and invalidity of different inferences involving those sentences. It could be claimed that such knowledge is "implicit". However, this would not sit easily with the Disjunctivist's focus on experience, consciousness, and subjectivity. The subject is supposed to acquire knowledge of coreference *from conscious experience* and the presence or lack of such knowledge is supposed to correlate or

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constitute a subjective difference. Such knowledge would not be implicit, and it is not clear

how such knowledge would interact with implicit propositional knowledge in producing logical reasoning. Even if I am wrong about the number of adults who could do this, that would be contingent and discoverable only empirically, by psychological research.

Campbell does not explain Causation & Justification

The second problem with the construal of knowledge of semantic properties as propositional concerns the explanatory role that such knowledge is supposed to play. Remember that the knowledge is supposed both to *warrant* and *cause* the basic logical inferences, such as pairing and conjunction-elimination. If the knowledge were propositional, we would be involved in a regress. Basic logical reasoning involves inferential transitions between different propositional states. And indeed, the normal way in which different propositional states interact is by inference. So, the sophisticated propositional logical knowledge would interact *by inference* with the premises and conclusion of the basic logical argument. This would introduce a regress. We would need an explanation of the causation and justification of the inference by which the sophisticated propositional knowledge produced the ground-floor inference.

Now, Campbell is sensitive to the second of these points. He writes:

“The trouble is that the subject engaged in this kind of reflective derivation of the rules from the truth-tables will have to be using deductive reasoning in this derivation. (Cf. Quine 1976).

The sense in which the speaker grasps the justification of the practice need not, though, involve the use of reasoning at all. The point is this: which particular introduction and elimination rules the speaker employs must be systematically causally dependent on which truth-table the subject associates with the sign. So the use of inference rules in connection with a logical constant is systematically dependent on which truth-table you associate with the constant. Change one line of the truth-table the subject associates with the sign, and there is a corresponding change in the inference rules the subject uses in connection with the sign. Moreover, grasp of the truth-table acquaints you with the validation of your practice.” (*Reference* 102-3).

And Campbell does not claim that the knowledge of semantic properties is propositional. But he instead makes claims using unexplained and metaphorical language, such as “grasp of the

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truth-table acquaints you with the validation of your practice.” Presumably by “grasp” and “acquaintance”, Campbell does means neither Platonic/Gödelian intuition of an abstract object which is the function from truth-values to truth-values defined by a truth-table nor sight of a truth-table in a logic textbook or on a chalk board. But he does not say what he *does* mean. I do not know. In addition, the notion of systematic dependence is insufficient. Systematic dependence of inferential dispositions on this knowledge is not enough for the knowledge to warrant the inferences. It matters why there is such a systematic dependence; for warrant, it cannot be happenstance that there is such a dependence (Burge, “Perceptual Entitlement”). Without an explanation of what grasp and acquaintance are, we cannot understand why the systematic dependence obtains, and so cannot understand how the knowledge of semantic properties warrants the reasoning. Lacking such clarification, the notion of knowledge of semantic properties is murky. Without an explanation of what grasp and acquaintance are, we cannot well understand how the knowledge of semantic properties warrants the reasoning. This makes it difficult to know what grounds there are for (U2).

I strongly suspect, though I am not entirely convinced, that a notion of knowledge of semantic properties beyond a competence/dispositional notion is unlikely to play a role in an account of minimal logical understanding. But lacking substantial philosophical explanation, such a notion cannot support radical views about intentional content.

(U2)

(U2) Needs Argument

(U2) Statement & Different Views of Minimal Logical Understanding

Recall:

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(U2) In central cases, the relation between minimal logical understanding, warrant, reasoning, knowledge and semantic properties is the same for nonlogical expressions, including demonstratives, as for logical constants.

(U2) is a key theoretical claim in the Argument from Understanding. It helps to characterize logical understanding of demonstratives in a way that, given the equivocal description of the switch case, entails at least some-type difference between the demonstratives in stable and switch cases. However, I believe that (U2) is extremely problematic. Presumably, logical constants are individuated *as* logical constants by their use in reasoning. At the very least, instances of the constants — aspects of particular mental states — constants are not in causal contact with their semantic values. For their semantic values the truth-functions, abstract objects that do not stand in causal relations to *anything*. But the logical properties of demonstratives are determined partially by their causal relations to a particular subject matter if the unified descriptions of integration and radical misintegration is correct. To the extent that minimal logical understanding of a content relies on those properties of the content that determine the logical properties, one would expect minimal logical understanding of demonstratives and of logical constants to differ. And, as (U2)'s restriction to central cases reflect, there *are* important differences.

Normally one part of minimal logical understanding of any demonstrative instance includes understanding which other demonstrative instances it logically corefers with.⁹⁷ And the minimal logical understanding includes understanding of the implications of that logical

⁹⁷ Remember that “logically corefers” means “corefers in virtue of logical form” and that coreference in virtue of logical form requires a substantive account of what the logical form *is* that guarantees the coreference. It is agreed by the parties to the dispute that one demonstrative instance does logically corefer with some demonstrative instances and not with others. Different theories of demonstrative content provide different explanations of demonstrative coreference in virtue of logical form. According to the Disjunctivist, demonstrative instances corefer when they are of the same object-constituted type. According to the occurrence-based theorist, demonstratives corefer in virtue of logical form if they are of the same occurrence-based type.

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coreference. The other side of the coin is that normally minimal logical understanding of any demonstrative instance *i* includes both understanding of which other demonstrative instances *i* does *not* logically corefer and also understanding of the implications of the lack of logical coreference. In particular, it includes understanding that it is logically contingent whether or not the relevant demonstrative instances corefer. If minimal logical understanding of demonstratives is like minimal logical understanding of logical constants, then a thinker always has understanding of these logical possibilities. In radical misintegration, Oscar patently lacks such understanding. If he had it, he would not mistakenly pair the demonstratives and the demonstratives would seem to be capable of disreference.⁹⁸ Given that the initial description of the stable cases' logical form is correct, Oscar pairs the demonstratives because he misunderstands the demonstratives; he mistakenly understands them to corefer in virtue of logical form. The lack of knowledge in radical misintegration already demonstrates that there is a difference between minimal logical understanding of demonstratives and minimal logical understanding of logical constants.

(U2) & the Disjunctivist View of Understanding

I have formulated (U2) to allow for the just-discussed difference between minimal logical understanding of demonstratives and logical constants. In *Reference and Consciousness*, there is no restriction to central cases on the claim that logical understanding of demonstratives; Campbell's earlier article "Is Sense Transparent?" strongly suggests such a

⁹⁸ One might think that in radical misintegration, the demonstratives *do* seem capable, to Oscar, of not coreferring. If so, then they also seem capable of disreference in the successful case. Either such appearance is compatible with minimal logical understanding of guaranteed coreference of demonstratives, or it is not. Either way, this does not help to defend the Understanding Argument. If the apparent possibility of noncoreference is incompatible with knowledge of guaranteed coreference, then, in the *stable* case, Oscar lacks knowledge of guaranteed coreference. So then (U1) or (U2) is false. Or, the knowledge and the appearance of possible disreference are compatible. If the appearance of the possibility of noncoreference is compatible with knowledge of guaranteed coreference, then that appearance does not amount to knowledge that both coreference and noncoreference are logically possible. For one cannot know both that coreference is logically guaranteed *and* also that noncoreference are logically possible

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restriction, however. In any case, given (U1) and (U2), we can conclude only that: *in central cases*, minimal logical understanding of demonstratives of different type includes knowledge that their potential coreference is logically contingent. The obvious thing for the Disjunctivist to say is that radical misintegration is not a central case, and so Oscar's lack of logical knowledge is consistent with (U1) and (U2). Disjunctivism holds that the intentional aspects of some mental states are partially constituted by what they are of, whereas others are partially constituted by the fact that they are illusions or hallucinations. The Disjunctivist might claim that minimal understanding of these different kinds of intentional properties has different constituents. For the intentional types that actually represent something, and are not partially constituted by a perceptual error, understanding consists in knowledge. For the intentional type partially constituted by illusion or hallucination, understanding consists in the illusion or hallucination. I will call this view of the minimal logical understanding of demonstratives the dual view, since it posits two different varieties of understanding. On this interpretation of (U2), the Understanding Argument is valid.

(U2) Needs Argument

There is reason to doubt the Disjunctivist construal of what makes a case central for logical reasoning. One might have thought, as far as logic and reasoning go, what makes a case central or not is not the state of the environment, but the state of the reasoning competences, attention, energy, and other similar mental factors. Those factors could be the same whether or not a reasoner accurately perceived a bird's flight. So if those were the factors, radical misintegration could be a central case, and then would falsify (U1). And, the Disjunctivist-friendly understanding seems very close to Disjunctivism itself. First, the Disjunctivist posits a radical difference in kind between two apparently very similar mental

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states. Minimal logical understanding of *some* contents is constituted by *knowledge* of some of the representation's semantic properties, while minimal logical understanding of *other* contents is constituted by *misrepresentation* of some of the representation's semantic properties. And, that misrepresentation consists in representing the contents as having those semantic properties that they have in the cases of successful understanding. Second, whether understanding is knowledgeable or mistaken is determined by whether or not the understanding-state is related to particular objects. And, the general conditions required for correcting the misrepresentation in minimal logical understanding and for correcting mistakes about intentional-types are the same. Both require empirical evidence of the distinctness of the two confused objects. The sort of case or argument that would establish the dual view of minimal logical understanding would be very similar to the sort of case or argument that would establish Disjunctivism. One would need to find an environmental difference that *compelled* a difference in understanding without the subject's being able to causally differentiate the difference.

Now this dual view of minimal logical understanding does not include any claims about the intentional types of the understood states. And it does not include any claims about the environmental conditions which determine whether one has knowledgeable understanding or mistaken understanding. So the dual view is distinct from Disjunctivism. However, the sort of case or argument that would establish the dual view of minimal logical understanding would be very similar to the sort of case or argument that would establish Disjunctivism. One would need to find an environmental difference that *compelled* a difference in understanding without the subject's being able to causally differentiate the difference.

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In addition, on the dual view, the central cases of minimal logical understanding of demonstratives are very different from the central cases of minimal logical understanding for logical constants. Central cases of minimal logical understanding are cases in which a thinker's brain has developed normally and is intact, the thinker's working memory is entirely available, there is no motivated reasoning, the thinker's processing mechanisms are functioning optimally, and the like. The state of the environment is not itself part of the central case. Of course, the environment can affect the mechanisms involved in reasoning with constants, and so can make a *causal* difference to whether the case is central or not. But the environment is not itself included in the centrality-determining factors. The environment is relevant *only* insofar as it affects another centrality-determining factor. But, on the Disjunctivist construal of central cases for demonstratives, the environment and the thinker's relations to it *are* themselves a centrality-determining factor. This is a large difference. Campbell acknowledges this difference (*Reference* 127). He correctly notes that this difference is logically consistent with minimal logical understanding of demonstratives being similar in other ways to minimal logical understanding of logical constants. In particular, the difference is logically consistent with both understandings including knowledge of salient logical properties.

Nonetheless, the Understanding Argument is called into question by the fact that on the dual view, the environment and the thinker's relations to it *are* themselves a centrality-determining factor for logical understanding of demonstratives but not for logical understanding of constants. This difference highlights the fact that there are important ways in which those minimal logical understandings differ. And, if those understandings can differ, then the question is raised, if they can differ concerning case-centrality, why cannot they differ in other ways, such as whether they consist in knowledge or warranted belief? Before

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concluding that they do not differ in this respect, we should be given an argument. Let me elaborate this point.

We have noted two ways in which minimal logical understanding of demonstratives and of logical constants might be the same. First, the same kinds of cases may be central. Second, in both cases understanding may consist in knowledge. I do not think that the minimal logical understandings can be the same in both ways. Suppose that minimal logical understanding of demonstratives and of constants are the same in terms of which cases are central. Now the environment does not make a difference to whether or not a case is central for minimal logical understanding of logical constants. So, the environment does not make a difference to whether or not a case is central for minimal logical understanding of logical constants. So, minimal logical understanding of demonstratives in integration and radical misintegration consists in the same state. Now, in radical misintegration Oscar does not have knowledge of coreference. So, in radical misintegration, minimal understanding logical understanding of demonstratives does not consist in knowledge of coreference. So, in integration, minimal understanding logical understanding of demonstratives does not consist in knowledge of coreference. So, if minimal logical understanding of demonstratives and logical constants are the same in terms of which cases are central, then they are not the same in which state they consist in: minimal logical understanding of constants but not of demonstratives would consist in knowledge.⁹⁹

So, there *is* a non-contradictory understanding of (U2) which is consistent with the lack of logical knowledge in radical misintegration, and which makes the initial steps of the Understanding Argument valid. However, the *truth* of this interpretation of (U2) is entirely

⁹⁹ Here I am bracketing my argument against (U1), my argument that logical understanding of constants does not consist in knowledge.

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unobvious. For the Understanding Argument to be used to establish Disjunctivism, this interpretation would first have to be argued for.

Possible Argument for (U2)
Disjunctivist: Logical Understanding is of Coreference only if (U2) is True

Campbell says little to explain what would be wrong with the fallible competence view of minimal logical understanding. The following paragraph, part of the text earlier quoted, may bear on the issue.

“In the case of a logical constant, on a Classical View of the matter, understanding the term requires that you know the truth-table for the term; that you know which truth-table it has. It would not be enough, for an understanding of the logical constant, merely that you have grasped something which is reliably though not invariably correlated with the existence of a truth-table for the term.”(128)

I can see two ways to construct from this paragraph an argument against the fallible competence view. The first argument is that the competence constituting minimal logical understanding is *infallible*. On this reading, the Understanding Argument does not avoid appeal to infallibility, after all. The appeal to infallibility left the stage but has returned in argument for one of the premises of the Understanding Argument.

However, the appeal to infallibility does not quite fit what Campbell actually writes. Campbell contrasts two states, one of which is supposed to be enough for minimal logical understanding, the other of which is not. The difference that Campbell highlights lies, not in strength of the state’s warrants, but in their objects. One state is understanding of the truth-table itself. The other state is understanding of something reliably correlated with the truth-table (whatever such a reliable correlate might be). And Campbell thinks that the latter state cannot provide minimal logical understanding.

Let us consider how this contrast in the *object* of minimal logical understanding might be used against the fallible competence view. For demonstratives, what might concern

Campbell about the common-factor view is that the understanding would be, not of

coreference, but of something reliably correlated with coreference. So Campbell would think that the move to fallible competence does not help, because that picture would be mistaken about the *object* of minimal logical understanding. Let me spell out this argument. The key idea is this: minimal logical understanding of an intentional type is of a property had by all instances of that intentional type. So if the demonstrative pair in integration were of the same intentional type as the demonstrative pair in radical misintegration, then understanding would be of an intentional property common to the demonstrative pairs. Since the demonstratives in radical misintegration do not corefer, that understanding could not be of coreference. The understanding could not be of the identity of the referents. In premise/conclusion form, we have:

- (U1) Minimal logical understanding of a logical constant warrants particular patterns of logical cognition with that constant, and that understanding is of the semantic properties which make that cognition correct.
- (U2) At least for logical cognition, in central cases, the relation between understanding, warrant, reasoning, knowledge and semantic properties is the same for nonlogical expressions, including demonstratives, as for logical constants.
- (U3) At least in successful integration, which is a central case, minimal logical understanding of demonstratives warrants pairing with demonstratives of the same type.
- (U4) Pairing is validated by coreference.
- (U5) So, in successful integration, minimal logical understanding of the demonstratives is of coreference.
- (U6) The demonstratives in radical misintegration do not corefer.
- (U7) Minimal logical understanding of an intentional type must be of some semantic property that is common to all instances of the type.
- (U8) Suppose that the demonstrative-pair in radical misintegration is of the same intentional type as the demonstrative pair in successful integration.
- (U9) Then, minimal logical understanding of that intentional type is of a semantic property common to the two pairs.
- (U10) So then minimal logical understanding of that intentional type is not of coreference, but at most of something reliably correlated with coreference.
- (U11) So the supposition is false, and the demonstrative pair in radical misintegration is not of the same intentional type as the demonstrative pair in successful integration.

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Reply: A Fallible Pairing Competence Can Constitute Understanding of
Coreference**

As I will shortly argue, Disjunctivism has difficulty explaining how identity is mistakenly represented in radical misintegration, because it denies the existence of any common factor between integration and radical misintegration. Now, I am going to explain how a common factor can explain the representation of identity, and the logical understanding of coreference, in both integration and radical misintegration.

Note, first, that on a common factor view, a thinker has an ability-general demonstrative ability to represent particular bodies. Different exercise of this ability enable reference to difference bodies, as follows. On a given occasion, the ability distinguishes parts of the environment that are not part of the body from those that are. It does so by distinguishing those parts of the environment that (1) are all continuously connected to one another, (2) bounded and hence separated and not continuously connected to any other parts of the environment, and (3) move through space continuously, from other parts of the environment. So one function of this ability is to distinguish between one body and two bodies, and to specify the extent of one body. In addition, any thinker needs at least a minimal ability to represent identity and diversity, independent of the ability to represent any particular object, or the ability to accurately discriminate any particular object from its environment.

I think that both the connection and separation ability and the ability to represent identity and diversity are deployed in integration. When a schematic ability-general type is applied to produce a demonstrative-representation instance, these two representational abilities are what suffice for the representation of the putative referent as a unitary self-

identical whole. Thus, suppose a rock is demonstratively referred to as a particular object. The connection and separation ability specifies a part of the environment, the part that in fact makes up the body of the rock. It does so by representing all of the rock's parts as connected to another, as connected to nothing else, and so forth. The ability to represent identity and diversity represents those parts as the parts of one self-identical object.

Now, part of the function of a schematic ability-general demonstrative is to produce *multiple* representation-instances that are of *one* object and that can rationally be paired with one another, *i.e.*, representations that can rationally figure in reasoning patterns that are correct because those representations corefer. So, part of the function of the schematic demonstrative ability is to produce multiple instances of any occurrence-based type of which it can produce one instance. So, we need to explain how exercise of the schematic ability can produce multiple instances that are representations as of the identity of their referents, and how understanding of those instances can be of their reference. This can be explained by reference to the connection and separation ability and the identity ability.

The light that reflects off a rock and its surrounding environment carries information about the connection of the rock's different parts and their separation from the rest of the environment. An application of a demonstrative ability specifies a portion of the environment as internally connected and separated from the rest of the environment by extracting that information. So, we have the production of a demonstrative instance by the exercise of a demonstrative ability. The events in the ontogeny of that application carry information about separation and connection in the environment. That information is used by the application of the demonstrative ability to specify which portion of the environment is referred to by the demonstrative instance. So, if the same events figure in the ontogeny of different

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demonstrative instances, then those different demonstrative instances rely on the same connection and separation information. So, just as the identity ability can be used with *one* demonstrative instance to represent the portion of the environment as one object, so the identity ability can be used with multiple demonstrative instances to mark that the different demonstrative instances each refer to the same portion of the environment as a particular object. So the identity ability can mark the coreference of the different demonstrative instances.

In radical misintegration, there is a failed attempt to constitute different demonstrative instances as instances of one occurrence-based type. In radical misintegration, different demonstrative instances manage to refer to different entities, and to that extent constitute successful applications of a schematic ability-general demonstrative type. But, the different demonstrative instances are produced in pursuit of the function of producing multiple instances of the *same* occurrence-based type. And, that function is not fully realized. The different instances are of different occurrence-based types. However, because they are produced in the service of producing multiple instances of the same occurrence-based type, the ability-general grouping and division ability and the ability-general ability to represent identity are both employed in the connected production of the different instances. So, because the two demonstrative occurrences guide their reference *via* the attributive body *and* the same information from a shared ontogeny, *one* of the demonstratives' occurrences is to corepresent. Minimal logical understanding consists in part in competence with respect to that function. It also includes a warranted, normally accurate, and fallible competence to reason as if that function is realized. So, there is a representation of identity.

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These observations about the representation of identity and understanding of coreference cohere with the view of demonstrative content hypothesized in [Understanding Argument does not establish Disjunctivism](#). There, I suggested that the demonstrative instances in integration and radical misintegration may be at least partially of the same occurrence-based type because of commonalities in their psychological ontogenies. And I suggested that pairing capacities may be responsive to that occurrence-based commonality. Here, I have elaborated on what that occurrence-based commonality could be, in a way that begins to explain how pairing could be warranted by responding to that commonality.

U2 has bad consequences

I have argued that Campbell does not succeed in establishing (U2). I am now going to argue against (U2).

High/Low Standard

Recall the dual view of minimal logical understanding which, I suggested, the Disjunctivist might appeal to, to explain what minimal logical understanding is, in integration and in radical misintegration. On that view, for the intentional types that actually represent something, and are not partially constituted by a perceptual error, understanding consists in knowledge. For the intentional type partially constituted by illusion or hallucination, understanding consists in the illusion or hallucination. One problem with (U2) is that it is not obvious that associating an illusion with a demonstrative representation provides *understanding* of the demonstrative. If anything, the association seems to provide *misunderstanding*. This is a dialectical problem for the Disjunctivist. The Disjunctivist wants to argue that, in certain cases, minimal understanding is demanding, requiring knowledge and not merely fallibly warranted belief. But that standard is not met in these cases. So, why is the standard for

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 understanding in one case *so low*, requiring *misunderstanding*, and in another case *so high*,
 requiring knowledge?

Could the Disjunctivist argue that, in radical misintegration, Oscar does not understand the demonstratives? As discussed in The Understanding Argument, it is at least arguable that Oscar to some degree misunderstands the demonstratives. However, minimal logical understanding is, by definition, that understanding of a content's logical properties that is required to think that content. And since Oscar can think the demonstratives in radical misintegration, he has minimal logical understanding.

No Explanation of the Content that Represents Identity and Warrants Pairing

Minimal logical understanding in radical misintegration does not consist in knowledge of coreference and the possibility of disreference. This raises the question, what *is* minimal logical understanding in radical misintegration? Minimal logical understanding, according to Disjunctivism, produces reasoning that is validated by what the understanding is *as of*. Since minimal logical understanding in radical misintegration produces pairing, that understanding should be of coreference. So in radical misintegration, there should be a state that helps to enable the demonstrative thoughts, produces and warrants their pairing, and is *as of* coreference. I will argue that if Disjunctivism is correct, there is no such state — there are states *as of* coreference but they are not appropriately positioned to produce or warrant pairing. Also, it is plausible that if Understanding-Argument-Derived Disjunctivism is correct, warrant for pairing in both integration and radical misintegration is *aposteriori* and concerned with the identities of the particular referents. But it is plausible that if the unified description of integration and radical misintegration is correct, the warrant is *apriori* and does

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not involve knowledge of the identities of the particular referents. And as we will see, there are other errors in radical misintegration that Disjunctivism has trouble accounting for.

Appealing to the perceptual mistake in describing Oscar's minimal logical understanding in misintegration does not meet the explanatory requirements on an account of Oscar's minimal logical understanding. Rather, it merely shifts the problem for the Disjunctivist. Recall that the minimal logical understanding is responsible for (1) the apparent identity of the different demonstratives' different referents and (2) the mistaken pairing. And the problem for the Disjunctivist is that the normal minimal logical understanding does not explain the apparent identity or the mistaken pairing of the conceptual demonstratives. Disjunctivism needs to specify which aspect of the conceptual intentional type of the demonstratives is as of identity.

Now, the Disjunctivist claims that there is a perceptual illusion of identity, and that Oscar's minimal understanding consists in Oscar's reliance on that illusion in understanding and reasoning with the different demonstratives. But, as I will now explain, Disjunctivism has trouble explaining what the perceptual illusion consists in. That is, Disjunctivism needs to specify which intentional aspect of Oscar's perceptual states is as of identity. At the *perceptual* level, sameness of perceptual intentional type functions to represent identity, and difference of perceptual intentional type functions to not represent identity or diversity. So, if there *were* sameness of perceptual intentional type in radical misintegration, then that sameness could be the intentional aspect of perception which is as of identity.

For several reasons, Disjunctivism cannot claim that sameness of perceptual type is the perceptual intentional aspect as of identity. First, there would be an asymmetry in Disjunctivism's treatment of sameness of perceptual type and sameness of conceptual type.

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Same conceptual type *would* guarantee coreference, while sameness of perceptual type would *not*. This asymmetry would require explanation. Second, the Disjunctivist wants to claim that singular perceptual intentional types, as well as singular conceptual intentional types, are fully object-constituted. If the perceptual intentional types in radical misintegration were fully object-constituted, then they would not be of the same type. Third, sameness of perceptual type contradicts purely conceptual Disjunctivism. For, part of the demonstratives' fundamental type is their minimal logical understanding. And, according to the Disjunctivist, that type is at least partially inherited from the singular experience-tokens relied on to understand the demonstratives. Now, if the singular experience-tokens in successful integration are of the same type as one another, and the singular experience-tokens in radical misintegration are of the same type as one another, then there is an aspect of minimal logical understanding of the conceptual demonstratives that is the same across the cases: in both cases, the conceptual demonstratives rely on singular experience-tokens that are of the same type as one another. So Disjunctivism would be falsified. And, integration reasoning would not be a venue in which object-constitution played an epistemically significant role, because the relevant explanatory state would be the same across the different cases — in all cases, the relevant explanatory state is: reliance on singular experience-tokens of the same type as one another.

Difference of perceptual type is not an aspect of intentional type which is as of identity. So, Disjunctivism must posit some further perceptual intentional aspect which *is* as of identity. However, positing such a representation is problematic for the Disjunctivist position. First, it is not obvious that there *are* perceptual intentional aspects that are as of identity. Second, the presence of such a representation is inconsistent with the conjunction of

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the Disjunctivist description of representational form in successful integration and the claim

that the only explanatory difference between successful and radical misintegration is worldly.

In radical misintegration, the posited perceptual identity representation cannot be caused by

the fact that the different singular experience-tokens are of different type. In fact, there is

nothing about the different singular experience-tokens that could cause the posited identity

representation. So, the posited identity representation must be caused by other perceptual

processes. Now, could there be such an identity representation in successful integration?

Suppose that there were not. Then, there would be difference in mental causal structure

between successful and radical misintegration. That difference could explain the difference in

intentional types. So there would be no need to explain the difference in types in terms of

object-constitution of the types. But, it is quite plausible that there are no differences in

mental causal structure between successful and radical misintegration. The whole point of the

description of radical misintegration is that the perceptual system is not differentially

responsive to successful integration and radical misintegration. But there would have to be

some such differential response, to produce the supposed difference in perceptual causal

structure. So, there is no difference in perceptual causal structure between successful

integration and radical misintegration. So, because in radical misintegration there is a

perceptual identity representation that is not produced by the perceptual types and which

Oscar relies on to understand the conceptual demonstratives, there is also in successful

integration a perceptual identity representation that is not produced by the perceptual types

and which Oscar relies on to understand the conceptual demonstratives. This is a big problem

for the Disjunctivist argument and conclusion. It means that there is an important perceptual

type-sameness between the two cases. And, it means that there is an important intentional-

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type-sameness between the demonstratives in successful and radically failed integration: both

rely, for their understanding, on the perceptual identity representation or operation just posited. So Disjunctivism would be falsified. And, integration reasoning would not be a venue in which object-constitution played an epistemically significant role, because the relevant explanatory state would be the same across the different cases – in all cases, the relevant explanatory state is: reliance on singular experience-tokens of the same type as one another.

The argument can be summarized as follows. The Disjunctivist needs to posit an intentional aspect *as of* the identity of the demonstratives' referents. The Disjunctivist also needs to claim that, in successful integration, the intentional aspect *as of* the identity of the demonstratives' referents is due to the type sameness¹⁰⁰ of the demonstratives. The Disjunctivist also needs to claim that there is no difference in mental causal structure between the cases of successful integration and radical misintegration. It follows that the intentional aspect *as of* identity in radical misintegration is due to the differently typed demonstratives. But, differently typed singular representations are not representations *as of* identity.

Disjunctivism does not account for Apriority and Generality of Pairing-Warrant Orientation

In this section, I am going to argue that, in general, warrant for pairing is *apriori* and general. I am going to argue that, if the unified description of successful integration is correct, then the warrant for that pairing should also be *apriori* and general. And I am going to argue that, if Disjunctivism is correct, that warrant is *aposteriori* and particular. Entailing that warrant pairing is *aposteriori* and particular poses two problems for Disjunctivism. First, it

¹⁰⁰ That is, on *their* view, the intentional aspect *as of* identity is due to the type-sameness. It is open to other views to appeal to more than demonstrative-type to explain which intentional aspect(s) is (or are) of identity. As suggested earlier, the occurrence-based aspects of the type and their relation to guiding attributives may also play a role.

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A thinker benighted about Caesar's history and identity can think all of these propositions, and can rationally accept the argument. In particular, the thinker can have warrant to pair the Caesar instances even while so benighted. So the warrant does not depend on *aposteriori* knowledge of Caesar's identity. So the second premise of the argument of the previous paragraph is false. The unsound argument also demonstrates the generality of the warrant for pairing. The warrant is general in that knowledge of the identity of the *particular* referent need play no role in warranting the pairing. The generality of the warrant helps to explain its *apriori* character. A rational thinker has understanding of what identity is, an understanding that is independent of the representation of any particular object. This understanding is constitutively included in any given singular representational ability, facilitating that representation's being a representation as of a single self-identical entity.¹⁰¹ And it is that aspect of a given singular representation that provides the warrant for pairing. Now, the understanding of what identity's implications are is *apriori*. And so the inclusion of a representation of the identity, general with respect to the particular referent, plays a role in the *apriori* warrant.

Warrant for Demonstrative Pairing Dialectic

Of course, warrant for pairing demonstratives is *aposteriori* if Disjunctivism is correct. We are interested in determining whether or not Disjunctivism is correct. So, in this section, I want to discuss considerations that do not assume the truth or falsity of Disjunctivism and which bear on whether or not the warrant is *apriori* or *aposteriori*. As discussed in the sections

¹⁰¹ I do not think that a particular representational ability's reliance on the ability to represent identity provides a complete explanation of the facts that pairing warrant is general and *apriori*. In the [Solution](#) chapter, I discuss cognitive structures that help to explain how it is that the difference exercises of a representational ability can be guaranteed to represent the same entity if any. These cognitive structures are shared by different content. So they are general, too. The topic requires further investigation.

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[Demonstrative Cases](#) and Logical Form of Demonstratives & Demonstrative Reasoning, there is pairing error in radical misintegration only if the unified description of the successful integration cases is correct. In the different integration cases, a particular object has a range of effects on the thinker's sensory organs: effects across the visual field, effects on visual and haptic sensory organs, and effects over time. In each case, multiple demonstrative instances are produced. Each refers to the distal object and relies on at least some of the distal object's effects on the perceptual system to achieve that reference. According to the Unified Description of such a case, the different demonstrative instances all corefer in virtue of logical form, so that it is rational to pair them. The following discussion takes place on the assumption that the Unified Description *is* correct; if that assumption is false, the Understanding Argument for Disjunctivism fails and the cases do not present a counter-example to any Rationalist claims about pairing.

Follows from U2 + Apriority and Generality of Understanding of Constants

There are several reasons to think that demonstrative pairing in integration cases has *apriori* warrant. Note, first, that our competence with logical constants is *apriori*. Remember that (U2) is:

- (U2) At least for logical cognition, in central cases, the relation between understanding, warrant, reasoning, knowledge and semantic properties is the same for nonlogical expressions, including demonstratives, as for logical constants.

So, in central cases, the warrant for pairing demonstratives should be *apriori*.

Examples of Apriori General Warrant for Demonstrative Pairing

Second, there are many examples of apparently *apriori* warrant for demonstrative pairing. Recall that, in the section [Valid Arguments Involving Demonstrative-Pairing](#), I provided examples of a variety of valid arguments involving pairing of demonstrative

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instances. And as remarked, it is quite plausible that warrant for accepting those arguments is *apriori*. And since pairing-warrant is a constituent and factor of warrant for acceptance, pairing-warrant for demonstratives can be *apriori*.

General Explanation of Apriority and Generality Applies to Demonstratives

Third, the general type of explanation for logical guarantees of coreference and warrant for pairing applies to demonstratives. The general explanation is as follows. An ability to think about an object includes an ability to reason about, and in particular to reason logically about, the object. This requires that the ability to think about the object be capable of being exercised to produce multiple representation instances that are guaranteed to corefer and whose sameness and difference of intentional type is rationally and *apriori* accessible. In the sections [Schematicity is Compatible with Demonstrative Coreference in virtue of Logical Form](#) and [Direct Representationalism is not merely a notational variant of Intermediary Representationalism](#), we saw how occurrence-based types could be so individuated that they do determine coreference and are *apriori* accessible.

And, warrant for demonstrative pairing is epistemically similar to other warrants for pairing insofar as both are compatible with a great deal of empirical error and do not require knowledge of reference. Error is possible about shape, texture, size, location, motion, color, kind, and existence, for example. Many parts of the demonstrata might not be believed to be part of the object, or even be believed not to be part of the object. Thus, a thinker might mistakenly believe many actual parts of a demonstrated object not to be parts of the object. Parts of other objects may be believed to be parts of the demonstrata. A thinker may have false identity beliefs involving the demonstrative. For example, the thinker may mistakenly identify a currently perceived object with some other object she was already capable of

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thinking about. In any of these cases, there is *a priori* warrant for pairing different

demonstrative instances.

Error in Radical Misintegration is Only Reason to think Warrant is Aposteriori

The only reason to suspect that demonstrative-pairing warrant might be *aposteriori* are the radical misintegration cases. The argument would be as follows.

1. Whether or not it is correct to pair two demonstratives depends in part on their relations to the environment.
2. So, warranted pairing of demonstratives requires sensitivity to whether or not the environment is conducive to the demonstratives' coreferring in virtue of logical form.
3. Such sensitivity is empirical.
4. Therefore, pairing warrant is *aposteriori*.

The step from 1. to 2. is mistaken. As Burge points out in "Individualism and Self-Knowledge", knowing whether or not p does not require being sensitive to the conditions that determine whether or not p . It only requires being sensitive to whether or not p . Again, to be warranted in logical reasoning, one's reasoning needs to differentiate valid and invalid arguments. And, such reasoning does involve *some* sensitivity to what makes an argument valid or invalid. For such reasoning involves sensitivity to *other* logical properties — which logical constants figure in the constituent propositions, the structures of the propositions, and the like. However, it is not at all clear that it is necessary that a logical reasoner be sensitive to what makes it the case that a given logical constant is that logical constant, and not something else. One can know whether or not there was a loud noise, without knowing how that loud noise was caused, being in a position to discover the cause of the noise, or knowing that noises propagate *via* changes in air pressure. One can know that an object is a certain shape, without being able to discover how it acquired that shape, or what, at a molecular level, having that shape consists in. Let us consider how this applies to warrant for demonstrative pairing. In any situation besides a radical misintegration situation, a standard pairing capacity can

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differentiate between demonstratives that corefer in virtue of logical form and those that do not. No empirical evidence about the environment is required for this sensitivity. It is true that, if one is in a radical misintegration situation, one can reliably pair correctly only if one discovers the radical misintegration. But that does not mean that, when one is not subject to radical misintegration, one needs to *discover* that one is not subject to radical misintegration. One could have a default warrant for proceeding as if one is not subject to radical misintegration.

While the step from 1. to 2. is mistaken, an explanation of warrant-pairing that takes into account radical misintegration may deliver the result that the warrant's force depends, in part or in whole, on experience. So, the fact that pairing-warrant is *aposteriori* if Disjunctivism is true is not decisive against Disjunctivism. Rather, the degree to which an explanation of warrant-pairing preserves the warrant's *apriori* status is a consideration to that degree in favor of that explanation.

Summary of Criticisms of the Understanding Argument and Disjunctivism

John Campbell has claimed that Disjunctivism is supported by the fact that it is best able to explain warrant for demonstrative-pairing in light of the possibility of radical misintegration. We saw that purely logical considerations alone do not support the Disjunctivist account of pairing warrant. Campbell makes clear that the argument for Disjunctivism from its account of pairing-warrant is not supposed to appeal to the idea that knowledge requires infallibility. I think that I have reconstructed an argument, the Understanding Argument, that does not make such an appeal and fits Campbell's text. I have criticized this argument on several points. The argument's definition of minimal logical

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understanding employs a notion of semantic knowledge that is unexplained and seems too demanding for minimal logical understanding.

The Understanding Argument also includes the claim that minimal logical understanding of demonstratives, as well as of logical constants, includes such semantic knowledge. This claim is not well-motivated relative to the alternative that minimal logical understanding of demonstratives partially consists in a some sort of fallible pairing competence. Such a pairing competence might, in non-radical-misintegration cases, be capable of always producing correct pairing and dividing on *apriori* grounds alone. It would produce warranted but mistaken pairing only in radical misintegration cases.

In radical misintegration such as failed tracking, Oscar does not know that the demonstratives fail to corefer, and so he lacks knowledge of a central logical property of those demonstratives. So, the Disjunctivist must limit the scope of the claim that minimal logical understanding consists in knowledge. The Disjunctivist must claim that while, in successful integration, minimal logical understanding consists in knowledge, minimal logical understanding in radical misintegration consists in the perceptual illusion of identity. Such an account is *prima facie* implausible and turns out to be very close to the Disjunctivist conclusion. The Disjunctivist also has trouble explaining *why*, in radical misintegration, Oscar pairs the demonstratives and why that pairing is warranted. A necessary condition for either the occurrence of the pairing or its being warranted is that the referents of the demonstratives seem identical to one another. In a case of successful integration, when one believes *a* was over there and *a* is over here, it seems to one that it is the same object that was over there and is over here. There is representation as of identity. On the Disjunctivist account, it is hard to find a mental state that is as of such an identity. For the contents referring to the two objects

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are, on the Disjunctivist proposal, entirely of different type. And contents that are entirely of different type do not present their respective subject-matters as identical. And it is hard to find another state that is consistent with (a) the Unified Description of integration and (b) Disjunctivism. Disjunctivism's difficulty in specifying which state in radical misintegration is as of identity is very problematic. It is in tension both with the Disjunctivist's own view of minimal logical understanding and also with common sense. It is also plausible that pairing warrant is *a priori* and general, *i.e.*, that it does not depend on experience or knowledge of the identity of entity actually referred to by the paired representations. On the Disjunctivist account, such warrant is provided by experientially provided knowledge of the identity of the demonstrata, making the warrant both *aposteriori* and particular.

A view of demonstrative content on which the demonstratives in integration and radical misintegration are partially of the same type and partially of different type is superior to Disjunctivism. The fallible competence picture of the minimal logical understanding thesis surpasses the knowledge of semantic properties picture. I think that these two views fare better on all of the counts laid against Disjunctivism. I will flesh these ideas out in the [Solution](#) chapter.

Solution: Rational Structure and Causal Relations

Normal Univocality Pairing Epistemic Questions

The switch case presents us with a number of questions. Why is the equivocal pairing warranted? What principles besides epistemic transparency, if any, describe the conditions under which a rational thinker can correctly reason univocally and avoid equivocation? Indeed, why is the successful pairing warranted? Is the warrant for pairing, or any element thereof, *apriori*? If so, what are the *apriori* components of the reasoning, and how far do their powers extend? What are the other factors, beyond the control of rational abilities, that determine whether a pairing is univocal or equivocal? In answering these questions, I will conclude that our case of anti-individualist-induced equivocation is consistent epistemic translucency, a restriction of epistemic transparency. Relative to the *correct* presumption of environmental normality, a thinker can, on *apriori* grounds alone, always correctly reason univocally and avoid equivocation.

I think that the ability to successfully reason univocally depends on the ability to think univocally, *i.e.*, our principled and lawful ability to think thoughts involving the same concept or occurrence-based type. In the stable case, Oscar univocally thinks 30-year locust instances and consequently reasons successfully. In the switch case, Oscar equivocally thinks 30-year locust and katydid-instances and consequently reasons equivocally. In my view, the scope of our ability to think univocally is what determines the scope of our ability to reason univocally. So, I am now going to discuss at some length univocal thinking — what it is, how it occurs,

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and how it fails. I will then explain how the warrant for univocal reasoning depends on univocal thinking.

Univocal Thinking

Univocal Thinking

Two representation-instances are univocal if they are of the same representational type, *e.g.*, both 30-year locust-instances. Normally, when a thinker can think any instance of a concept c , he has an ability to think c . Exercises of that ability produce instances only of c ; on the canonical understanding, this is just part of what it is to be an ability to think a concept c . So, when Oscar thinks two 30-year locust-instances, it is not an accident that they are of the same type. The instances were typed by an ability that types instances only as 30-year locust. There is a principled connection between their type-sameness and their production. Thinking univocally is being able in a principled way to think instances of a given concept and to rely in reasoning on the type-sameness of those instances. Instances of the same type are univocally thought if there is a principled explanation of their being of the same type and their being of the same type is accessible to the operations of reason.

Now, whether representation-instances are of the same type is partially due to facts beyond the thinker's control, facts of what the different instances are causally related to. The resources relied on, in thinking two instances, cannot guarantee that the instances' content-relevant causal relations are to the same entities. From the switch case, one might infer that, even when different representation instances are of the same type, that type-sameness does not have a principled explanation. This would be a bad inference. When Oscar thinks a 30-year locust instance, a suite of resources is relied on. Such resources might include association with the phrase '30-year locust' or with perceptual representations of paradigm 30-year locusts. Only in an abnormal environment will reliance on a given set of resources lead to

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Univocal Thinking

different typing of different instances. I will argue for these claims, and then use them to explain warrant for pairing in both stable and switch case.

Stable Univocality

Consider Oscar in the stable case. Oscar becomes able to think 30-year locust thoughts by learning about 30-year locusts. His biology course provides him with many cognitive resources. As we saw, Oscar acquires many beliefs and perceptual representations in the course of learning about the 30-year locusts. These mental states constitute the conception Oscar then associates with 30-year locust. Oscar also can access a textbook containing information about 30-year locusts and a teacher who knows about 30-year locusts.

So, Oscar has a suite of cognitive resources which he exploits in conceptualizing the locusts. As we saw, these resources establish a wide variety of causal relations between Oscar's mental states and the locusts. When Oscar exercises his 30-year locust ability, the ability relies on all of these resources to help type the instance in question. Oscar's belief that there is such a species, and his conception of it, are caused partially by Oscar's direct observation of particular locusts. Oscar's reading and hearing about the locusts causally connects Oscar to the locusts, *via* records of others' more direct interactions with the 30-year locusts. Reliance on the conception and the testimony of others supports ongoing interactions between 30-year locusts and 30-year locust thoughts. In some cases, this interaction is quite immediate, as when Oscar sees an insect and, relying on his conception, correctly judges that insect is a 30-year locust or that insect is not a 30-year locust. In other cases, the interaction is more indirect. Suppose Oscar judges that insect is a 30-year locust and also observes pesticide p killed that insect. These two beliefs may serve as evidence for the belief pesticide p kills 30-year locusts. Then, the belief pesticide p kills 30-year locusts has mediated interaction with

locusts. The interaction is mediated by Oscar's 30-year locust-perceptual beliefs and his perceptual representation of stereotypical 30-year locusts.

This suite of resources is associated with each representation-instance produced by the 30-year locust ability. Through that association, each instance acquires many causal relations to locusts, both in terms of the instance's causal history, and in terms of its possible ongoing more or less direct relations with locusts.

I should note that a thinker's conception may be quite impoverished, inaccurate, and changeable. For example, someone from another country may only learn of the 30-year locusts by hearing a news report about them. The foreigner may subsequently only believe that in some other country, there are some helpful animals called '30-year locusts'. This thinker has the concept 30-year locust, but the conception is almost empty and is partially mistaken. The foreigner may subsequently hear more news reports about 30-year locusts, and update his 30-year locust conception accordingly. Similar changes could occur in the cognitive resources associated with Oscar's 30-year locust ability. Oscar might have misunderstood his teacher or the textbook, and modify his beliefs when apprised of his error. Errors in the text may be discovered. Probably some of the resources Oscar relies on to think 30-year locust are individuated of the concept, but it is difficult to say which; in general, it is a matter for empirical investigation whether almost any of the cognitive resources correctly apply to the 30-year locusts.¹⁰² What is important is that, for the most part, those resources establish causal connections with 30-year locusts and not other insect species.

¹⁰² (Putnam, "It Ain't Necessarily So", "Explanation and Reference", "The Meaning of 'Meaning'"; Donnellan, "Reference and Definite Descriptions", "Proper Names and Identifying Descriptions"; Kripke, *Naming and Necessity*; Burge, "A-I and the Mental", "Bodies", "Intellectual Norms"). The arguments of Donnellan, Putnam, and Kripke concern natural kind terms, not natural kind concepts, but apply to natural kind concepts.

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Univocal Thinking

All of the instances typed by the 30-year locust ability are causally connected to the 30-year locusts. For, the ability exploits the same resources in typing the different instances. And, in the stable case, any instance that exploits those resources is causally connected to the 30-year locusts. It is not an accident that all of the instances typed by the 30-year locust ability have causal connections to 30-year locusts. When the typings of different representation-instances exploit the same cognitive resources, and those typings occur in the mind of a rational thinker in a normal environment with a normal history, then those representation-instances will have causal relations to the same entity or entities. And those causal relations are the ones relevant to determining the content of those representation-instances. This is the central point of my discussion of univocal thinking, so I would like to repeat it. Consider a rational thinker, in a normal environment with a normal history. Suppose the typings of two representation-instances exploit the same cognitive resources. Then, those different representation-instances will have many causal relations to the *same* entity or entities, and those causal relations are the ones that are relevant for representational typing.

Content Relations in Normal and Abnormal Environments **Identity Mistakes in Normal Environments do not produce Anti-Individualist** **Equivocation**

A critic might agree that in the 30-year locust case, when the same cognitive resources are exploited in typing different instances, the different instances all have many causal relations to the same thing. But, the critic might continue, this is just one example. Why should we believe that, *in general*, in a normal environment, the cognitive resources exploited by a conceptual ability determine different representation-instances to have significant causal relations to the same entity or entities? After all, in the switch case, some representation-

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instances relying on some cognitive resources had significant causal relations to 30-year locusts, while others relying on the same resources had significant causal relations to katydids.

In the switch case, anti-individualism-induced equivocation occurs in part because Oscar fails to distinguish katydids from locusts. But, as I will now argue, a mere identity mistake is insufficient for anti-individualism-induced equivocation. To produce equivocation, the identity mistake has to occur in an abnormal environment. I am going to support the importance of environmental abnormality by contrasting identity mistakes in normal environments with the identity mistake in the switch case.

Identity mistakes can occur in normal environments, without producing equivocation. Thus, a thinker might simultaneously encounter two kinds, and take them for one. Plausibly, this is the case with jadeite and nephrite. There are two natural kinds, jadeite and nephrite, that appear and behave the same, and whose distribution overlaps. A thinker might fail to distinguish jadeite from nephrite, and so introduce a concept for what he takes to be one natural kind. The resultant concept jade and each jade-instance represent *both* jadeite and nephrite. For, different jade-attitudes are equally well causally connected, in the content-relevant ways, to both jadeite and nephrite. The cognitive resources relied on by the jade-ability, in typing jade-instances, establish substantial causal connections between that instance and both jadeite and nephrite. Unlike the 30-year locust/katydid case, the jade-attitudes are not divided into two groups with causal relations to different entities. There is not one body of jade-attitudes that has substantial causal relations only with jadeite and another body of jade-attitudes that has substantial causal relations only with nephrite. While a rational thinker will make mistakes with jade, such as believing jade is one natural kind, he will not equivocate

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with jade. For example, such a thinker would be rational to accept the valid but unsound argument

jade is green
jade is one natural kind
 \therefore one natural kind is green

The two jade-instances represent the same thing, *both* jadeite and nephrite, and the second premise is false.

An identity mistake in a normal environment can also produce a putative natural kind concept with *no* referent, as with unitary psychosis. Some nineteenth century German psychiatrists advanced the unitary psychosis view, which held that there was *only one* mental illness, unitary psychosis. All symptoms of mental illness — including those of illnesses as distinct as manic-depression and schizophrenia — were merely different manifestations of this one psychosis.¹⁰³ This identification of all mental illnesses with one another was a massive identity mistake. There is no such thing as a unitary psychosis, and unitary psychosis is not the same concept as mental illness. In this case, it is plausible that so many different kinds were conflated that the concept unitary psychosis and all of its instances simply failed to refer.

Two questions arise about the unitary psychosis example. First, unlike mental illness, unitary psychosis does not refer to the kind mental illness. Why not? I do not have a definitive answer to this question but I think can provide a conjecture that is the beginning of an answer. unitary psychosis was used to represent a kind at a more specific level than mental illness. Unlike mental illness, unitary psychosis was used in a theory which was committed to the existence of a causal process common to all mental illness. In addition, unitary psychosis was implicated in many false attributions and identification, such as this schizophrenic and this depressive both have the same kind of mental illness, unitary psychosis, this patient's

¹⁰³ See (Berrios and Beer; Bruijnzeel and Tandon).

schizophrenia is unitary psychosis in stage s , and that patient's depression is unitary psychosis in stage t . So, it is not just that unitary psychosis figures in causal interactions with many different kinds. In addition, and unlike mental illness, those different kinds are held to be the same in a specific way. Plausibly, the theorist's commitment to there being similarity at that level of specificity, on one hand, and presence of a multitude of kinds at that level, on the other, are key factors in explaining why unitary psychosis does not refer.

The second question is, why is the unitary psychosis case *not* a switch/equivocation case? An alternate description of the case would have it that the unitary-psychosis theorists, first, thought many different concepts, each referring to a distinct particular mental illness, and, second, systematically equivocated among those concepts. Now this alternate description has no plausibility. But it is still an interesting and important question why the description is false. Again, I do not have a complete explanation for the description's implausibility but can provide a conjecture about what I take to be the key factor. The reason that the unitary psychosis theorists did not equivocate among many differently referring concepts of different mental illnesses lies in the causal structure relating unitary psychosis-instances and mental illnesses.

Some unitary psychosis-instances, used in attempts to classify the mental illnesses of different patients, were causally linked to the different patients' different illnesses. However, each unitary psychosis instance was, in significant ways, equally causally linked to a diversity of mental illnesses. For at any given time, one suite of cognitive resources governed all of the psychiatrists unitary psychosis instances and linked each instance to a diversity of mental illnesses. The psychiatrist's belief that there is such a disease, and his conception of it, were caused partially by direct observation of many different illnesses. The psychiatrist's reading

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and hearing about many different kinds of mental illness causally connected him to many different kinds of mental illness, *via* records of others' more direct interactions with those illnesses. Reliance on the conception and the testimony of others supported ongoing interactions between many different illnesses and unitary psychosis thoughts. In some cases, this interaction is quite immediate, as when the theorist, by relying on his unitary psychosis conception, incorrectly diagnoses a given patient. In other cases, the interaction is more indirect, as when observation of different mental illnesses leads to generalizations involving unitary psychosis.

The causal relations established *via* the conception, not the distinctive causal relations of a particular instance, are the relations relevant to determining that instance's content. Take a particular diagnosis of a patient with particular symptoms as having unitary psychosis. The distinctive causal relations that unitary psychosis instance mark the fact that the thinker takes those kinds of symptoms to support an ascription of unitary psychosis. And those distinctive causal relations may go some way towards marking which property, if any, it is the function of the use of unitary psychosis to ascribe. However, one of the representational functions of committal uses of an attributive representation is to classify different entities as the same in some way or other. To capture the commonality, we have to capture which the things the thinker takes as exemplars of the commonality, both now and historically, and the entirety of the conditions under which the concept is, or is not, ascribed. Those causal relations run through the conception. So I think that the jade and unitary psychosis cases are evidence in favor of the hypothesis that the content-relevant causal relations are the ones mediated by the conception.

Are Unnoticed Doppelgänger Switches Abnormal?

We can now consider what features of the switch cases produce unnoticed acquisition of a new concept. In the switch case, one kind is replaced in its entirety by a doppelgänger kind without the switch being apparent to thinkers who interact with instances of either kind. So, before the switch, the resources exploited by the 30-year locust-ability established significant causal relations between one body of attitudes and the 30-year locusts. After the switch, those same resources begin to establish causal relations between the katydids and the attitudes acquired after the switch. Eventually, there is a body of attitudes, all acquired at some point after the switch and whose typing relies on the same cognitive resources as the earlier 30-year locust attitudes. But, these resources now establish significant, content-determining causal relations between the attitudes and the katydids. So the attitudes in this second body of attitudes are katydid-attitudes.

So, one way in which anti-individualist equivocation can be produced is as follows. There are two groups of representation-instances whose typing relies on the same cognitive resources. And those cognitive resources establish causal relations between one group of representation-instances and one entity, and causal relations between the other group of representation-instances and a different entity. For the two groups of attitudes to have such different causal relations, it seems that there must be unnoticed *entire and permanent replacement of one kind by a doppelgänger kind*.¹⁰⁴

Now, species extinction is not abnormal. Nor is it terribly unusual for one species entirely to displace another species. And the occurrence of doppelgänger kinds in one

¹⁰⁴ It should be remembered that the ability-endowed features go beyond the perceptual stereotype. Adopting the 'elm'/'beech' example of (Putnam, 1975), the conceptions a thinker associates with different concepts, such as elm and beech, may contain the same *descriptive* elements. In this case, however, the thinker's cognitive resources include associations with the different words 'elm' and 'beech'. All else equal, without the associations with different names, the thinker would not be able to entertain some attitudes with content-relevant causal relations to elms but not beeches, and others with content-relevant causal relations to beeches but not elms.

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environment is not abnormal. One might conjecture that it *is* abnormal that one kind is entirely and permanently replaced by a doppelgänger kind without an observer noticing. This abnormality is testified to by the fact that the example is complex and has a whiff of fantasy. Suppose the conjecture were correct. Then, when different instances rely on the same cognitive resources for their typing and are thought in a normal environment, their content-relevant causal relations are to the same entity or entities. However, the conjecture is probably incorrect.¹⁰⁵ There probably are situations in which it is normal for doppelgänger kinds to replace one another without a thinker's noticing. For example, we arguably have one concept flu which applies to many different virus strains. And, without microbiological knowledge and technique, these virus strains cannot be distinguished. One year we encounter one virus strain, the next another virus strain. Without the techniques of advanced microbiology, the strains are indistinguishable, *i.e.*, doppelgängers. So in this case we do have unnoticed total replacement of one kind by a doppelgänger. And one can easily imagine a hypothetical situation in which the year-to-year biological differences between "flu"-causing organisms are much greater than they actually are. That difference might still only be detectable with advanced microbiology. In that case, we would have a kind concept with a broader reference than flu.

Normality as Background to Content Individuation

The word "normal" has many senses: nomological, statistical, and evolutionary. Since normality plays an important part in my view about the conditions under which unnoticed concept acquisition occurs, I am going to take some time to explain the relevant notion, which I am going to work up to.

¹⁰⁵ Thanks to Sheldon Smith and Alex Radulescu for very helpful discussion on this point.

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Anti-individualism holds that what a mental state is related to can partially determine the content and referent of the mental state. Now, the environmental background is very important to this determination. For one thing, for the causal relations between a mental state and a particular entity in the environment is mediated by other entities in the environment, *e.g.*, photons, and depends on the way in which those intermediaries behave, *e.g.*, they travel in straight lines. There are other ways in which the environment is important. First, part of what determines the referent of a natural kind concept is which entities in the environment are taken as exemplars of the kind. One way to partially specify the function of a natural kind conceptual ability is: to represent the kind that these exemplars and similar entities belong to. Of course, the exemplars may be members of many different kinds. And there are many different dimensions of similarity. So this specification is quite incomplete. One way in which it is narrowed down is that the kind does not have to include *all* entities similar to the exemplars. It need only include those entities in the thinker's environment. This helps to explain why Earth thinkers think tiger instead of a concept whose referent includes both tigers and tiggers. Even though tiggers are similar to tigers, tiggers need not be included in the concept thought by the Earth thinkers because tiggers do not occur in the environment of the Earth thinkers. The environment for a purported natural kind concept extends only some distance in space and time from the thinker. Perhaps it matters how easy or difficult it is for the thinker to move from one place to another. We can also note that, in many cases, it takes some time to establish a natural kind concept. Committal uses of a natural kind concept have the function of representing a kind that is involved in patterns and regularities in the environment. The function is not just to provide a snapshot of the environment. It is to provide a representation of stable elements of the environment, in terms of which

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environmental regularities and patterns can be explained. This means that, in most cases, it matter which entities the concept has been related to over some appreciable period of time.

So, there are various determinate aspects of the environment which help to determine which entity a concept is related to in the content-determining ways. There is the spatiotemporal dimension of the environment. There are the kinds of entities present in the environment. There are the laws, patterns, and regularities that obtain between among the entities in the environment and also between the subject and the environment. I have not exhaustively specified the relevant aspects. I have provided little explanation of why certain aspects are relevant; some explanation was provided by appeal to the representational function of committal uses of natural kind concepts. In any case, a notion of normality can be associated with these aspects: the *normal environment* for a thinker's concepts are those aspects of the environment which help to determine which entity a concept is related to in the content-determining ways.¹⁰⁶ This is the notion of normality to which I appeal going forward.

Normal and Abnormal Doppelgänger Replacements

My initial proposal to address the flu case, which will require some modification, has two parts.

Suppose that there is an unnoticed wholesale replacement of one kind by a doppelgänger kind and that g refers to the initial kind. There are then two cases:

- A. If unnoticed doppelgänger-kind replacements are normal, then the thinker will have a concept whose reference includes all of those kinds.
- B. If the kind replacements are abnormal, then the thinker's concept will not include all of those kinds.

¹⁰⁶ Burge isolates this notion of normality in "Perceptual Entitlement" §6, esp. p. 534. Discussion with Burge contributed to my explication and application of the notion.

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A. needs some revision but I first want to illustrate the consequences of this proposal for unnoticed concept acquisition and *apriori*-unavoidable equivocation. We can distinguish several different kinds of situations. There may not be complete unnoticed replacement by a doppelgänger, in which case there is no unnoticed acquisition of a new concept and no *apriori*-unavoidable equivocation. Or, there might be complete unnoticed replacement by a doppelgänger. If the replacement is normal, then the concept's referent already includes the doppelgänger.¹⁰⁷ So no new concept is acquired. If the replacement is abnormal, then the thinker may acquire a new concept without noticing and be subject to *apriori*-unavoidable equivocation. So, if the proposal is correct, then the only situation in a thinker may acquire a new concept without noticing and be subject to *apriori*-unavoidable equivocation is when there is an abnormal doppelgänger replacement.

We can use the notion of a normal environment to distinguish between the flu-case and the 30-year locust/katydid-case. As previously noted, it takes some time to establish a natural kind concept. And, the committal uses of a natural kind concept have the function of representing a stable kind. So, now suppose that, as in the flu-case doppelgänger kinds replace one another fairly regularly. They plausibly do so within the time-frame over which committal uses of flu have the function of representing one stable kind. In order for that function to be realized, flu must refer to the more generic kind, not one of the specific strains. In other words, in the environment in which the flu-concept is acquired, *i.e.*, the normal environment for a flu-thinker, the virus strains replace another. That is, the replacement of one flu strain by a doppelgänger is normal. On the other hand, the replacement of the locusts by the katydids is abnormal. Within the environment in which 30-year locust is acquired,

¹⁰⁷ Or, in light of the modification to follow, the thinker already has a concept with no referent and the new kind does not change that.

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katydids do not surreptitiously replace locusts. During the time frame in which the concept is acquired, such replacements do not occur. Consequently, the katydids' replacement of the locusts is abnormal.

I need to make two comments about A. First, if a is serially related to different doppelgänger kinds, then a's referent presumably is a kind more generic than the different doppelgänger kinds. As with jade, that kind might not be a natural kind. But there is no reason that the more generic kind could not be a natural kind instead; arguably flu and mental illness are natural kind concepts. Second, A. is in tension with the mental illness/unitary psychosis example. To accommodate that example, A. needs to be replaced with a slightly more complex principle.

While the occurrence of the different mental illnesses are normal, unitary psychosis refers to none of them, not all of them. Now A. only applies to cases of serial replacements of doppelgänger kinds. And the different mental illnesses concurrently interact with unitary psychosis. So strictly, A. and the unitary psychosis example are compatible. However, in spirit they are in conflict. If a concept can refer to a group of kinds that normally serially replace one another, why would not a concept refer to a group of kinds that are normally simultaneously present in the environment? As discussed above, the unitary psychosis case is an example of the fact that a mental state's content and referent are not determined just by the mental state's relations to the environment. It also matters how the entities in the environment are grouped together. mental illness groups the different illnesses together in a relatively generic way, as diseases of the mind/brain. The different mental illnesses are diseases of the mind/brain, so mental illness refers to them all. unitary psychosis groups all the mental illnesses together in a more specific way: as manifestations of different stages of one

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psychological process. There is no such process and so unitary psychosis refers to none of the illnesses. So, the grouping principles employed with a representational mental state can be a factor in determining the content and referent of that state. And there are almost certainly other sorts of factors that play a role in determining a mental state's content and reference. So, we should modify A to A*:

A*. Suppose unnoticed doppelgänger-kind replacements are normal. If the other factors that determine a concept's referent are compatible with the concept's reference including all of the doppelgänger kinds, then the concept refers to all of the kinds. Otherwise, the concept has no referent.

So, it could also happen that, due to normal doppelgänger replacement, a thinker has a concept with no referent. In such cases, there is not novel reference to new kinds or unnoticed acquisition of new concepts.

Further Issues

A complete picture of normal univocality must answer some further questions. First, the picture so far concerns only situations where the conception remains unchanged. What happens when a conception is altered? Under what conditions are two representation-instances with *different* conceptions guaranteed to corefer? My conjecture is that if a conception is *rationally* altered, the instance acquired with the earlier conception and the instance acquired with the later conception will have content-relevant causal relations to different entities only if the environment is abnormal. If the conjecture is correct, then as long as a thinker is rational in reasoning with the conception, she will be subject to unnoticed concept acquisition only in abnormal environments. Second, there are different views about

which kinds of causal relations are content-relevant.¹⁰⁸ I believe that my view is neutral

between them but this point would benefit from discussion. Third, what about other conceptual representations, such as demonstratives and singular memory-based representations? They appear to have their content and reference determined in somewhat different ways than natural kind concepts. I think that, as with natural kind concepts, there is unnoticed novel reference and acquisition of new conceptual representations only in abnormal environments. I think the thesis holds for singular conceptual representations as the same reason it does for natural kind concepts: the causal relations relevant for determining singular conceptual content run through shared conceptions. But the application of the picture to these cases needs to be spelled out.

¹⁰⁸ Some focus on causal-historical relations, others on nomological/counterfactual/informational relations, and so on. Putnam advances a causal-historical view for the reference of putative natural kind terms in "Explanation" (200-207) and, in "Meaning", endorses the view after attributing it to Kripke (234-5). Kripke does indeed appear to assert a causal-historical view for natural kind terms (*Naming* 135-6). Both philosophers also make comments about *ongoing* ostensive "definition" so there is some uncertainty about the attribution. Nomological/counterfactual views are found, for example, in (Stalnaker, *Inquiry*, "On What's in the Head" 183-4; Dretske, *Flow*, "Misrepresentation"; Fodor, "A Theory of Content, 2 - The Theory").

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We have seen how univocality of thought can be secured in a normal environment. A conceptual ability can establish content-relevant causal relations between different representation instances and the same aspect of the wider physical reality. It can do so by exploiting the same resources in typing those instances. In a normal environment, those resources mediate content-relevant causal relations to the concept's referent. And we have seen how this mediation can go awry in abnormal environments, when the same set of cognitive resources establish that different instances have content-relevant causal relations to different entities. I now turn to the issue of warrant: how do these facts about the univocality of conceptual abilities fit into an explanation of the warrant for pairing, both successful and equivocal? I will first explain how normal univocality provides for a substantial degree of *a priori* warrant for pairing. I will then compare this explanation with the accounts of Krista Lawlor and Mikkel Gerken.

Apriori Entitlement from Competence and Normality Entitlement for Successful Pairing in Normal Environment

I first explain the warrant for *successfully* pairing instances of the same type. Recall that multiple competences interact in producing acceptance of an argument. A logical reasoning competence *pairs* representations when it treats the representations as of the same type, in that competence's interaction with other reasoning competences.

I will assume that pairing is warranted if there is a principled and reliable connection between the pairing's occurrence and the pairing's possible success. So suppose that, in a normal environment, without any odd switching, Oscar's competences warrantably pair two 30-year locust-instances. Why is this warranted? What is the connection between the fact that

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the instances were paired, and the fact that they are of the same type? Consider why the instances are of the same type. Both are 30-year locust-instances, produced by the 30-year locust-ability. In typing the two instances, the 30-year locust-ability relies on the same cognitive resources. Both instances are governed by the same conception. Both instances rely on the same evidence for existence of 30-year locusts. Both instances can be causally linked to 30-year locusts *via* inference involving other 30-year locust instances. And both instances are linked to testimony from other sources involving the word '30-year locust'. Because of these similarities, and because the environment is normal, the content-relevant causal relations of each are to 30-year locusts. So, both instances are 30-year locust-instances.

Oscar's cognitive competences respond to two factors, in pairing the instances. The first factor is that the 30-year locust ability exploits the same resources in typing the two instances. The second factor is that there is no evidence of environmental abnormality. Had there been such evidence — misleading in this case, since the environment is normal — the instances would not have been paired. For example, if Oscar had begun to suspect that there had been a wholesale species switch, his reasoning competences would, at least, stop pairing instances acquired before and after the suspected switch. The two factors — the instances' similarity, and the lack of evidence of environmental abnormality — are jointly causally sufficient and severally causally necessary for the pairing. That is, the pairing competence operates according to the pattern: if instances are appropriately similar and there is no evidence of environment abnormality, pair the attitudes; otherwise, do not. Operating according to this pattern is the way in which the competence functions to realize its good of pairing all and only instances of the same type.

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On this picture of pairing's genesis, there is a principled connection between the pairing's occurrence and its success. The aspects of the 30-year locust-attitudes that contribute to the *occurrence* of the pairing — being produced by the 30-year locust-ability and thus relying on the same cognitive resources — also contribute to the pairing's *success*, by guaranteeing that if the instances are in a normal environment, they are of the same type. And, there is default warrant for reasoning in ways that are correctness-conducive in normal environments.¹⁰⁹ Lacking evidence of abnormality, a thinker is warranted to cognize in ways that, in a normal environment, have a reliable and principled connection to success.¹¹⁰ This warrant establishes a principled connection to the environment's normality. I will call this warrant the normality warrant. I here gloss an explanation for this warrant that follows Burge's explanation in "Perceptual Entitlement" (§VI, esp. p. 534 *ff.*). Having this warrant does not consist in being in any particular mental state. A thinker has this warrant because of constitutive connections between being in a normal environment and being successful. The reliability of a perceptual ability is a feature of the perceptual ability and its relation to the environment. And it plays a role in warranting perceptual beliefs. Similarly, because a thinker's mental states and abilities are by definition constituted relative to their normal environment, and because they are constituted in a way that makes them success-conducive, a thinker has warrant for reasoning in ways that whose correctness is explicable partially in terms of the thinker's normal environment. So, the factors that contribute to the pairing's occurrence — (1) being produced by the same ability, and thus having the same ability-

¹⁰⁹ Burge in "Perceptual Entitlement" and Jim Pryor in "The Skeptic and the Dogmatist" are good examples.

¹¹⁰ Having a sensitivity to evidence of abnormality is a sufficient condition for a normality presumption to play a role in warrant, but probably is not necessary. Young children and higher animals have warranted perceptual beliefs, the explanation of which includes a normality presumption, but those thinkers may not be particularly sensitive to evidence of abnormality.

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endowed features; and (2) the normality warrant — have a principled connection to the success of the pairing. If the instances are typed by exploitation of the same cognitive resources, and the environment is normal, then the instances are of the same type, 30-year locust in this case, and so the pairing is successful.

In addition, we can see that operation in accord with the pairing norm is warranted *a priori*. Differentially responding to representation-pairs that are reliant on the same cognitive resources and those that are not does not rely on experience. And the connection between two instances' similarity and environmental normality, on one hand, and the success of pairing those instances, on the other, does not depend on empirical conditions. It is due to the nature of a suite of cognitive resources that representation-pairs that share them in normal environments have the same content-relevant causal relations. So, relative to the normality warrant, the univocal reasoning is *a priori*. If the normality warrant is also *a priori*, as some have argued,¹¹¹ then the entire warrant for correct univocal reasoning is *a priori*. Now, it is *prima facie plausible* that default warrant *must* be *a priori*. Default warrant is warrant that one has without having to engage in any particular cognitive activity. It requires no positive support. But, *aposteriori* warrant is warrant that *supported* by experience. Hence *aposteriori* warrant is not default warrant. So, I will assume for the remainder of the dissertation that default warrant is *a priori*. I believe that this assumption is correct. But, the conclusions of the dissertation can be modified to reflect other views about default warrant.

Entitlement for Switch-Induced Equivocal Pairing

Now, consider the warrant for anti-individualist-induced equivocation. The 30-year locust and katydid-instances rely, for their typing, on the same cognitive resources. After the

¹¹¹ See (Burge, "Perceptual Entitlement")

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katydid-switch, those resources establish more and more significant causal relations between the katydids and Oscar's attitudes. Had the environment been normal, and the switch not occurred, the instances in those attitudes would have all had causal relations to the 30-year locusts. But katydid-instances eventually arise, because of the environmental abnormality.

Even though Oscar's environment is abnormal, he retains the normality warrant. This is a default warrant. To lose it, there must be positive reason to doubt the normality of the environment. Nothing in Oscar's interactions with the world has given him any reason to suspect that there has been a systematic replacement of one species by a doppelgänger species. Indeed, given Oscar's interaction with his environment, he would not be warranted in believing that there had been a species replacement. And, Oscar's lack of evidence of the environment's abnormality is not irrational, or due to any defect in the operation of his perceptual and cognitive faculties and competences. So in the switch case, Oscar retains the default normality warrant to reason as if in a normal environment.

Oscar's pairing competence still has a principled connection to representational success: it is still the case that, *if* exercised when the thinker is in a normal environment, it produces correct results. And this connection still provides *apriori* warrant. It is still the case that differentially responding to representation-pairs that are reliant on the same cognitive resources and those that are not does not rely on experience. And the connection between two instances' similarity and environmental normality, on one hand, and the success of pairing those instances, on the other, still does not depend on empirical conditions. It is due to the nature of a suite of cognitive resources that representation-pairs that share them in normal environments have the same content-relevant causal relations.

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So, the elements of the warrant that are present in cases of successful pairing in normal environments are also present in abnormal switching environments. Two factors explain why Oscar's pairing competence pairs 30-year locust and katydid-instances. First, the same cognitive resources are exploited in producing those instances. Second, there is no evidence of environmental abnormality. Pairing on those grounds does have a principled connection to success: if Oscar were in a normal environment, the instances would be of the same type and the pairing would succeed. So, the pairing of 30-year locust-instances with katydid-instances is warranted, as is Oscar's mistaken logical corepresentation reasoning. And that warrant is as *apriori* as is the warrant for successful pairing in stable cases. The pairing is mistaken but blameless and warranted *apriori*. The *apriori* warrant for pairing is simply fallible: it is unable to entirely guarantee the success of the pairing.

Let us step back from particular katydid-attitudes and take a broader view of Oscar's cognitive situation. After the katydid replacement, Oscar has misleading evidence that there is and has been one insect species that over time has undergone some changes in its appearance, behavior and distribution. One function of Oscar's belief system is to represent which kinds are in his environment. The belief system's method to realize this function is to conceptualize the kind and deploy the resultant concept in a network of attitudes. And the belief system creates such a network by endowing the different attitudes that will be members of the network with a certain set of features that, in a normal environment, would establish content-relevant causal relations with the putative one species. Were Oscar in a normal environment, the attitudes would all share a concept. If there actually were a particular species for whose existence and uniqueness his evidence was, the concept would be of that species. Were there not such a species, he would think a different concept, a concept representing multiple

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species, as jade represents both jadeite and nephrite, or a concept representing nothing, as unitary psychosis represents nothing. In all of those cases, the attitudes in the network would share a concept. But, because of the abnormal environment in the switch case, the attitudes are of different types, first 30-year locust-attitudes, then katydid-attitudes. Because Oscar is warranted and rational in reasoning as if he were in a normal environment, he is warranted and rational in pairing 30-year locust attitudes with katydid-attitudes.

Other Attempts to Minimize Incompatibility

I now want to contrast my own account of how pairing is warranted, given anti-individualism, with two accounts of the same phenomenon, one proposed by Krista Lawlor in *New Thoughts About Old Things*, the other by Mikkel Gerken in his UCLA dissertation *Epistemic Reasoning and the Mental* and papers “Conceptual Equivocation and Warrant by Reasoning” and “Univocal Reasoning and Inferential Presuppositions”. The ambitions of these accounts are similar to mine. Both accept anti-individualism. Lawlor thinks that pairing warrant is *apriori*.¹¹² Gerken does not declare himself on this point but does think that pairing is warranted by a reasoning competence as opposed to a perceptual competence. I believe that neither of these accounts succeeds. They both hold that the pairing competence is reliable and that exercises of it are conducive to correct pairing. But neither explains how the pairing’s competence’s being conducive to correct pairing is independent of experience. So, they do not explain how pairing is warranted, because they do not succeed in establishing that pairing’s warrant is *apriori*.

Krista Lawlor

¹¹² Lawlor’s final statement on warrant for what we call pairing, on p. 102, does not mention the *apriori*. However, on p. 44, in the first paragraph of Ch.2.V, Lawlor states that she intends the statement on pairing warrant to provide for the *apriori* character of pairing warrant. She writes “I have argued that we keep...the common-sense intuition that one knows *apriori* the actual shape of the inference one makes.”

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On Lawlor's account, we are warranted in pairing because, as she puts it, our reidentification policies are reliable. What is reidentification? Basically, it is recognizing something as the same on repeated encounters with it. Thus, after first encountering an object or kind, and thinking a concept or occurrence-based type that refers to it, we may not forget it. In that case, we retain a representation α referring to it. We may then reencounter the object or kind; at the limit, as in tracking, the encounter with the object simply continues and there is representation of the object's identity throughout that period. On that second encounter, we may form a new representation β referring to the object. Experience $e1$ might include seeing Tweety fly by. We might remember $e1$ and so we later use that bird $_{\alpha}$ to represent Tweety. Experience $e2$ might include seeing Tweety fly by again, so we might use that bird $_{\beta}$ to represent Tweety. We reidentify Tweety if we judge that bird $_{\alpha}$ = that bird $_{\beta}$. After repeated encounters with Tweety, we may acquire the representation Tweety, which does not rely on any one perceptual encounter with Tweety to establish its reference to Tweety. Then, we can reidentify Tweety if, on reencountering Tweety, we use on that occasion use Tweety to conceptualize the object we are then encountering. I will say reidentification of this second kind, in which new instances of the old content are used to conceptualize the object on reencountering it, is "same-content reidentification". By this, I mean not that we reidentify the content, but that we use the same content in reidentifying the object. Attribution of a property on multiple occasions is analogous to reidentification. When we attribute a property to an object, we represent that object as having a property that other objects have.

Lawlor construes switch cases as radically mistaken would-be same-content reidentifications. They are not *actually* same-content reidentifications, since the thinker uses the new content to conceptualize her later encounters with the new object. But they are

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would-be same-content reidentification in that the reasoner proceeds as if the reidentification were successful. So, if we are reliable at same-content reidentifications, then we are reliable at avoiding radically mistaken would-be same-content reidentification. So, if we are reliable at same-content reidentification, then we are also reliable at avoiding anti-individualist induced equivocation. Let me spell this out in a bit more detail. So, suppose that our reidentification methods are in general reliable. Suppose that we encounter a and retain the representation \underline{a} of a , and attempt to reidentify it. Then, either we are disposed to pair new representation-instances with old \underline{a} -instances or we treat a perceived object or kind as the referent of an old \underline{a} -instance. In either case, we do so by relying on our reidentification abilities. All else equal, given the supposition that our reidentification abilities are in general reliable, it is likely that the perceived object or kind is in fact a . So it is not likely that the perceived object or kind is a new object b , and even less likely that we will establish substantial causal relations between b and representation-instances which we are disposed to pair with \underline{a} -instances. So, it is not likely that, because we encounter a new object b and confuse it with a , we will, on purely relational grounds, acquire a new representation-type \underline{b} referring to b . Consequently, we are unlikely to confuse \underline{a} -instances with instances of another representations just because the two representations are individuated by relations to different entities. That is, if we are rational, we will reliably pair \underline{a} -instances only with other \underline{a} -instances.

Now, in explaining the warrant for pairing, Lawlor does *not* appeal to the mere reliability of our reidentification policies. The problem with such an appeal is that such reliability would provide only *aposteriori* warrant. And I think it is clear that at least some of our reidentification policies have *aposteriori* warrant. For example, we have many numerical policies based on assigning different individuals different numbers: Social Security numbers

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and drivers license numbers are quasi-linguistic systems by which a bureaucrat can reidentify an individual. Warrant for reidentification with such systems presumably is partially based on the empirically warranted belief that each number is assigned to only one person. Again, one may initially be unable to reidentify different dogs of a given breed because they all look the same. But one may learn from experience that, among dogs of that breed, certain marking patterns are rare or unique. Reliable reidentification could then be guided by observation of such marking patterns. The warrant for such reidentification would be *aposteriori*. The same point is true of reidentification of natural kinds, *i.e.*, recognizing different instances of the same kind as such. Discovering the actual nature of a natural kind is an empirical project. Such discoveries certainly inform our policies of reidentifying natural kinds. Now, there may be some very basic reidentification policies which have *apriori* warrant. For example, one way have *apriori* warrant for drawing inferences, roughly, from *a* traveled on a spatiotemporally continuous path to *β*'s current location to *a* is *β*. But one's evidence that *a* took such a path is surely fundamentally *aposteriori*.

Lawlor's account has two further features which, among other things, are intended to secure the *apriori* status of pairing-warrant. In Chapter Four of *New Thoughts*, Lawlor provides an account of what she calls "thinking with coreferential purport" by appeal to the notion of cognitive files. I am not going to expound that entire account but there is a part of it which is particularly important for her view of of pairing warrant. As I have discussed, part of the representational function of a conceptual representational ability is to provide for the ability to form theories and/or narratives about the subject matter of the representational ability. Such a theory or narrative consists of a body of attitudes that interact, in part, on the basis that they all involve instances with the same subject-matter.

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Lawlor introduces the idea of pruning and screening dispositions, which are dispositions that should govern theories and attitudes. Consider Ravi's body of tiger-attitudes. Jaguars and tigers are both in the panther genus but are distinct species. Tigers are not found in the Americas while jaguars are found only in the Americas. Ravi's usually reliable friend George tells Ravi many facts about jaguars and mistakenly informs Ravi that jaguars are a kind of tiger, usually reliable but confused about panther species, tells Ravi that jaguars are a kind of tiger. Suppose Ravi were to believe George's claim that jaguars are a tiger sub-species. Then all of Ravi's jaguar-beliefs would become part of his tiger-theory. He would infer some tigers are indigenous to the Americas, some tigers are all black, and so forth.

Ravi might initially doubt and not accept George's claim that jaguars are a kind of tiger. If so, then Ravi would not mistakenly incorporate jaguar-beliefs into his tiger-theory. Ravi would *screen out* the jaguar information from his tiger-theory. Ravi's screening dispositions with his tiger-theory has two parts. First, Ravi is disposed to check whether or not a piece of information concerns the tigers. Second, Ravi is disposed to integrate the information into the tiger-theory only if the information appears to concerns tigers (*New Thoughts* 86).

Ravi might accept but later come to reject George's claim that jaguars are a kind of tiger. If so, then Ravi would abandon that belief and, to the extent possible, would remove from the tiger-theory any elements whose presence in the theory depended on the claim that jaguars are a kind of tiger. Ravi would prune his tiger-theory to remove those elements. Ravi's pruning dispositions with his tiger-theory has two parts. First, Ravi is disposed to check whether or not he still reason to believe that a piece of information concerns the tigers.

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Second, Ravi is disposed to remove the information and its consequences from the tiger-theory if the information does not appear to concern tigers (*New Thoughts* 87).

Lawlor then claims

“[T]he source of one’s warrant in coreferential thinking [including pairing] is one’s epistemic vigilance in maintaining a file. The *better* one’s screening and pruning dispositions, the greater one’s reliability in maintaining an intentional relationship to a referent, and so the greater the degree of one’s warrant in making inferential trades on presumed coreference” (*New Thoughts* 99; my emphasis).

As we will see, there is a fatal equivocation on “better” in this text. But let us first consider how Lawlor’s view is supposed to work. In our terms, the view comes to the following.

Suppose that two representation-instances are produced as part of a thinker’s constitution of a theory or narrative. The better the screening and pruning dispositions, the more likely the different instances in the theory are to have the same content-relevant causal relations. So, the ground of the reliability of the pairing competence are good screening and pruning dispositions. Lawlor thinks that one can have *a priori* access to the fact that one has good pruning and screening dispositions (73). Presumably she thinks that one can have *a priori* access to the fact that having good pruning and screening dispositions makes one’s pairings reliable.

The problem in this argument lies in an equivocation on “good disposition”. There are two ways in Ravi may have good pruning and screening dispositions. First, Ravi may be assiduous in pruning and screening or, in Lawlor’s apt phrase, “epistemically vigilant.” This means that Ravi takes care, in adding information to a theory or narrative, to check whether or not there is good reason to think that the information and theory or narrative concern the same object. And Ravi checks whether, in light of new evidence, some information in a theory or narrative needs to be pruned off of the theory.

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In describing *Ravi's* pruning and screening dispositions, we saw that *Ravi* determines whether or not the information and theory/narrative concern the same object. *Ravi* makes this determination, *by his own lights*, *i.e.*, in terms of his evidence, reasoning capacities, and the like, *i.e.*, his reidentification policies. If *Ravi's* reidentification policies are reliable, then he will reliably screen out irrelevant information and prune out whatever irrelevant information sneaks past the screen. But *Ravi's* reidentification policies may be unreliable. In that case, *Ravi* will add *irrelevant* information to his theory and prune out *relevant* information.

So there are two senses in which *Ravi* can have good screening and pruning dispositions: they can be exercised assiduously and they can be reliable. If the pruning/screening dispositions are both reliable *and* assiduous, then they will reliably connect a theory or narrative about *x* only with information about *x*. But, if the pruning/screening dispositions are not reliable, then they will not reliably connect an *x*-theory or narrative only with *x*-information. Consequently, for pruning and screening dispositions to warrant pairing, the dispositions must be both assiduous and accurate. As previously argued, the accuracy and reliability of reidentification is in general *aposteriori*. So, whether or not *Ravi's* pruning and screening dispositions are good in the way that provides warrant is substantially an *aposteriori* matter. Lawlor may be correct that one can have *apriori* access to the assiduity of one's screening and pruning. But she is not correct that one can have *apriori* access to the accuracy of assiduous screening and pruning.

The view advanced in *New Thoughts* is, on the question of the *apriori* or *aposteriori* status of pairing warrant, in the same boat as Campbell's. Lawlor attempts to argue that our warranted representation of *actual* identities is what warrants pairing. I think this is simply looking in the wrong place for the source of our warrant. We can be substantively quite

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mistaken about the identities of the entities that we think about and yet reason about them

logically, rationally and with *apriori* warrant. Our warrant lies substantively in the nature of our representations and our ability to reason in accord with that nature. The relevant aspect of the nature is that if two representation-instances are rationally constituted so as to be part of the same one-concept network, then they will rely on the same suite of cognitive resources, and so, except in abnormal conditions, have content-relevant causal relations to the same entity or entities, whether or not the thinker is correct about the identity of the entity or entities.

In Lawlor's more recent paper "A Notional Worlds Approach to Confusion", she appeals to the idea, attributed to John Perry's *Reference and Reflexivity*, that a belief may have multiple contents and multiple truth-conditions, each the truth-condition of one of the contents ("Notional Worlds" 163). I am very skeptical of this idea, but it is beyond the scope of this paper to treat the idea fairly and informatively. In any case, the argument of that paper suffers from a similar problem as does that of *New Thoughts*: "Notional Worlds" lacks an argument that the warrant for pairing is *apriori*. Now, "Notional Worlds" also contains the idea of a notional network (160-161 *ff.*), an idea which has some similarities to the idea of a one-concept network. However, Lawlor does not even attempt to explain why different representation instances in the same notional network are in any way likely to *actually* corefer and she does not explain how we could have *apriori* warrant for pairing different representation instances in the same network. This points deserve development, which I hope to provide in the not distant future.

Mikkel Gerken

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I would now like to consider a proposal advanced by Mikkel Gerken, in his UCLA dissertation *Epistemic Reasoning and the Mental* and in subsequent papers, particularly “Conceptual Equivocation and Warrant by Reasoning” and “Univocal Reasoning and Inferential Presuppositions”. Gerken’s account relies heavily on his notion of an inferential presupposition. I have two concerns about Gerken’s account. First, Gerken does not establish that pairing warrant is *apriori*. Second, as best I can tell, on Gerken’s account of inferential presuppositions, they are epistemically idle at least with respect to the reasoning at hand; they are not the kind of state that can *provide* warrant. Let me first explain what the account of inferential presupposition.

Gerken develops the account of inferential presuppositions in *Epistemic Reasoning and the Mental* (chs. II.x, V.iv-v) and “Univocal Reasoning and Inferential Presuppositions”. As Gerken points out, his notion of inferential presupposition is very specific. It is distinct from the notion of linguistic presupposition involved in linguistics and also from the notion of tacit belief (“Univocal Reasoning” 373, 388). According to Gerken, a rough gloss on inferential presuppositions is that they are “*should-be* beliefs” about inferential patterns and particular inferences. They are normative commitments generated by engaging in reasoning, to the effect that the reasoning is good reasoning. Suppose Nina warrantably infers Someone is bald from Bob is bald. Part of the reason this is a warranted inference has to do with the semantics of Someone is bald and Bob is bald. In particular, Someone is bald is true iff some object satisfies *x* is bald, Bob is bald is true iff Bob satisfies *x* is bald, and Bob is an object. I will use double underlining to refer to concepts that represent concepts. So, “Someone is bald” is a content refers to the proposition Someone is bald. As I understand Gerken’s account, Nina inferentially presupposes Someone is bald is true iff some object satisfies *x* is bald, Bob is bald

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is true iff Bob satisfies x is bald, and Bob is an object. Nina has these presuppositions whether or not she has higher order-concepts such as true or Someone is bald. That is, a thinker's presuppositions need not be actual *attitudes* had by the thinker. Gerken's idea is that Nina "takes it" that Bob is bald is true iff Bob satisfies x is bald. In spelling this out, Gerken writes:

"[T]he exercise of [an inferential] competence constitutes non-attitudinal normative commitments to particular propositions.

When I claim that the exercise of [an inferential] competence constitutes an inferential presupposition, I don't mean that it produces a mental representation. The inferential presupposition is not a representational state. The inferential presupposition is nothing over and above the particular exercise of the [inferential] competence. However, the relation is not one of identification. As in the case of material constitution, the constitution relation is asymmetrical: the exercise of the univocal competence constitutes the inferential presupposition, but not vice versa.

As a first approximation, we may gloss inferential presuppositions as "should-be beliefs".

Inferential Presupposition (first pass)

The content of an inferential presupposition constituted by a reasoning, R , is a proposition, p , such that the reasoner should believe p , in virtue of R , if it were the case that : (i) she had the concepts to think p and (ii) she considered p . ("Univocal Reasoning" 384)."

This account is a first pass because while it works for cases where the reasoning is rational, it does not work when the reasoning R is irrational. But we do not need to worry ourselves here about such cases. Now, as Gerken repeatedly notes, a thinker may inferentially presuppose $\not p$ without being able to think $\not p$. $\not p$ may involve sophisticated concepts, semantic or otherwise, that the thinker cannot grasp. Gerken writes

"According to the present presupposition account, the reasoner is not reasoning the way she does because the presuppositions are ascribable to her. Rather, the inferential presuppositions are ascribable to the reasoner because she is reasoning as she does. The mental difference between an inferential presupposition and a premise-belief is remarkable. Premises-beliefs are conceptually prior to a given line of reasoning and partly *constitutive of it*. Inferential presuppositions, in contrast, are conceptually posterior to that particular line of reasoning and *constituted by it*." ("Univocal Reasoning" 388).

The contrast between premises and inferential presuppositions is instructive. Holding the premise beliefs helps to causally and epistemically explain the holding of the conclusion belief. The presupposition is a mere normative *commitment*. I take it that, as such, the inferential presupposition has no causal efficacy.

Nonetheless, Gerken claims that inferential presuppositions are the kind of mental state that can be warranted or lack warrant. Further, he claims that inferential presuppositions can *help to warrant* the very reasoning which constitutes them (“Univocal Reasoning §6.2). I am dubious of the second claim.¹¹³ For the sake of argument I will grant that inferential presuppositions are the kind of mental state that can be warranted. Gerken applies these general claims to the specific case of pairing in switch cases. The position seems to be as follows: Suppose that $\underline{\alpha}$ and $\underline{\beta}$ are the concept types¹¹⁴ figuring in a pairing, either in a switch case or a stable case.¹¹⁵ Then, the thinker has the second-order inferential presupposition $\underline{\alpha}$ and $\underline{\beta}$ corefer in virtue of logical form.¹¹⁶ This presupposition is warranted. If the presupposition is correct, then it is correct to pair $\underline{\alpha}$ - and $\underline{\beta}$ - instances. So, pairing $\underline{\alpha}$ - and $\underline{\beta}$ - instances is warranted.

I think that Gerken’s argument has two major problems. First, while he may be correct that the inferential presupposition is warranted, he does not establish that it has *apriori* warrant. Second, I do not think that Gerken establishes that inferential presuppositions can warrant the reasoning by which they are constituted. Let us take these points in turn. Gerken adduces two points to support the conclusion that the inferential presupposition $\underline{\alpha}$ and $\underline{\beta}$

¹¹³ While I am not opposed to the idea that inferential presuppositions can be warranted, I am dubious of Gerken’s arguments concerning the warrants of particular presuppositions. I think that his arguments may show only that the commitments are *satisfied*. But that is the analogue of a belief’s *truth*, not its warrant. So I am not sure that Gerken’s argument establish that the particular presuppositions are warranted. This issue requires more exploration.

¹¹⁴ Gerken officially restricts his account to switching cases involving concepts, for the same reason that this chapter concerns only natural kind concepts: there are substantial content differences between concepts and singular conceptual representations.

¹¹⁵ In the stable case, $\underline{\alpha}$ and $\underline{\beta}$ are the same type, e.g., 30-year locust or tiger.

¹¹⁶ Gerken’s terminology differs at a number of points but the difference is not of significance to current matters so I am translating his claims into my terminology.

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corefer in virtue of logical form is warranted (*Epistemic Reasoning* 186-7). First, Oscar is cognitively blameless in not noticing the switches between locusts and katydids, or different birds, or Luciano or Guiseppe, or whatever it is that it is switched. So,¹¹⁷ Oscar's inferential presupposition α and β corefer in virtue of logical form is cognitively blameless. In addition, in normal circumstances, Oscar's pairing competence is reliable. And, the pairing competence always generates a higher-order presupposition to the effect that the paired instances corefer in virtue of logical form. Since the pairing-competence is reliable in normal circumstances, that higher-order inferential presupposition is also reliably true in normal circumstances. So, in the switch case, Oscar's inferential presupposition is cognitively blameless and generated in a way that in normal circumstances reliably produces true presuppositions. So, Oscar's presupposition is warranted.

This argument does not describe why or how the pairing competence is reliable. So, as far as this argument goes, that reliability may be empirically dependent. The argument is not *committed* to the reliability being empirically dependent. But the argument neither explains why pairing competences are reliable in normal environments nor establish that the reliability is independent of experience. So the argument does not establish that the warrant for the presupposition is *apriori*. Now Gerken does not announce that he is trying to establish the *apriori* nature of pairing warrant. Nonetheless, pairing warrant is *apriori* and a full account of the warrant needs to explain that.

¹¹⁷ This an element in the position that I am unclear about. Gerken explicitly distinguishes the propositions $\alpha=\beta$ and α and β corefer in virtue of logical form, and the corresponding inferential presuppositions (*Epistemic Reasoning* 185). His subsequent discussion of cognitive blamelessness concerns blamelessness for the first-order presupposition. However, it is the second-order presupposition whose warrant needs to be established. And in the second part, Gerken explicitly discusses the higher-order inferential presupposition. I think it is plausible that if Oscar blamelessly presupposes $\alpha=\beta$, then his presupposition of α and β corefer in virtue of logical form is also blameless.

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The second problem is that it is not clear how inferential presuppositions can warrant inferences. Here it is important to remember what ‘inferential presupposition’ and ‘warrant’ mean. An inferential presupposition is a normative commitment *generated* by an act of reasoning. The commitment is presumably generated because the reasoning is truth-conducive only if the commitment is correct. I do not understand how the normative commitment of a piece of reasoning can produce warrant for that reasoning. In [Functions have Normative Significance](#). I claimed that for a belief to be warranted is for it be *arrived at* via a good, reliable route to truth. I believe that Gerken agrees. More generally, for a piece of reasoning to be warranted, the reasoning must have been arrived at via a good, reliable route to representational correctness. Because the normative commitments of a pairing are constituted by the process arriving at the pairing, the commitments do not play a role in the occurrence of the pairing. So, as far as I can see, given the definitions of inferential presupposition and warrant, normative commitments are incapable of providing warrant for pairing. I want to buttress my conclusion, forestall one possible confusion about my argument, and then discuss the points Gerken makes in favor of the idea that inferential presuppositions generate warrant.

In arguing that the inferential presupposition α and β corefer in virtue of logical form is warranted, Gerken argues that Oscar is blameless in his exercise of the pairing competence and that the exercise of that pairing competence is success-conducive, *i.e.*, it is reliably linked to success in normal circumstances. Gerken holds that, in general, having these two properties is sufficient for warrant. So, they should be sufficient to provide warrant for the operations of the pairing competence itself. Could the presupposition play some role in complementing or supplementing Oscar’s blamelessness or the reliability of the pairing competence in normal

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circumstances? Given that inferential presuppositions have been characterized as normative commitments, I do not see how those presuppositions could complement or supplement Oscar's blamelessness or the reliability of the pairing competence in normal circumstances. This may be a failure of imagination on my part. But it seems to me that all of the fundamental epistemic work is done by the properties of the actual pairing competence and not by the inferential presupposition.

One position about warrant is access-internalism. According to this view of warrant, a subject must have cognitive access to the facts that make the belief, or reasoning, or whatever, appropriately connected to truth.¹¹⁸ Access-internalism is incompatible with Gerken's view that inferential presuppositions can warrant. A thinker need not be able to think a warranting inferential presupposition. In such a case, the thinker lacks access to the belief's connection to truth. My criticism *in no way* relies on access-internalism about warrant. My criticism is that the warranting force, the connection to representational success, is already established by the competence that grounds the presupposition and that the presupposition adds no further connection. The connection established by the competence, however, need not be accessible to the thinker. The competence may provide warrant because it has a principled and reliable connection to representational success. And the thinker may be entirely ignorant of that connection. The point is that the presupposition does not amplify that connection.

Let me turn to Gerken's considerations for the conclusion that inferential presuppositions can warrant. First, Gerken notes that inferential presuppositions have several properties in common with premise beliefs:

1. Both are the kind of state that can be warranted ("Univocal Reasoning" 390).

¹¹⁸ Explicit statements of this view are generally thought to be found in (Chisholm 17; Ginet 34; Bach 250; Conee 398).

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2. Reasoning with either false but blameless premises or false but blameless inferential presuppositions produces a blameless result (*Epistemic Reasoning* 187).
3. Both warranted premises and warranted presuppositions can be conducive to the representational success of reasoning in which they are involved (*Epistemic Reasoning* 187).

I do not see that any of these similarities give us reason to think that warranted false presuppositions can warrant the reasoning that generates the presuppositions. The fundamental problem is that these similarities do not isolate any way in which having a normative commitment itself *establishes* a connection to representational success above and beyond that established by the competence grounding the commitment. As we have seen, the commitment is grounded in the exercise of inferential competences. Those inferential competences are good routes to representational success, in large part because they have principled and reliable connections with representational success. The commitment generated by the exercise of the competence does not seem to add any warranting force. Whatever connection to representational success there may be, it has already been established by the properties of the competence. With respect to 1., being capable of being warranted does not entail being able to warrant. 2. and 3. are also correct but again do not show that the normative commitment is part of a good route to truth. In at least some cases, if a thinker has a warranted but blameless inferential presupposition, then the reasoning that generates that presupposition is itself blameless. Then the reasoning is blameless iff the presupposition is. And the reasoning's blamelessness is explanatorily basic. The same general point holds for being conducive to representational success. Arguably, being conducive to x implies causally contributing to the occurrence of x . Then, inferential presuppositions cannot be success-conducive because they do not have effects. Setting this problem aside, let us suppose that the degree to which an inferential presupposition is conducive to representational success is

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inherited from the reasoning competence whose exercise generates the presupposition. Then, if the presupposition is success-conducive, so is the reasoning. But the reasoning's being conducive to success is not explained *by* the presupposition's being conducive to success. Gerken's argument that, in switch cases, the pairing competence generates a warranted presupposition illustrates this point: according to him, the presupposition α and β corefer in virtue of logical form is truth-conducive *because* it is generated by an exercise of the pairing competence and the pairing competence *is truth-conducive*. So the fact that premise beliefs and inferential presuppositions share *some* epistemic properties does not establish that they share the relevant one: being able to warrant reasoning.

Gerken's second consideration has to do with claims that are made about the warranting force of other epistemic presuppositions. Take a case in which a thinker hallucinates a vase. A thinker might be warranted in believing Lo, a vase! even though there is no vase. Gerken claims that this warrant is explicable in part by the thinker's presupposition "that things normally are what they seem to be." ("Univocal Reasoning, 392). And as Gerken points out, a thinker may be capable of believing there is a vase without having beliefs about seemings. So the content of the presupposition is not the content of any actual mental state of the thinker. Nonetheless, Gerken thinks, the belief's warrant is partially due to the inferential presupposition normally are what they seem to be. I agree with Gerken that we might colloquially attribute the presupposition things normally are what they seem to be to an unsophisticated thinker. However, I do not think that this supports Gerken's claim that inferential presuppositions *as he describes them* can warrant. First, one could agree with my arguments in the previous paragraphs that Gerken's inferential presuppositions do not warrant. Then, if one accepted that the presupposition in the vase-case *does* warrant, the

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conclusion is that there are other kinds of epistemic presuppositions besides Gerken's. And even if the only kind of epistemically significant presuppositions were Gerken-style presuppositions, the vase case would not force the conclusion that such presuppositions warrant. It could be that, when we attribute the presupposition, we claim that the thinker formed the belief with a competence whose use commits one to things normally being what they seem to be. And we think that it is the competence and its exercise that helps to generate the warrant, not the normative commitment. It is the fact that the competence has a principled and reliable connection to success that provides warrant for the belief, or reasoning, or whatever. So when we attribute the normative commitment we are not attributing the warranting factor. Rather, the attribution of a commitment helps to specify the warranting competence, namely, as one that generates the attributed commitment.

Diagnosis

Comparison between the views advanced by Gerken and Lawlor and the one I have proposed highlights an important feature of the view I have proposed in this chapter. To account for pairing-warrant, we need to appeal to those contributions made by reasoning competences to the constitution of representational abilities. It is not enough to appeal merely to facts about reasoning competences, independent of the role that those competences play in constituting different instances of a representation as instances of the same type. Nor is it correct to look to specific identification abilities associated with specific conceptual representations. Rather, we need to understand how reason can coordinate different instances of a conceptual representation. In particular, we need to understand how reason can create mental structures that connect different instances of a representation so that, when one instance is affected in content-relevant ways, the other instances are as well. I have suggested

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that, at any given time, this is accomplished by coordinating one conception with all of the instances of a given conceptual representation. As noted in [Further Issues](#), there is more work to be done in describing these mental structures, explaining how they secure sameness of content-relevant causal relations, and determining how these structures are involved in the representation of different representations' referents as identical or distinct. I think that such work will be fruitful.

Conclusion

At the beginning of the dissertation, we saw that anti-individualism appears to be in tension with the claims that equivocation is never rational and that mental content is epistemically transparent. I have presented a picture of warrant for pairing on which, in abnormal circumstances, equivocation can be warranted, at least in part *apriori*, and hence rational. I am going to conclude by explaining how the picture I have put forward is consistent with epistemic translucency, a motivated and principled restriction of epistemic transparency.

Recall that the pairing principle's norm of operation is: if instances are appropriately similar and there is no evidence of environment abnormality, pair the instances; otherwise, do not. If a thinker is in a normal environment and his pairing ability follows its norm, then it pairs instances iff they are appropriately similar. So, the paired instances will have content-relevant causal relations to the same entity and thus will be of the same type. So if a thinker's environment is normal and his pairing ability follows its norm, then it will always pair instances of the same type and never pair instances of different types. And the pairing ability's warrant for its operations is *apriori*. So, if the environment is normal, then a thinker can always avoid equivocation *apriori*. This explains how content is epistemically translucent.

If the thinker's default normality warrant is also *apriori*, then the entire warrant for correct univocal reasoning is *apriori*. In fact, the warrant for corrections of equivocation would also be *apriori*, so long as the environment is normal and the equivocation is thus not *anti-individualistically induced*. Because of the environment's normality, the only possible equivocations would be the familiar ones due to lack attention, complexity of concept, self-

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deception, and the like. And anti-individualism gives us no reason to doubt that a rational thinker is at least capable of correcting such equivocations *apriori*. So, there is a domain of cognition to which the common-sense rationalist picture applies: the domain of reasoning that is correct in normal environments. And we can now explain the intuitive appeal of epistemic transparency. If one focuses on rational thinkers in normal environments, one focuses on thinkers who, using rational faculties, reason univocally and avoid equivocation. If one does not appreciate the significance of the environment's normality, epistemic transparency is a natural conclusion. Boghossian's neglect of the possibility of epistemic translucency leads him to unwarranted pessimistic conclusions about the incompatibility of anti-individualism with the idea that minimal rationality requires being able to reason logically.

At the same time, on my proposal we can recognize the limits of reason. Reason can establish that different attitudes have the function of being of the same representational type. Reason can be sensitive to evidence of abnormality, and, in the absence of such evidence, produce cognitive structures that would function correctly in a normal environment. But reason cannot guarantee that its contributions to a thinker's conceptual activity match the world's contribution. Reason needs evidence of environmental abnormality, if reason is to match the world's abnormal contribution. And that matching or mismatching is one determinant of an attitude network's success or failure at realizing the same-type function. So by itself, reason cannot guarantee the success of all its operations — in particular, it cannot guarantee the success of attempts to reason univocally. Only given ultimately empirical input can anti-individualism-induced equivocation be avoided.

Our ability to reason in accord with logical norms has some constitutive dependence on the environment. Because of this, our ability to reason in accord with logical norms on

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purely *apriori* grounds is somewhat constrained. If one does not recognize the possibility of somewhat environmentally constrained reasoning capacities, then one can easily arrive at a radical rejection both of common-sense rationalism and also of the distinction between perceptual and reasoning capacities. In my view, this happens in different ways in the work of Campbell and Millikan. Both correctly recognize that *apriori* capacities cannot in every situation avoid equivocation. If an *apriori* pairing capacity must in any situation be able to avoid equivocation on *apriori* grounds alone, then there are no *apriori* pairing capacities. I think that Millikan and Campbell both more or less mistakenly accept this conditional and are let to mistakenly conclude that *apriori* capacities must play almost no role in certain kinds of logical reasoning and that experience must shoulder the burden. Once we recognize the possibility of constrained *apriori* capacities, we can avoid these mistakes.

Once we recognize the possibility of constrained *apriori* capacities, we can ask *how* constrained they are. And the answer, I think, is that they are slightly constrained and slightly dependent on a cooperative environment for success, but not overly so. We can acknowledge the intuitions motivating epistemic transparency while qualifying epistemic transparency in a motivated way, producing a common-sense rationalism that is consistent with anti-individualism.

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