The Natural Definition of Reality

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Introduction

This essay explores the relationship between reality and how we describe reality. On an individual basis, we hold certain facts about what *exists* to actually be the case in reality; these are our ontological commitments, and we express these commitments each and every time we speak. One may be more or less explicit about what he is ontologically committed to—for instance, one may say "apples exist" to express his commitment to the existence of apples or, at another time, he might say "some apples are red." Though the latter sentence does not *explicitly* state the existence of apples, I will, for the purposes of this essay, take both sentences to be ontologically committing.[1]

The problem with many of the ontological statements we make is that when we write them out in their logical form, their symbolizations do not always translate to exactly that which we intend for them to state. For instance, suppose I'm rummaging through my refrigerator when my roommate calls out to me from the other room, "Is there any pizza left?" I then look through the fridge to find that we're all out of pizza, and so I

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[1] The sentence "some apples are red" entails an implicit commitment to the existence of apples. The importance of making the distinction between explicit and implicit commitment is nicely argued for in Howard Peacock, "Two Kinds of Ontological Commitment," *The Philosophical Quarterly*, 61, no. 242 (2011): 79–104.

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respond "No, there's no pizza." Surely I mean to say "there's no pizza *in the fridge*," though, as my response stands, we might symbolize it as follows: ~∃x (*x is a slice of pizza*), which appears to express that I've claimed "there is no pizza *in the entire world*." Does this mean that I've ontologically committed myself to the non-existence of pizza? I should hope not, since I meant for my statement to be restricted to the domain "in my refrigerator," and it would be unreasonable to suppose that my roommate would have any confusion about this implied restriction. However, ontologists are much less understanding than college roommates when it comes to discerning implicit commitments from our claims in their logical form (although, perhaps this is just because pizza ceasing to exist is much more tragic for college students than for ontologists). This example represents only one of many different ways in which inconsistencies between our natural-language claims and their symbolic counterparts cause problems of ambiguity for our ontological commitments; though it strongly illustrates the specific part of the problem that I intend to investigate, which is expressed by the following question: How can we symbolize our statements so that we ontologically commit ourselves to exactly that which we intend to commit ourselves to, and nothing more nor less?

I will discuss the accounts of three philosophers who each hold a unique perspective regarding what is required of a language that serves to describe reality. In section I, I will present Willard Van Orman Quine's quantificational theory of ontological claims and Kit Fine's objection to it. Quine suggests that we should use an existential quantifier to state that a thing exists, whereas Fine thinks that the solution is not to use a quantifier, but an operator that introduces a term to be *constitutive of reality*. In sections II and III, I will explain Fine's reality operator and two potential problems for his account. Then, in section IV, I will discuss Ted Sider's solution, which offers a different approach to the notion of reality altogether. Sider explains that there is a fundamental structure of reality that is distorted by the languages we use to attempt to describe it. Sider introduces the notion of *naturalness*, which, I will argue, can be adopted by Fine's account to resolve the problems with the reality operator. Finally, in section V, I will present my hybrid-account of Fine's reality operator and Sider's notion of naturalness, which I call "the natural definition of reality." I will argue that this definition can make sense of using a reality operator to express our ontological commitments.

I. The Quantificational View of Ontological Claims

Quine's quantificational theory of ontological claims serves to address the question "how should we formulate the central question of ontology?" Quine's account essentially equates ontological questions with quantificational questions such that existence-likeness, or ontological commitment, is expressed using quantifiers '$\exists x$' (Quine 7). For instance, when we ask "do numbers exist?" we are asking 'are there numbers?' since, under the quantificational view, the latter question may be formulated from the former by way of clarification. Therefore, '$\exists x$' is the existential quantifier, and the question is whether "$\exists x$ (*x is a number*)" (Fine 1).

Fine objects to Quine's solution on the grounds that the quantificational account "gets the basic logic of ontological commitment wrong." Fine's argument for his objection goes as follows: He supposes a realist about integers who expresses his ontological commitment to the integers with the claim "integers exist," and a realist about natural numbers who expresses her ontological commitment to natural numbers with the claim "natural numbers exist." Intuitively, Fine explains, it is the realist about integers who holds the stronger position, since committing to the integers is a commitment to more numbers than is committing to the natural numbers; namely, to the negative numbers (in addition to the natural numbers). However, Fine asserts that on the quantificational construal of these claims, it is the realist about natural numbers who, in fact, holds the stronger position. His reasoning is that, under the quantificational account, the claim "integers exist" amounts to claiming that "there is at least one integer" (which may or may not be a natural number), while the claim "natural numbers exist" amounts to claiming that "there is at least one natural number" (i.e. an integer that is also nonnegative).

The commitment to integers can be taken to be the commitment to F's, and the commitment to natural numbers, then, is the commitment to F &G's (the nonnegative integers). Fine explains, "The commitment to F's should in general be [stronger] than the commitment to F &G's, whereas the claim that there are F's is in general weaker than the claim that there are F &G's" (Fine 7). Therefore, Fine concludes that we should do away with the existential quantifier because it misconstrues the basic logic of ontological commitment.

II. Fine's Solution: The Reality Operator

Fine proposes that instead of using quantifiers to express ontological commitment, we should use a reality operator to make explicit the concept

of "reality." The reality operator is a sentential operator, similar to the word "not," in that it can be placed in front of a sentence ϕ to express "In reality, it is the case that ϕ"; or, alternatively, "It is constitutive of reality that ϕ." According to Fine, "Given the reality operator, we can now define an object to be real if, for some way the object might be, it is constitutive of reality that it is that way (in symbols, $Rx =_{df} \exists \phi R[\phi x]$)."[2] For example, on this account, the numbers 4 and 5 would be real if it is constitutive of reality that "5 is greater than 4" or "4 is less than 5" (12).[3] What's more is Fine explains that the notion is to be taken as a primitive. He says that he sees no way to define the concept of reality in different terms.

Fine's reasoning for why the reality operator is the better option can be understood through the following example: If we want to commit ourselves to the existence of F's using the claim "F's exist," we intend to commit ourselves to the existence of *all* of the F's; whereas, under the quantificational account, in which "F's exist" is equivalent to "$\exists x F x$," our claim merely amounts to claiming "there exists *at least one* F." But we want to commit ourselves to *all* of the F's, not just *at least one* of them. Therefore, Fine thinks that using the reality operator allows us to be able to express our commitments to *exactly* those things that we intend to commit ourselves to. He calls this "universal commitment," as opposed to "quantificational commitment" (Fine 9).

III. Two Potential Problems for Fine's Account

A. *The Equivocation Objection*

My first objection to Fine's account is with regard to his argument that I discussed in section I above; particularly, concerning his use of the word "stronger" in assessing the relative strengths of the claims "integers exist" and "natural numbers exist." I will argue that that Fine employs two different meanings of the word and, hence, equivocates on "strength."

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[2] The quantifier "for some ϕ" in this formulation is best taken to be a genuinely second-order quantifier, and it is essential that x should have an actual occurrence in the proposition ϕx. Furthermore, the 'R' to the right of the definition merely indicates that the proposition ϕx has some occurrence in the world.

[3] Any true sentence containing the terms '4' and '5' would suffice.

In the first sense of the word, Fine explains that, generally (i.e. in their natural-language form), "integers exist" is an ontologically *stronger* claim than "natural numbers exist" because to posit the integers is to posit more numbers than is to posit the natural numbers (i.e. the negative numbers *in addition to* the natural numbers); that is, commitment to the integers entails commitment to the natural numbers. We might appropriately refer to this first sense of "strength" as *that which posits more things*.

In the second sense of the word, Fine explains that, in their quantificational form, "natural numbers exist" is an ontologically *stronger* claim than "integers exist" because "integers exist" expresses the non-conjunctive $\exists x(x$ is an integer), whereas "natural numbers exist" expresses the conjunctive $\exists x(x$ is an integer & nonnegative), and conjunctions are more difficult to falsify than non-conjunctions. We might appropriately refer to this second sense of "strength" as *that which is more difficult to make false*.

In both cases, Fine uses the phrase "stronger claim" to indicate "that claim which holds a stronger ontological commitment." Therefore, if he is to contrast two ontological claims and their relative strengths in their natural-language form with their counterparts in their quantificational form for the purpose of deriving a contradiction, then his uses of the word "stronger" must be univocal throughout; otherwise, his argument is fallacious. Hence, Fine's argument against the quantificational view appears to be invalid due to his use of equivocal meanings of "strength." In light of this problem, we might doubt that Fine has provided us with sufficient reason to abandon the use of the existential quantifier.

B. The "Primitiveness Problem" for the Reality Operator

My second objection to Fine's account is with regard to his reality operator. By introducing the reality operator, Fine has effectively separated existence from reality such that a thing may *exist*, but it need not be constitutive of reality that it does. One response to Fine's account might be that he is too quick to make the jump to operationalism. Some philosophers, such as Friederike Moltmann, have argued that we can achieve the same result using a primitive existence-predicate that Fine claims to have achieved using a primitive reality operator. In which case, for example, one might commit herself to the existence of integers in the following way: $\forall x(Ix \supset Ex)$, where 'I' is the predicate for integer and 'E' is the predicate for existence (Moltmann 2010). Fine's problem with this notion is that it is uninformative of what existence is (Fine 11). For on one interpretation, the existence-predicate makes existence trivial. To see this, consider what is being said in the symbolization above: "For all x, if x is an integer, x exists."

This makes existence trivial because if I were to ask "do integers exist?" an acceptable response would be "sure they do, just ask your tax accountant!"

Now, considering this line of argument against the existence-predicate, a significant problem with Fine's reality operator becomes clear: The same argument works equally well against the primitive reality operator. The reality operator needs to be given truth conditions or else we learn no more about Fine's notion of reality than we learn about existence if we take the existence predicate to be a primitive. I will refer to this as the "primitiveness problem" for Fine's reality operator.

Though these objections present some serious problems for Fine's account, I believe that the reality operator can be reinvigorated. In section IV, I will discuss the account of Ted Sider, which can be taken to be an alternative solution to the problem of ontological commitment. Sider offers a notion of reality in terms of its fundamental structure. I will show how incorporating aspects of Sider's account can relieve Fine's account of the two problems I discussed above.

IV. The Fundamental Structure of Reality

In his book, *Writing the Book of the World*, Sider explains that the ultimate goal of metaphysics is insight into the structure of reality and insight into what the world is like at the most fundamental level. He asserts that discerning reality's structure entails finding patterns and figuring out categories for describing the world. Often, He refers to this process as "carving reality at its joints" (Sider 1).

These terms—structure, fundamental, and joint-carving—seem vague, and it is almost as if Sider intends for them to be this way. In my opinion, an attempt to define them explicitly defeats the purpose of our using them. This is because there is a sort of intuition behind our understanding of that which is fundamental and joint-carving in the world. To understand this, consider the following example: Imagine three objects; two electrons in identical intrinsic states, and a cow. Sider explains that it is the most natural thing in the world to say that the two electrons *go together*, and neither goes with the cow. Hence, the three objects can be divided into two groups—one containing the two electrons and the other containing the cow. It would seem very unnatural and puzzling if one were to suggest any other grouping of the three objects, most likely because the electrons share nothing in common with the cow and many things in common with each other. This sort of investigation is what Sider means by "carving reality at its joints"; discerning what is most natural about reality and ontologically committing ourselves to those natural things. "[If] we could make a

distinction between *genuine* features—features that are fundamental, that carve nature at the joints, whose sharing makes for similarity—and the rest, then we could say what we want" (Sider 4).

Sider thinks that we need to investigate reality's objective structure before we can do metaphysics. This is important because some philosophers, such as Eli Hirsch, believe that many metaphysical debates are "merely verbal disputes;" that is, our respective languages distort our metaphysical disagreements (Hirsch 231). Hence, there arises the problem that such disputes are not genuine. It is reasonable, then, to argue that no position is better than any other. If this is the case, then on what metaphysical accounts should we ground our ontology? In the spirit of Sider, the answer to this question is "on those which carve at the joints of reality." Creating the language of ontology, or "Ontologese," as he calls it, is Sider's aim.

Naturally, then, the question becomes: What will this language consist of? This is a more difficult question to tackle but Sider has left us with certain guidelines for determining what carves at the joints. For my purposes, I will not address all of these guidelines, but I intend to discuss one in particular—that "only the *most* fundamental things are to be included." Since *every* word in this new language must be joint-carving, no term or sentence can be less fundamental than any other. For Sider, the window, so to speak, into "the fundamental" is that which is "natural." That is, there is a natural interpretation of the way that things stand in reality, and the task of discerning that which is fundamental first requires examining what is natural. Our job, then, is to determine which terms are *more natural* than others, and only the *most* natural terms will be included in the language of ontology. This is what I mean when I say "naturalness."

In order to state facts of comparative naturalness, Sider proposes taking a two-placed operator "N," which operates on open-sentences and yields a closed sentence. A sentence of the form "N(φ,ψ)," where φ and ψ are sentences which may have free variables, states that "φ is more natural than ψ" (Sider 21) The naturalness operator is important because we can use it to determine what statements should reflect reality's fundamental structure. Consider the following two sentences: "Pigs have wings" and "Pigs roll around in the mud." There is nothing more fundamental than these sentences. For if we consider the terms involved—pigs, wings, mud, etc.—they are each equally basic and fundamental. Nonetheless, "pigs roll around in the mud" is clearly more natural than "pigs have wings." Thus, we may express the sentences' comparative-naturalness as follows: N(M,W), where M stands for "pigs roll around in the mud" and W stands for "pigs have wings."

For the remainder of this essay, I will present my account for why Fine's reality operator can benefit from incorporating Sider's naturalness-relation as a condition for that which is stated to be constitutive of reality. That is, we can use the naturalness-relation for determining whether or not something is indeed constitutive of reality (i.e., whether it is worthy of placement within the scope of the reality operator). Doing so should serve to circumvent the primitiveness problem for the reality operator because, where Fine's account is accused of being uninformative of what reality is like, Sider's account is acclaimed for tackling just that. The naturalness-relation can provide the terms by which we can attribute truth conditions to the reality operator.

Employing the notion of naturalness in Fine's account should also validate his argument against the quantificational view, which I objected to on the grounds that he equivocates on the word "stronger" (see sub-section A in section III above). For, since Fine refers to "positing more things" as the "intuitive position," when he says "the claim 'integers exist' is *stronger than* the claim 'natural numbers exist'," he might be correct, if what he means to say is that "the claim 'integers exist' is *more natural than* the claim 'natural numbers exist'." On this construal of Fine's argument—in which we talk about strength in terms of that which is more natural—his assertions about the relative strengths of the two claims become harmless since he is merely asserting that expressing our ontological commitments using quantifiers is less natural than expressing our commitments in ordinary language.

V. The Natural Definition of Reality

With that, let's consider what this new formulation will look like. I will refer to it as "the natural definition of reality."[4] Recall that for Fine, a term x is constitutive of reality when there is some sentence ϕ containing x, such that the proposition $\phi(x)$ has an actual occurrence in the world—in symbols, $Rx =_{df} \exists \phi R[\phi(x)]$. Given the primitiveness problem for this locution, what I am suggesting goes as follows:

$$R[\phi(x)] \equiv [\phi(x) \ \& \ \sim\exists\psi(x)(N(\psi,\phi))]$$

which reads: It is constitutive of reality that $\phi(x)$ *if and only if* $\phi(x)$ *and* it is not the case that there is some sentence ψ containing x such that

[4] "The natural definition of reality" was coined by my Metametaphysics professor, David McElhoes.

ψ is more natural than φ.[5] With this new formulation, we can now define both x to be real *and* the sentence φ(x) to be real. Because of the latter, this definition gets past the primitiveness problem on the grounds that the sentence φ makes for a description of reality; that is, a description of what x is like in reality. The two conjuncts that make up the consequent of the biconditional must be individually explained in order to understand my reasoning behind the definition. First, I will address the conjunct ~∃ψ(x)(N(ψ,φ)), then I will explain the importance of the conjunct φ(x).

φ and ψ represent two sentences that both contain the term x. Suppose that x stands for "electron," φ(x) stands for "electrons are subatomic particles," and ψ(x) stands for some sentence that describes electrons as well. The naturalness-condition manipulates the reality operator such that when we insert these sentences into the definition, it reads "It is constitutive of reality that electrons are subatomic particles *if and only if* it is not the case that there is some sentence ψ containing the term "electron" that is *more natural than* 'electrons are subatomic particles'." If any such sentence ψ is more natural than φ, then it is not constitutive of reality that φ(x). Whereas, if it is the case that φ *is* more natural than *any* other sentence ψ(x), then it *is* constitutive of reality that φ(x).[6]

However, if we only take the definition this far, a problem arises. Consider the fundamental sentence "Some electrons satisfy contradictions." This sentence is false, but there is nothing more natural than it. It mentions only fundamental things—electrons, contradictions, etc.—and it discusses only logical truth or falsehood. Since there is nothing more natural than this sentence, it follows from the natural definition of reality that it really is the case that some electrons satisfy contradictions (McElhoes, D., personal conversation, April 28, 2013).

The left-conjunct of the definition 'φ(x)' serves to evade this difficulty. To see this, consider the statement φ(x) ≡ φ(x). This is trivial on its own, but imposing the requirement that φ is true on the reality operator rules out any false statements—such as "some electrons satisfy contradictions"—as being constitutive of reality. To incorporate the 'Reality' of φ(x) and connect it to the naturalness-relation, we simply need to add the reality operator to the left side of the biconditional and the naturalness operator

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[5] It is important not to confuse the notation 'φ(x)' to signify that φ is a predicate. For my purposes, φ(x) merely represents a sentence φ containing a term x.

[6] Note that I am not attempting to offer a definition for what *more natural than* entails. Whatever 'naturalness' means, I am supposing that the relative naturalness of claims determines which claims are constitutive of reality.

to the right side—in symbols: $R[\phi(x)] \equiv [\phi(x) \ \& \ \sim\exists\psi(x)(N(\psi,\phi))]$. Hence, "the natural definition of reality."

Conclusion: The Case for Ontological Commitment

What progress does the natural definition of reality make toward resolving the problem of unwanted ontological commitment? If Fine's notion of the 'strength' of ontological claims is in fact defined by how natural a claim is, then my definition certainly points us in the right direction. However, to explore what a correct account would look like and to describe what that account entails are drastically different endeavors. The most notable difference is that the latter gives us a solution, whereas the former makes progress, but is incomplete.

The next step is to determine what it means for one thing to be *more natural than* another. I have proposed that the truth of a claim weighs heavily on whether the claim is constitutive of reality, and that truth is an individual requirement, separate from the naturalness condition; yet both must be met in order for a thing to really be the case in reality. Therefore, it follows that the truth of a claim has nothing to do with how natural it is. This seems odd. Though, at the same time, it does corroborate Sider's notion of 'reality's structure'. On the very first page of his book, Sider explains that "[discerning structure] means inquiring into how the world fundamentally is, as opposed to how we ordinarily speak or think of it" (Sider 1). So it would make sense that truth-value and naturalness are wholly unrelated concepts. For truth-value is concerned with language, but naturalness and fundamentality, as Sider describes them, have nothing to do with language. These are concepts that we use in our attempt to get at what reality *actually* is like; with the language we use to describe it aside. But how could we possibly do this? Trying to describe reality (or anything, for that matter) without using language would be like trying to lift yourself up by your boot straps. This leads me to believe that metaphysics and ontology are not intended to mix.

It's like having a complex idea, taking short-hand notes on a piece of scrap paper that only you can perfectly understand, and then delivering those notes to someone else to articulate what you are trying to say, giving him no explanation whatsoever. Metaphysics is the language we use to do ontology but the problem is that the finished product is intended to reflect reality's structure, while metaphysics (the means), is like the piece of scrap paper. It distorts what we *mean* to say. For this reason, I believe that Sider is on the right track. Carving reality at its joints and then creating an objective language to talk about it is key to establishing a perfect ontology. Therefore, we must discern reality's fundamental structure before we can know to what to ontologically commit ourselves.

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