

# Is More Objective Reality Really Something More?

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## 1. Introduction

In the Third Meditation, Descartes undertakes to prove the existence of God (CSM II, 27–31; AT VII, 40–45;<sup>1</sup> the argument is variously known as the First Cosmological Argument or the “Trademark” argument). A great deal appears to ride on the success of the proof. In the First Meditation Descartes had given “powerful and well thought-out reasons” (CSM II, 15; AT VII, 21) for doubting the evidence of his senses, and for doubting even what seem like obvious truths of elementary arithmetic and geometry. In some of the groundwork for the proof in the Third Meditation (CSM II, 26–7; AT VII, 38–39) Descartes hints at even more fundamental epistemic worries. He asks what reason he has for believing that his ideas so much as resemble things existing outside him. At this point in his meditations the answer is “natural impulse” – i.e., no reason at all. Hence he has no reason to believe that the world outside him is anything like the way his ideas present it to him. He has no reason to believe that there are colored things, that space and time have a geometrical structure, even that the world is spatio-temporal at all. The proof is intended to begin the project of settling some of these worries. If God exists and is no deceiver, then “the things themselves which I think I perceive very clearly,” (CSM II, 25; AT VII 36) like simple things in arithmetic or geometry, are true. That much should show that our ideas do reflect, or that we can make them reflect, the basic categorical structure of the world (even if the ideas of sense do not present the world as it really is).

In this paper I discuss Descartes’ conception of objective reality. I describe a difficulty for a key step in the Cosmological Argument: Descartes hasn’t shown that more objective reality is really something more, and so he hasn’t shown that objective reality is governed by a causal adequacy principle in the same way that formal reality is. Descartes appears to have two ways out of the difficulty. The first leaves Descartes with a task faced by contemporary theories of content. The second pays a high price in ontology.

Here is how I will proceed. In the next section I lay out the basic materials for the First Cosmological Argument. Section 3 describes the structure of Descartes’ argument for the Causal Adequacy Principle, that there must be at

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<sup>1</sup> Page references are to the editions of Cottingham, Stoothof and Murdoch (Descartes (1984)) and of Adam and Tannery (Descartes (1964)). I quote the translation of Cottingham, Stoothof and Murdoch.

least as much formal reality in the efficient and total cause as there is in the effect of the same cause. Section 4 then describes the structure of the corresponding Causal Adequacy Principle for Ideas, that there must be at least as much formal reality in the cause of an idea as there is objective reality in the idea. Sections 5 and 6 focus on weaknesses in that argument. Some commentators hold that objective reality isn't anything real and so cannot require a special sort of cause. That is incorrect, though: objective reality is something real for Descartes and for just about any account of thought. The question, rather, should be this: is *more* objective reality really something more? That is: has Descartes justified his claim that a higher degree of objective reality really measures something in the world that is governed by a causal adequacy principle? In sections 7 and 8 I set this question in terms of contemporary measurement theory.<sup>2</sup> Section 9 discusses what Descartes would need to do if he keeps the assumption that the objective reality of an idea is something different from the formal reality of a thing. Section 10 explores the consequences of identifying the objective reality of an idea and the formal reality of an idea.

## 2. The First Cosmological Argument

In this section I lay out the basic materials for the First Cosmological Argument. The argument starts by assuming that I have an idea of God that clearly and distinctly represents whatever features of God will be required by the proof.<sup>3</sup> I prove that God exists by proving that only God could be the cause of that idea.

Ideas, according to Descartes, are mental particulars, for which the question of causal origin is appropriate. They are modes of thought (AT VII, 41; *Principles*, I, 64; CSM I, 215–16, AT VIIIA, 31). Modes are properties or features of substances (*Principles*, I, 56; CSM I, 211–12, AT VIIIA, 26). Hence a person begins to have an idea when his or her thought takes on one of these properties.

The argument exploits two principles concerning the kinds of causes that substances and modes must have. These principles depend on a “ranking” (sometimes called the “ontological hierarchy”) of all the things there are, and a corresponding ranking of ideas that are about things. One of the ways Descartes explains the ranking is in terms of perfection and independence. A substance (for instance, a person) is a *more perfect thing* than a mode of a substance (for instance, that person's fondness for mathematics). The substance is more perfect because it is less dependent. A mode depends for its existence on the substance of which it is a mode. Since a substance can persist through changes

<sup>2</sup> Matthews (1994b) argues for the utility of thinking about propositional attitudes in terms of measurement theory. In this he follows Davidson (1974b), Churchland (1979), Field (1980b) and others.

<sup>3</sup> Hobbes (*The Third Set of Objections* (CSM II, 127; AT VII, 180)), and more recently Dilley (1970), argue that I *don't* have any such idea.

in many of its modes, the reverse dependency does not hold. Since dependency is a form of limitation, and hence imperfection, it follows that a substance is more perfect than a mode. An infinite substance (like God) is a more perfect thing than a finite substance, since finitude is limitation. Hence all *things* stand in a rank ordering according to their perfection. That is to say, using Descartes' terminology, that every existing thing has a greater or lesser degree of formal reality. (That is not to say that some things are more or less real than other things.)

Ideas also stand in a rank ordering, depending on the rank ordering, or degree of formal reality, of the things the ideas are about. The degree of *objective reality* of any idea is the degree of formal reality of the most perfect of the things that that idea is about.

Undoubtedly, the ideas which represent substances to me amount to something more and, so to speak, contain within themselves more objective reality (i.e., participate by representation in a higher degree of being or perfection) than the ideas which merely represent modes or accidents. Again, the idea that gives me my understanding of a supreme God, eternal, infinite, (immutable,) omniscient, omnipotent and the creator of all things that exist apart from him, certainly has in it more objective reality than the ideas that represent finite substances. (CSM II, 28; AT VII, 40; additions in diamond brackets are from the French version) Degrees of formal reality are governed by a Causal Adequacy Principle: there must be at least as much (reality) in the efficient and total cause as in the effect of that same cause. For where, I ask, could the effect get its reality from, if not from the cause? And how could the cause give it to the effect, unless it possessed it? (CSM II, 28; AT VII, 40)

As Descartes understands it (see below, section 3) this Causal Adequacy Principle entails that anything that begins to exist must have an efficient and total cause. The formal reality of a thing – hence its degrees of perfection and independence – begins to exist when the thing begins to exist. Hence “what is more perfect – that is, contains in itself more reality – cannot arise from what is less perfect” (CSM II, 28; AT VII, 40–1).

Ideas are modes of thought, and as modes of thought they have very little formal reality. The Causal Adequacy Principle says only that, considered as a mode, an idea requires a cause which is at least as perfect as a mode of any substance. Since I am a substance, and any substance has more perfection than any mode, I am causally adequate to cause modes, and hence I could be the cause of my own ideas *considered only as modes*: “The nature of an idea is such that of itself it requires no formal reality other than what it derives from my thought, of which it is a mode” (CSM II, 28; AT VII, 41). But considered as containing more or less objective reality, the origination of ideas is governed by a parallel Causal Adequacy Principle for Ideas:

But in order for a given idea to contain such and such objective reality, it must surely derive it from some cause, which contains at least as much formal reality as there is objective reality in the idea. For if we suppose that an idea contains something which was not in its cause, it must have got this from nothing; yet the mode of being by which a thing exists objectively (or representatively) in the

intellect by way of an idea, imperfect though it may be, is certainly not nothing, and so it cannot come from nothing. (CSM II 28–9; AT VII, 41)

Then: my idea of God has the highest degree of objective reality, and God is the only thing that could have that much formal reality, hence only God could have caused my idea (and it must have had a cause), hence God exists.

### 3. The Causal Adequacy Principle

Descartes was not entirely clear about the precise starting point for this argument, and there is some contention in recent commentary about its structure. In the Third Meditation he claims that the starting point is what I have called the Causal Adequacy Principle, and that a Causal Principle of Sufficient Reason follows from the Causal Adequacy Principle:

Now it is manifest by the natural light that there must be at least as much (reality) in the efficient and total cause as in the effect of that cause. For where, I ask, could the effect get its reality from, if not from the cause? And how could the cause give it to the effect unless it possessed it? It follows from this both that something cannot arise from nothing, and also that what is more perfect – that is, contains in itself more reality – cannot arise from what is less perfect. (CSM II, 28; AT VII, 40–1)

Putting it more formally we have:

[CAP]                      The Causal Adequacy Principle: There must be at least as much reality in the efficient and total cause as there is in the effect of that same cause.

Therefore,

[CPSR]                     The Causal Principle of Sufficient Reason: Something cannot come into being from nothing.

Williams (1978b, p. 141), following Hume (1739/1978, I, 3, iii) argues that the argument is circular. [CPSR] follows from [CAP] only on the assumption that everything that begins to exist has a cause; but that assumption *is* [CPSR]. Descartes could defend himself by starting with a version of [CAP] which is more general than [CPSR]. Suppose, for instance, that [CPSR] refers only to the beginnings of existence of substances, while this more general version of [CAP] claims that things in general, both substances and properties, cannot come into being from nothing. Then [CPSR] follows from this version of [CAP] and not vice versa. But Descartes was not especially worried about which principle comes first. Under some pressure from the Second Objectors, he remarked that [CAP] is “just the same as the common ‘nothing comes from nothing’” (CSM II, 97; AT VII, 135).

There is another option that makes sense: to take [CPSR] as basic, and as covering any beginnings of existence, and to derive [CAP] from it. I suggest the following as a fully explicit argument that uses materials suggested

by Descartes' comments on his own justification for the Causal Adequacy Principle.

- [CPSR]            The Causal Principle of Sufficient Reason: Something cannot come into being from nothing.
- [FR]                Formal reality is something.
- [FR-INC]         An increment of formal reality is something: more formal reality is more of something.
- [LIKE]             For certain properties, like can only be caused by like.
- [FR-LIKE]         Formal reality is governed by [LIKE].
- Therefore,
- [CAP]              The Causal Adequacy Principle: There must be at least as much reality in the efficient and total cause as there is in the effect of that same cause.

[FR] and [CPSR] together only demand that formal reality has a cause. Adding [FR-INC] demands additionally that increments of formal reality have a cause as well. So far, however, nothing has been said about what kind of causes are needed. [LIKE] and [FR-LIKE] specify that increments of formal reality require increments of formal reality as causes.

This argument is valid. Is it sound? I begin with the question, what exactly *is* formal reality? Curley (1978a, p. 130) is right that Descartes is far from clear on this point. Descartes speaks of the degree of perfection of a thing, the degree of independence of a thing, and the intricacy or complexity of a thing (CSM II, 10; AT VII 14; CSM II, 75; AT VII, 104). Nowhere does he attempt a precise or defensible specification of how to rank all things by their formal reality. Curley thinks the argument founders on this crucial and ineliminable vagueness.

I doubt whether we could now muster much support for the ontological hierarchy Descartes has in view. But the idea is structurally clear enough, and I think we do believe in some properties that are structurally quite similar. So I want to grant Descartes the idea and see where else the argument leads us.

[LIKE] guards against the metaphysical principle that anything can cause anything, in this case the possibility that, even though degrees of formal reality are something, they could be produced by another kind of thing – for instance, by the color of a substance, or by the mere fact that a substance exists. [LIKE] is a venerable principle (Makin (1991)). It is one that we continue to endorse. Mackie (1982, p. 35) notes that conservation laws have the form of [LIKE], e.g., the law of the conservation of energy. Mackie objects to Descartes' use of principles like these, on the ground that they are contingent. That is, of course, the right thing to say in retrospect. But Descartes is, I think, in a better position than this criticism allows. For one thing, conservation laws have a function in the development of theories that distinguishes them from other law-like regularities (Feynman (1965) describes this function). There is more pressure to hold on to such laws in the face of disconfirming instances than for

other laws, and evidence that they are false is of fundamental importance. For another, Descartes is clearly prepared to insist that his causal principles are not subject to disconfirmation by empirical evidence (*Second Replies*, CSM II, 96; AT VII, 134).

Descartes has nothing to say about which properties are governed by [LIKE] or why. If Mackie's suggestion is right, then they include some of the properties referred to by laws that have the special role just mentioned. One might, as does Frankel (1986b), hold that for Descartes the causal principles are part of the concept of rational explanation. So there may be a variety of ways to fill in this argument for [CAP].<sup>4</sup>

Starting the argument with [CPSR] has the virtue that it is venerable, very widely accepted, and to this day rather hard comfortably to deny. Deniable it is, however. Hume pointed out that it is "neither intuitively nor demonstrably certain". Many have found his claim incredible. Kant, perhaps, argued that it is in the nature of our experience of objects and events that they must have causes. I follow Hume on this, and think that the argument really does founder here. But I want to give Descartes this premise for the sake of the rest of the argument.

#### 4. The Causal Adequacy Principle for Ideas

The corresponding argument to the Causal Adequacy Principle for Ideas has more problems. I'll start by giving a clearly flawed version of the argument, exactly parallel to the argument for [CAP], then fixing it.

[CPSR]	The Causal Principle of Sufficient Reason: Something cannot come into being from nothing.
[OR]	Objective reality is something.
[OR-INC]	An increment of objective reality is something: more objective reality is more of something.
[LIKE]	For certain properties, like can only be caused by like.
[OR-LIKE]	Objective reality is governed by [LIKE].
Therefore,	
[CAPI]	The Causal Adequacy Principle for Ideas: Every idea that begins to exist is caused to exist by something that has as at least as much formal reality as the idea has objective reality.

<sup>4</sup> Dicker (1993a, p. 114) notes an unpublished objection by James Van Cleve. Van Cleve argues, in effect, that the only way to get from [CPSR] to [CAP] is to assume that increments of formal reality are the sort of something spoken of in the [CPSR], so that only causes with as much formal reality can produce them – but, since that assumption *is* the [CAP], the argument is question-begging. If there is a way to give a non-question-begging justification for [LIKE] and [FR-LIKE] then Descartes has an answer to Van Cleve.

## Is More Objective Reality Really Something More?

61

The idea is to find just the same causal requirement on the existence of increments of objective reality as we found on the existence of increments of formal reality. The flaw is [OR-LIKE]: a principle that demands the cause be like the effect won't help support a claim that the cause should be different from the effect. Descartes gives the following considerations to bridge the gap:

And although the reality which I am considering in my ideas is merely objective reality, I must not on that account suppose that the same reality need not exist formally in the causes of my ideas, but that it is enough for it to be present in them objectively. For just as the objective mode of being belongs to ideas by their very nature, so the formal mode of being belongs to the causes of ideas – or at least the first and most important ones – by *their* very nature. And although one idea may perhaps originate from another, there cannot be an infinite regress here; eventually one must reach a primary idea, the cause of which will be like an archetype which contains formally (and in fact) all the reality (or perfection) which is present only objectively (or representatively) in the idea. (CSM II, 29; AT VII, 41–2)

So increments of objective reality need something different (although closely related) as their causes – that is, increments of formal reality. I suggest the following as an argument that will get the conclusion:

[CPSR]                    The Causal Principle of Sufficient Reason: Something cannot come into being from nothing.

[OR]                        Objective reality is something.

[OR-INC]                An increment of objective reality is something: more objective reality is more of something.

[Pseudo-LIKE]        For certain properties, like can only be caused by uniquely isomorphic like: for such a property L there is exactly one distinct property R, such that L's can only be caused by R's; if L's have increments, then so do R's, and L's can only be caused by R's that stand at least as high in the corresponding ranking.<sup>5</sup>

[OR-Pseudo-LIKE]    Objective reality is governed by [Pseudo-LIKE], and the relevant uniquely isomorphic like is formal reality.

Therefore,

[CAPI]                    Every idea that begins to exist is caused to exist by something that has at least as much formal reality as the idea has objective reality.

So increments of objective reality are something, and as such they fall under the Causal Principle of Sufficient Reason. The precise way they are governed by that principle is given by [Pseudo-LIKE] and [OR-Pseudo-LIKE]. So the

<sup>5</sup> Adding in the idea that the *chain* of causes for an idea must eventually include some formally existing thing that has at least as much formal reality as the idea has objective reality would make the statement of the argument unnecessarily complicated.

more objective reality an idea has, the more formal reality must be possessed by some actually existing thing in the causal chain that leads up to the idea.

This argument is valid. Most commentators hold that it is unsound, either hopelessly so, or that it is in serious need of foundational buttressing. Various strategies have suggested themselves: 1) Delahunty (1980a, p. 45) explains [CAPI] on the basis of a “muddle” about the logical form of attitude ascriptions; 2) Kenny (1968), Cottingham (1986a) and Dicker (1993a) suggest that [CAPI] is pretty plausible even though the derivation is bad; 3) Loeb (1988, p. 388) suggests that the [CAPI] is *ad hoc* and question-begging, and offers a “political” explanation for why Descartes offered the argument even though he knew it was bad; 4) O’Toole (1993b) defends the derivation by explaining why Descartes offers the consideration about an infinite regress of ideas; and 5) Sinkler (1989b) offers a foundational or “dialectical” justification for [CAPI] based on Aristotle’s justification for the Principle of Non-Contradiction (1005b35–1011b22): a thinker in Descartes’ position in the Third Meditation should recognize, once he or she attempts to deny it, that the very mental act of attempting to deny it presupposes it.

Although I have doubts about the details of Sinkler’s suggestion, I think she is on the right track. [OR-Pseudo-LIKE] appears to be based on the claim (CSM II, 29; AT VII, 42): “the formal mode of being belongs to the causes of ideas – or at least the first and most important ones – by *their* very nature”. The issue then seems to be the nature of causes. One could hope to derive this claim from a more general claim about reason, explanation, causation and existence. And that kind of derivation seems to be appropriate given the epistemic weight this proof is supposed to bear: the idea would be to derive a claim about the categorical structure of the world (that my clear and distinct ideas are true) from a very general claim about explanation and causation. Perhaps – although I do not know how – that claim can be underwritten just by thinking about the conditions for the possibility of thinking at all.

So the situation is this. Suppose we grant Descartes [OR-Pseudo-LIKE] and [Pseudo-LIKE]. The argument for [CAPI] goes through, provided [OR] and [OR-INC] are true. So we need now to ask what they mean and whether they are true.

## 5. Is objective reality really something real?

Neither Descartes nor any of his commentators distinguishes between [OR] and [OR-INC]. Hence it is unclear what it means to ask whether objective reality is something actual or real (as Caterus and Gassendi put it). Denying that it is might be asserting that [OR] is false. Since [OR-INC] presupposes [OR], if [OR] is false then [OR-INC] is either false or meaningless. But the denial can also be understood as asserting that even though [OR] is true, [OR-INC] is false. In this section I provide an interpretation of [OR] that should be acceptable to nearly anyone. I will then go on to raise doubts about [OR-INC].

What reasons might we now give for believing that objective reality is something actual or real, that is, that [OR] is true? Let us assume an ontological hierarchy of the sort that grounds the claim that formal reality is something. Let us also assume (as we clearly must) that ideas are about things, and that ideas can be about things that do not actually exist. I might, for example, have the thought that there is a cup of coffee on the table before me, even though there is no cup of coffee on the table before me. The ontological hierarchy dictates that if there *were* a cup of coffee there, it would have a certain degree of formal reality, say,  $n$ . My idea, since it is about that cup of coffee, is such that it is about something with the  $n^{\text{th}}$  degree of formal reality. Let us then interpret the idea of objective reality in this way: that feature of my idea, that it is about something with  $n$  degrees of formal reality, is its objective reality, and its degree of objective reality is exactly  $n$ . This feature of the idea is certainly an actual or real feature of the idea. In this sense, at least, objective reality is something: it really is something real.

Caterus claimed that objective reality “is merely an extraneous label ... something which is not actual, and which is simply an empty label, a non-entity” (CSM II, 67; AT VII, 92), and bases his claim on the thought that the objective reality of my idea of the sun is just the extrinsic fact about my intellect that it happens to be related to the sun. It is a mere relation. Descartes responds that the relation between the intellect and something located outside the intellect certainly *is* an extraneous label. But that relation is not the same thing as objective reality.

But if the question is about what the *idea* of the sun is, and we answer that it is the thing which is thought of, in so far as it has objective being in the intellect, no one will take this to be the sun itself with this extraneous label applied to it. ‘Objective being in the intellect’ will not here mean ‘the determination of an act of the intellect by means of an object’, but will signify the object’s being in the intellect in the way in which its objects are normally there. By this I mean that the idea of the sun is the sun itself existing in the intellect – not of course formally existing, as it does in the heavens, but objectively existing, i.e. in the way in which objects normally are in the intellect. (CSM II, 75; AT VII, 102)

The way in which objects normally are in the intellect is a way which permits an object to exist in the intellect while that object does not exist outside the intellect. In this sense objective reality cannot be a relation between the intellect and something existing outside the intellect, since it is possible (at least in most cases) for the idea and its objective reality to exist even if the object outside the intellect does not. Caterus seems altogether wrong: objective reality is not a mere “extraneous label” (i.e., a relation among actually existing objects); it might be some kind of relation (for instance, to whatever grounds modal facts about what would be so if an idea were true), but that is no obstacle to its being something actual; and that something actual might require a certain sort of cause.

Gassendi also objects that objective reality is nothing real, and his objection fails for similar reasons. He asks, what is it about an idea that makes it an idea

of one thing rather than another, and raises this objection, discussing an idea of himself:

Now the reality belonging to this idea is, according to your distinction, of two kinds. Its *formal* reality cannot be any other than that fine and subtle substance which flows from me, and is then received by the intellect and fashioned into an idea. (If you will not allow that the semblance proceeding from an object is a substantial effluence, then make it whatever you like, but you will only diminish its reality.) The *objective* reality, on the other hand, can be nothing but the representation or likeness of me which the idea carries, or at any rate the pattern according to which the parts of the idea are fitted together so as to represent me. Whichever way you take it, it seems to be nothing real, since it is merely a relation between the various parts and between the parts and myself; in other words, it is merely a mode of the idea's formal reality, in virtue of which it has taken on this particular form. (CSM II, 202; AT VII, 290)

For an Aristotelian, the fact that an idea is about what it is about is grounded in some other facts: the structure, or formal arrangement, of the material parts of the idea. An idea of Gassendi represents Gassendi by sharing a form with Gassendi. Gassendi claims that the arrangement "seems to be nothing real". Again, that seems to be false: if the parts of the idea are related to one another, that is certainly something real about them. Equally, regardless of how the content of the idea arises from its material causes, if it is an idea that is about certain things which have a certain degree of formal reality, then that is a property the idea really has.

Gassendi is on to something worrisome, though. Suppose that some Aristotelian theory of content is right. What could prevent an idea from arising by accident? Suppose my idea of God is an idea about God in virtue of some structural feature F; what is to prevent the material of my mind from acquiring that structural feature by accident?<sup>6</sup> Even if it really is a property of the idea that it is about something with a certain degree of formal reality, why does that property demand causal accounting that goes beyond the causal accounting required for ideas in general?<sup>7</sup>

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<sup>6</sup> The Aristotelian these days has an answer, but it is one that begs the question currently at issue. Suppose she is an externalist about content, in the sense of Putnam (1975) or Davidson (1987). Then one of the structural components of thoughts involving the concept C will, in many cases, be the actual existence of things that fall under the concept C. (My thoughts are about water, while my Twin's are about XYZ, because my thoughts occur in a watery environment, while my Twin's occur in an XYZ-ish environment.) A position of this sort could entail the claim that necessarily, if I have a thought of C's, then the total explanation of my having the thought I do must involve my being somehow actually related to C's. [Pseudo-LIKE] is a relative of this claim. Externalist positions about content have some startlingly counter-intuitive consequences; Davidson's position, for instance (illustrated with the case of the Swampman) denies precisely the point currently at issue, that is, that thoughts of C's can occur purely accidentally.

<sup>7</sup> Notice that raising this worry does not require endorsing Hume's criticism, i.e., giving up on [CPSR]. The worry isn't that the idea might end up accidentally having this property "from nothing"; it is rather that objective reality (assumed now to be a real feature of the idea) hasn't yet been shown to be anything the existence of which would be "from nothing" if it doesn't have a cause with as much formal reality as the idea has objective reality. Content might, for

To sum up. There are good reasons to endorse [OR], given the ontological hierarchy and some uncontroversial claims about ideas. We have granted Descartes that something cannot come into being from nothing, that is, [CPSR]. We are granting that for certain ranges of properties like must be caused by suitably similar like, that is, [Pseudo-LIKE].<sup>8</sup> We have *not* granted Descartes that increments of objective reality are something, in the sense that more objective reality is more of something, that is, [OR-INC]. We are about to consider reasons for thinking that Descartes has not supported [OR-INC].

## 6. Is more objective reality really something more?

Margaret Wilson (1978c, pp. 136–8) offers the following objection, in effect against [OR-INC]:

But suppose we allow, for the sake of discussion, that an absolutely clear and distinct idea of an infinitely perfect being has infinite objective reality. Are we obliged to suppose that this idea has an infinitely real cause?

Well, ‘where can an effect derive its reality, if not from its cause?’ (AT VII, 40; HR I, 162). Yes, but why should we suppose that objective reality to degree  $n$  is as much reality *überhaupt* as formal reality to degree  $n$ ? Isn’t objective existence something less than formal existence? ... Descartes has simply made an arbitrary stipulation here. Why should the imperfection of objective being relative to real existence not mean that a cause with  $n$  degrees of formal reality – since it possesses this reality in the comparatively perfect mode of actual existence – bring about an idea with  $n + m$  degrees of objective reality?

I think that Wilson is right that, for all Descartes has said, he *has* made an arbitrary stipulation. But I think that the force of the point is obscured by two features of the model that Wilson offers in its support, the suggestion that an appropriate Causal Adequacy Principle for Ideas might say that a cause with the  $n^{\text{th}}$  degree of formal reality can cause an idea with the  $(n + m)^{\text{th}}$  degree of objective reality.

First, the model is generated by asking whether objective reality is as much reality *überhaupt* as formal reality, and answering that it is, after all, “something less.” But surely this is not the answer that Descartes would give. By Descartes’ lights there is no such thing as “reality *überhaupt*.” There are various kinds of being and various kinds of degrees of reality. Of course objective reality is related to formal reality but they are nevertheless distinct.<sup>9</sup>

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instance, supervene on something material, and hence the only causal requirement on content would derive from the way the [CAP] constrains the causation of material things.

<sup>8</sup> We will not consider [OR-Pseudo-LIKE] further, since its fortunes fall with those of [OR-INC].

<sup>9</sup> O’Toole (1993b, p. 187–8, note 32) advances a similar worry about Wilson’s argument. Williams (1978b, p. 143) offers an objection to the first Cosmological Argument that is similar to Wilson’s, except that it depends more heavily on conflating objective reality with reality *überhaupt*.

Wilson relies on the Fifth Meditation claim that existence is a perfection. But that claim doesn’t entail that objective reality is the same *sort of thing* as formal reality. So it is not clear why that

Second, I believe the force of Wilson's point lies in raising the question about how the two scales are related, rather than the particular suggestion about how it might go. Descartes does, seemingly arbitrarily, stipulate that the degree of objective reality of an idea shall be the degree of formal reality of the object it represents. Wilson's objection should lead us to ask why it should not be some other function of the degree of formal reality of the object it represents. That is the important question; and it seems to me the point can be made in a more general way.

## 7. Measurement Theory

How should we go about answering the questions, how are the scales related, and what bearing does the relation have on Descartes' derivation of the Causal Adequacy Principle for Ideas? One completely anachronistic approach (although one with which Descartes might have had a lot of sympathy) is to look at the scales in the terms of measurement theory.

Measurement theory is the mathematical theory of measurement systems. It states what kinds of measurement there are, and, corresponding to the kinds of measurement, what gets measured by any given kind of measurement. It states what must be true of things in the world if they can be measured by a particular kind of measurement. It states what features of a measurement system don't actually correspond to anything in the world. One motivation behind the development of measurement theory is that it's sometimes difficult to tell, given a measurement system, exactly what it measures. Consequently it is easy to be misled by features of a measurement system into thinking something is measured which actually is not. The history of psychometrics illustrates this trap. Time and again researchers have been misled by the possibility of getting a score for an individual from some testing instrument into thinking that the score captures something causally real about the individual.

Let me say a little about measurement theory (following Suppes and Zinnes (1963)) before casting the objection to Descartes' causal argument in its terms.

Measurement begins with ordinary things and some of their relations. It then establishes a relation between those things and relations, on the one hand, and numbers (or some other set of objects), on the other. We can call the empirical objects and relations an empirical system, and the numbers or other objects a measurement domain. The relation that the measurement sets up between the empirical system and the measurement domain is one of *representation*.<sup>10</sup>

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claim should have any bearing on what kind of cause something with objective being must have, since objective reality is simply a different property than formal reality.

<sup>10</sup> This term, as used in measurement theory, carries no implications that might accrue to it from the use of 'representation' which picks out things which have what Searle (1983, p. 1) calls Intentionality, "that property of many mental states and events by which they are directed at or about or of objects and states of affairs in the world".

A measurement represents some fact about an empirical object by relating it to an item in the measurement domain, typically a number. The empirical fact is typically a relational fact. Take masses, for example. The masses of physical objects stand in comparative relations: one object may have a greater or lesser mass than another. A measurement of the mass of an object represents that object's relations to all other massive objects. It represents them using relations the number has to all the other numbers.

Now, numbers, like any set of objects that might make up a measurement domain, stand in all kinds of relations to one another. But only some of these relations represent the relations of the things that are measured. The pigments in Joos van Cleve's *The Virgin and Child* make up a representation of Mary and Jesus, but the fact that one of the pigments was manufactured in Leyden doesn't represent anything about Mary or anything else. Most maps represent bodies of water by using blue ink, but water is nearly never the color of the ink that is used to represent it.

This fact leads to the two fundamental tasks that measurement theory describes. Any measurement system (like the gram measurement system for mass) can be justified by showing in detail which features of the empirical system are represented by which features of the measurement domain. The justification consists in proofs of a *representation* theorem and a *uniqueness* theorem.

The representation theorem states several things about the empirical system and the measurement domain:

- which properties and relations in the empirical system are measured;
- structural characteristics of those properties and relations;
- which properties and relations in the measurement domain are used to represent those in the empirical system;
- and a demonstration that the properties and relations in the measurement domain have just the structural characteristics of the properties and relations in the empirical system.

Proof of the representation theorem thus shows that there is one way to represent the empirical relations in the measurement domain.

The uniqueness theorem states how one good way to represent the empirical relations may be transformed into another good way. If there is one way to represent the empirical relations in the measurement domain, there are usually infinitely many ways. Masses may be measured in grams, and they may be measured in many other ways as well. Mass is measured on what is called a ratio scale; what characterizes a ratio scale is that any ratio scale can be transformed into another, equally adequate scale, by multiplying all the measurements by a positive constant. Temperature is measured by an interval scale; any interval scale can be transformed into another, equally adequate scale by multiplying the measurements by a constant and adding another constant. Proof of a uniqueness theorem consists in a derivation of the type of scale from characteristics of the empirical system that is measured.

The uniqueness theorem also implicitly specifies properties that are artifacts

of the measurement system. For instance, the fact that 37 is prime is an artifact of a Fahrenheit measurement of a temperature a little over the freezing point of water. The corresponding measurement in Celsius (25/9) isn't even an integer.

For my purposes it will be useful to describe one other kind of scale. Ordinal scales represent an ordering in the empirical system by the ordering of, for instance, numbers. One ordinal scale can be transformed into another, equally adequate, scale using any monotone increasing or decreasing function. The Mohs hardness scale of minerals is an ordinal scale. One mineral stands higher on the scale than another just in case the first can scratch the second, but the second cannot scratch the first. Notice that an equally good scale could capture this set of relational facts by assigning the *lowest* number to the hardest mineral.

## 8. The Argument for the Causal Adequacy Principle for Ideas

We can describe a measurement system that represents the degrees of formal reality of things. Choice of measurement domain is determined by how rich a set of relations we want to represent. Descartes is not, as we've seen, entirely clear about the structure of the formal reality ranking. Sometimes it appears that it has only three levels: substances rank over modes or attributes of substances, and infinite substances rank over finite substances. We could, consequently, measure the relations of formal reality in a very simple measurement domain, like the letters: we could map the lowest point in the ranking to the letter 'A' and the highest to the letter 'C', and let the order of the letters in the alphabet represent the ranking of the reality of objects.

Various considerations suggest enriching the measurement system. Some of Descartes' examples suggest that reality is a continuous quantity: for instance, the discussion of the idea of an intricate machine (CSM II, 10; AT VII 14; CSM II, 75; AT VII, 104) leads naturally, via the claim that intricacy is a continuous feature, to the idea that reality is also continuous. Again, if place in the ranking depends on degree of perfection, it would seem that there are more than three degrees of perfection. Moreover, since some things have more formal reality than other things, it would be well to represent formal reality in a system of things on which a "more than" relation is defined, and it is not clear whether the letter 'B' is more than the letter 'A'. So let us think of formal reality as coming in real-numbered degrees. Colors have the 0 degree of formal reality (since the idea of color is materially false); modes of substances have various positive degrees of formal reality; simple substances have higher degrees; complex substances, still higher. Since God is infinitely perfect, God has an infinite degree of formal reality.

Then the argument for the Causal Adequacy Principle runs as follows. Given the nature of the ontological ranking of objects, it is plausible to suppose that measurements of formal reality are made in something like an interval scale, such that allowable transformations of scale can be made by multiplying by one constant and adding another. So the higher the measure, the more of *something*

an object has. Like must be caused by like, and so the more of that *something* an object has, the more of that *something* its cause must have.

The argument for the Causal Adequacy Principle for Ideas is exactly parallel, but with two additions. First, we need to describe the measurement system for degrees of objective reality. According to Descartes the degree of objective reality of an idea is exactly the degree of formal reality of the object it represents. Second, as we've seen, for objective reality, like can only be caused by uniquely isomorphic like, i. e., [Pseudo-LIKE] and [OR-Pseudo-LIKE].

The slip is the first addition: the argument only goes through if a higher measure of objective reality measures an extra amount of *something*, i. e., if [OR-INC] is true. But Descartes has not shown this. Clearly Descartes is right that measurements on the objective reality scale really do measure certain relations among ideas: namely those relations that obtain among them in virtue of what they are about. The worry is rather whether *increments* in the measurements really do measure *increments of something* in the ideas (in exactly the sense in which increments of formal reality measurements really do measure increments of something in the things – a point we are granting Descartes for the sake of the argument). We don't yet have a justification of the claim that the relation "more than" in the measurement system actually corresponds to anything real in the empirical system. Put differently, we don't yet know what kind of scale the objective reality scale is; we don't know what the uniqueness proof for the scale looks like. Hence we don't know what other scales could do just as good a job of measuring this feature of ideas.

For instance, we don't know whether the following scale would do the job: we could preserve the ordering of ideas by the degree of formal reality of their objects with a scale which inverts the numerical relations among the degrees of formal reality of their objects. Then the idea of God would have the lowest degree of objective reality, and the idea of a color would have the highest. I submit that this scale may, for all Descartes says, represent the objective reality of ideas as well as it can be represented. If it does, then *increments* of objective reality are not real features of ideas ([OR-INC] is false), and the Causal Adequacy Principle for Ideas is unsupported.

## 9. How to connect the scales

Descartes could respond to this challenge in two ways. One would be to say something about how the scales are related that would justify identifying degrees of objective reality and degrees of formal reality. The other would be to show that there are not in fact two things to be related, but only one. In this section I discuss strategies for relating the scales. In the next I will describe a metaphysical account on which the degree of objective reality of an idea is strictly identical to the degree of formal reality of an object.

My suggestion that the objective reality scale might put God at the bottom, so to speak, relies implicitly on a conception of real numbers and of infinity

that Descartes might not have shared: that numbers are all value-neutral, and in particular that there is no valuational difference between, say, positive infinity and negative infinity. The objection, then, is that it is *not* legitimate to construct the scale of degrees of objective reality in such a way as to let the idea of God fall to the bottom. The numbers have their own values, and any number that gets attached to God had better be the best.<sup>11</sup>

Here is an exactly parallel argument. The Mohs hardness scale ranks minerals by hardness: the harder the mineral, the higher the number. We could, though, represent the hardness of diamonds by the number 0, and then assign higher numbers to softer materials. Now suppose someone to object that higher numbers are better than lower numbers, and diamonds are more valuable than any mineral, therefore we cannot invert the hardness scale. The objection fails because these facts about the numbers and the value of the minerals have nothing whatsoever to do with the measurement of *hardness*, which is the only thing the scale measures.

Here is another suggestion along similar lines.<sup>12</sup> Suppose Descartes concedes that the objective reality scale could be inverted, so that my idea of God has the lowest degree of objective reality and (say) the color of a thing has the highest. Why can't he then also invert the relevant portions of the proof of the [CAPI], the Causal Adequacy Principle for Ideas, to match? We could revise [Pseudo-LIKE] as follows: For certain properties, like can only be caused by uniquely isomorphic like: for such a property L there is exactly one distinct property R, such that L's can only be caused by R's; if L's have increments, then so do R's, and L's can only be caused by R's that stand at least as *low* in the corresponding ranking.

The difficulty is that this response just seems *ad hoc* until much more has been said about the nature of causation and objective reality to support the response. Consider the parallel suggestion for the formal reality scale. We could keep track of the relations among things by assigning the highest number to the things with the least degree of formal reality. In this case we *would* be forced to invert the relevant portions of the proof for the [CAP], the Causal Adequacy Principle. The reason we would be forced is that the concessions we have made, particularly the concessions that there is an ontological hierarchy and the interpretation of degrees of formal reality in its terms, give content to the idea that a difference in formal reality measures something with causal significance. But Descartes has said nothing similar to show that differences in objective reality measure anything with causal significance, and so he has given no reason to force us to invert the proof to match the inversion of the scale.

The only thing that could force a particular way of representing a given empirical domain is facts about what we are representing in that domain. If there were some contingent empirical fact about the causation of ideas that supported Descartes' linkage of degrees of objective reality and formal reality,

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<sup>11</sup> This objection was made by Robert Baum and by James Sennett.

<sup>12</sup> Thanks to an anonymous referee.

then he would have an answer. Descartes, however, cannot appeal to contingent facts, since he is willing to use these causal principles even when he has placed all his formerly alleged knowledge of the world outside his mind in doubt.

There could, though, be non-contingent facts about the nature of causation and ideas on the basis of which he could justify the linkage he claims. This sort of justification is a task that is faced in some form or other by many contemporary theories of content. Davidson's theory of meaning and content, for instance in (1974b), both holds that attributions of meaning and content are like measurements, and that there are non-contingent connections among meanings, contents, and the causal relations between a speaker and her environment. In order fully to work out this suggestion we would have to give proofs of a representation theorem and a uniqueness theorem for the attribution of content. We are not in a position to do that. It is not even clear whether it is possible, but proof of that is not at hand either. It is possible that there could be such proofs and that they would allow us to derive various kinds of linkages between the content and the causation of a thought that would be the analogues of the linkage Descartes needs at this point.

### 10. My idea of the sun is the sun itself

Everything I have said so far about degrees of objective reality and degrees of formal reality is based on the assumption that they are distinct quantities. If they are distinct, then Descartes hasn't justified bringing them together in the way he does. But Descartes could deny that assumption. Suppose Descartes could show that formal reality and objective reality are (in some appropriate sense) *the very same thing*. Then my objection (and Wilson's) is answered.

Descartes' interaction with Caterus provides some of the materials for making this identification. He writes,

'Objective being in the intellect' ... will signify the object's being in the intellect in the way in which its objects are normally there. By this I mean that the idea of the sun is the sun itself existing in the intellect – not of course formally existing, as it does in the heavens, but objectively existing, i. e. in the way in which objects normally are in the intellect. (CSM II, 75; AT VII, 102)

Clearly my idea of the sun cannot be strictly identical to the sun in the heavens. My idea and the sun in the heavens are independent, in the sense that either could exist in the absence of the other. Instead, some one thing, or object, exists in more than one *way* ("in the way in which objects normally are in the intellect"). The sun formally existing in the heavens is that thing existing in one *way*. The sun objectively existing in my intellect is that thing existing in another *way*. This one thing must be distinct both from the sun in the heavens and from any idea of the sun, since the sun in the heavens and all the ideas of the sun are independent in the sense just given.

What is this one thing, and what are its relations to the sun in the heavens and to my idea of the sun? Caterus offers a suggestion, taken from Meditation 5:

When, for example, I imagine a triangle, even if perhaps no such figure exists, or has ever existed, anywhere outside my thought, there is still a determinate nature, or essence, or form of the triangle which is immutable and eternal, and not invented by me or dependent on my mind. (CSM II, 44–5; AT VII, 64–5)

Caterus points to this passage as an answer to his rhetorically offered question, “But if you do not grant that ideas have a cause, you must at least explain why a given idea contains such and such objective reality.” Caterus grants that a “nature, or essence, or form” would answer the question, but says that such a nature “does not require a cause” since it is an eternal truth. In fact Descartes probably did believe that such a nature requires a cause,<sup>13</sup> but in this exchange he steers the discussion back to my idea: the nature does not require a cause, but “it is still no less appropriate to ask why there is an idea of it within us” (CSM II, 76; AT VII, 104).

Given these materials we can construct the following picture.<sup>14</sup> There are “natures” which are very similar to Platonic universals. There are particular things, some of which exist in space and time. Each particular thing is an instance of at least one nature. The particular thing formally existing is a nature or natures existing in a certain *way*, namely, formally existing. Ideas are among the particular things, and they are all instances of the nature of an idea, and so they are all that nature existing in a certain *way*, namely, formally existing. Moreover, natures ground the fact that ideas can be about any thing whatsoever. So natures have an additional *way* of existing, in ideas, namely objective being.

Furthermore, the ontological hierarchy is grounded in the natures. A mode of a substance is a less perfect thing than a substance because of the respective natures of the mode and the substance. Consequently the various natures are the ground for the formal reality of particular things, and the ground for the fact that one thing has more formal reality than another. Finally, the ground for the objective reality of an idea of a thing is precisely the same nature as the nature of that thing. So there can be no “space” between formal reality and objective reality into which measurement theory might drive a wedge, since they turn out to be one and the same thing.

There are several issues that would need to be handled for a complete articulation of this idea. What follows is a reason for thinking that, however this is done, we would arrive at a costly solution to the difficulty.

Since my idea of the sun and the sun in the heavens are distinct existences and, moreover, distinct kinds of existences, the solution to the difficulty requires more than the standard sort of Platonic universal to which Descartes is already committed. Suppose that the nature of the sun is a Platonic universal, and that the sun in the heavens is an instance of that universal, and that in a different *way* my idea of the sun also is an instance of that universal. The universal somehow brings along with it, to its instances, both the formal reality of the

<sup>13</sup> e.g., in his letter to Mersenne, 27 May 1630 (AT I, 151–2). Wilson (pp. 120–130) discusses the difficulties with this view.

<sup>14</sup> For discussions of the metaphysics of objective reality see Normore (1986c), Wells (1990) and Aquila (1974a).

sun, and the objective reality of my idea of the sun. In bringing along these realities, instantiation of this nature makes it so that the sun has a degree of formal reality that requires a certain kind of cause. Equally, instantiation of this nature makes it so that my idea of the sun has a degree of objective reality.

The question must once again be asked whether these degrees of reality are exactly the same in respect of the causal principle that nothing comes from nothing, the [CPSR]. I think the answer once again is “not necessarily”. Since instantiation of the universal in the sun in the heavens and instantiation of the universal in my idea are clearly different kinds of instantiation, there is no guarantee that the formally existing instances have to be governed by the causal principle in the same way.

Universals specify what their instances are like; so why can't the universal specify that the degree of objective reality of my idea of the sun be governed by the causal principle in just the way that the degree of formal reality of the sun in the heavens is governed by the causal principle? Perhaps it can. But this looks suspiciously like constructing ontology to get past a sticky bit in an argument: the universal just is the weak premise in the argument. We would want to ask why there is a universal *like that*, and then we would once again be faced with the problem of justifying the Causal Adequacy Principle for Ideas.

Once again, the difficulty comes from allowing the objective reality of the idea of the sun to be distinct in some way from the formal reality of the sun in the heavens. So let us say that they are not distinct in any way. Let us say that the objective reality of my idea of the sun is strictly identical to the formal reality of the sun in the heavens. Both the objective reality of my idea and the formal reality of the sun in the heavens are strictly identical to a nature or universal, which is distinct both from the idea and the sun in the heavens. The universal is a “constituent” of both the sun in the heavens and the idea in my mind (but not a material or detachable part). David Armstrong's (1989a) conception of immanent universals is structurally similar. Two dogs are the same in respect of being dogs. What makes them both dogs is something that is literally the same in both dogs. That thing is the universal for dog. The universal is wholly present in both dogs; it is a constituent (but not a material or detachable part) of each dog. Applying this idea to the Cosmological Argument, we get the following. The sun in the heavens has a certain degree of formal reality, and the [CAP] requires that something with that degree of formal reality has a cause with at least that much formal reality. My idea of the sun has a certain degree of objective reality. That is because my idea has a constituent that is also a constituent of the sun in the heavens. Having that very constituent is the metaphysical ground both of the sun's having the degree of formal reality it has and the idea's having the degree of objective reality *it* has. Since the [CAP] requires that *anything* with that constituent must have a cause with at least as much formal reality, the [CAP] also requires that any *idea* with that constituent will also have a cause with at least that much formal reality.

This proposal raises more questions than it settles. Descartes does not anywhere else endorse anything like this conception of universals. As with the version of the argument using standard Platonic universals, we will want to ask

why formal and objective reality are related in this way, once again raising the question, what reason is there for thinking that increments of objective reality have the sort of causal significance required for the Cosmological Argument?

## 11. Conclusion

Descartes says “if we suppose that an idea contains something which was not in its cause, it must have got this from nothing” (CSM II, 29; AT VII 41). His formulation of the First Cosmological Argument encourages casting the argument in terms of degrees of objective reality. Thinking of it that way leads to asking about the properties of the measurement system in which attributions of degrees of reality are made. If we assume that degrees of objective reality measure something different from degrees of formal reality, or that objective reality is in any way something distinct from formal reality, the argument has a gap: why does it follow from the fact that an idea is an idea about a thing with a certain degree formal reality, that that idea has “something” which demands a cause with at least as much formal reality? Bridging this gap would require Descartes to provide a more articulated account of causation and intentionality than he offers. Contemporary theories of thought content have a similar, and equally unfulfilled, obligation. Or else he could deny the difference and hold that the objective reality of an idea is strictly identical to the formal reality of what the idea is about. How exactly that might go is not completely clear, but it seems as though the cost in metaphysical commitment is very high.<sup>15</sup>

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