



## ON THE ERROR OF TREATING FUNCTIONS AS OBJECTS

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**ABSTRACT.** In his late fragment, “Sources of Knowledge of Mathematics and Natural Sciences,” Frege laments the tendency to confuse functions with objects and says, “It is here that the tendency of language by its use of the definite article to stamp as an object what is a function and hence a non-object, proves itself to be the source of inaccurate and misleading expressions and also of errors of thought. Probably most of the impurities that contaminate the logical source of knowledge have their origins in this.” This paper applies Frege’s logical insights to a series of influential modal arguments for the existence of souls or minds, in order to demonstrate that they hinge on the error of treating functions as objects. Related arguments have also resulted in the claim that identity statements are necessary, and that apparent identities “really” involve relations of constitution. Here it is argued that once we recognize that all these arguments involve the assimilation of objects and concepts (which Frege identifies with functions) they can be seen to be defective.

**Keywords:** Gottlob Frege; Plato; René Descartes; Saul Kripke; mind brain identity; constitution

How to cite: Green, Karen (2016), “On the Error of Treating Functions as Objects,” *Analysis and Metaphysics* 15: 20–35.

*Received 13 December 2015 • Received in revised form 25 January 2016*  
*Accepted 25 January 2016 • Available online 19 February 2016*

It is here that the tendency of language by its use of the definite article to stamp as an object what is a function and hence a non-object, proves itself to be the source of inaccurate and misleading expressions and also of errors of thought. Probably most of the impurities that contaminate the logical source of knowledge have their origins in this.<sup>1</sup>

From the perspective of the later Wittgenstein, philosophy is little more than a pathology, a confused search for ontological or metaphysical truths, fostered by misleading analogies inherent in natural language. There are many kinds

of language game, and Wittgenstein encourages us to resist a grammar that underlies “the idea that language always functions in one way.”<sup>2</sup> One can surely have some sympathy with his suspicion of the misleading aspects of natural language, when it is applied to the case of Gottlob Frege, who had been at least partly responsible for luring the young Wittgenstein into philosophy. For Frege’s quest for an account of the foundations of arithmetic was stymied when he was misled by features of grammar into assuming that numbers are objects. Taking as reliable the way “three,” “one hundred,” and “forty-five” function in sentences, such as, “Three is prime” and “One hundred is greater than forty-five,” Frege became convinced that he needed to identify numbers with logical objects; for the expressions referring to them operate as singular terms.<sup>3</sup> A direct consequence of this fatal assumption was the assimilation of numbers with the extensions of higher-order concepts, and the introduction into the *Grundgesetze* of the flawed comprehension principle, which mired it in paradox.<sup>4</sup> At the end of his life, Frege lamented the illusory features of natural language, which had beguiled him into dedicating his life to a futile quest.<sup>5</sup>

There is a rather bitter irony to this story. For, from the beginning of his career, Frege was fully aware of many of the misleading features of natural language. He developed his *Begriffsschrift* in order to be able to reason using a more precise linguistic tool, in which every inferential step would be clear. He distinguished use from mention. He suggested that the syntax of subject and predicate is logically misleading, and clearly differentiated the logical relation of an object falling under a concept, from that of the subordination of one concept to another. He distinguished the “is” of identity from the “is” of predication. He introduced quantification, and with it was able to avoid ambiguities in scope, in ways not available to earlier logicians.

According to Frege, we think in language, but natural language is ambiguous and lacking in logical structure. One frequently occurring phenomenon, which leads to logical errors, is that the same word can be used, “to designate a concept and a single object which falls under that concept.”<sup>6</sup> This feature of natural language is connected with the tendency not to distinguish instantiation, an object falling under a concept, from the subordination of one concept to another. Frege claims that the distinction between objects and concepts is logically primitive.<sup>7</sup> There are objects, which he says, in somewhat metaphorical language, are able to stand on their own, and concepts, which are not able to stand on their own, but are only grasped as that which we recognize to be shared or otherwise, by objects, in thinking about what is either true or false of them. In his mature logic, developed in *Grundgesetze*, concepts are identified with functions from objects to truth values. In a well constructed logical language, expressions that indicate objects – singular terms – are to be carefully distinguished from those that pick out concepts –

predicates. The first are complete, the second have gaps that need to be completed with singular terms, or with quantifiers – concepts that take concepts as values. Frege’s symbolic language, which he describes as a visual symbol system in which logical relations are represented through the use of the two dimensional features of the writing surface, attempts to conform to this demand.<sup>8</sup> But the moral that we should draw from Frege’s ultimate failure, is that not even a carefully constructed formal language can be guaranteed to prevent us from confusing objects and concepts. A whole raft of bad arguments, which continue to plague philosophers, trade on this confusion, and the failure of Frege’s logicist project is, arguably, also the result of his not having maintained this logical distinction sufficiently clearly.

Here I analyze four famous arguments, which I argue, are fallacious because they confuse object and concept. The first is Plato’s argument in the *Phaedo* that the soul is immortal.<sup>9</sup> The second Descartes’s modal argument for the distinctness of mind and body, the third is Kripke’s more recent version of Descartes’s argument, which is dependent on his case for the necessity of identity. The last is the closely connected argument for distinguishing identity and constitution. The fallacy in each of these can easily be seen when one follows Frege’s injunction not to confuse the ontological categories of object and concept, and formalizes them in the language of predicate logic. These fallacious arguments ultimately illustrate, in a striking way, how much modal ontology is illusory – spawned by misleading grammatical features of natural language.

### **1. Plato on the Immortality of the Soul (*Phaedo* 102d–107a)**

The last of the arguments for the immortality of the soul offered by Plato in the *Phaedo* can be spelt out in the following way:

- A) Nothing can become its opposite while still being itself.
- B) This is true not only of opposites but of things that contain opposites.
- C) The soul always brings life with it.
- D) Therefore the soul will never admit the opposite of life, that is death.
- E) What does not admit death is indestructible.<sup>10</sup>

Therefore: the soul is indestructible.

As soon as we translate these premises into a language that carefully distinguishes objects from concepts, and instantiation from subordination, its invalidity is manifest. A is ambiguous. On one reading it says that there is nothing that can change from falling under a concept to falling under the opposite concept. But this is clearly false. Many things can change from being hot to cold, short to tall, living to dead. Alternatively it says that nothing can fall under a concept and its opposite, at the same time. Taking

“not P” to be the opposite of “P” (purists should read the quote marks here as quasi-quotes), we have the true:

$$A') \neg \exists x (Px \& \neg Px).$$

Or we could render this modally as,

$$A'') \forall x \neg \diamond (Px \& \neg Px).$$

This translates, “Nothing can become its opposite while still being what it is” as, “It is not possible for anything to be what it is and its opposite” which is less ambiguous and true, so long as we assume an implicit, “at the same time.”

The next premise, B is a classic case in which natural language refers ambiguously to objects and concepts. It is clear that what Plato intends to say is that if, for instance, being three “contains” being prime, then it is not just the case that being three excludes being not three, but that being three also excludes being not prime. “Containment” is clearly subordination, not instantiation, though the phrase, “things that contain opposites” invites us to treat the concept as itself an object. We can formalize what is true in Plato’s observation thus:

$$B') \forall x ((Px \supset Qx) \supset \neg (Px \& \neg Qx)).$$

Which can be rendered with a modal emphasis,

$$B'') \forall x (\Box (Px \supset Qx) \supset \neg \diamond (Px \& \neg Qx)).$$

The situation in which the concept of being P is subordinate to the concept of being Q, can be represented as it’s being true of everything that, if it is necessary that if it is P then it is Q, this implies that, it is not possible that something should be P and not Q. I am using  $\Box$  and  $\diamond$  here, in a naïve way, which is not intended to imply any commitment to possible world semantics. The next premise, “The soul always brings life with it” also fails to observe the distinction between object and concept. Perhaps “the soul” refers to an object. But then we will have to interpret it as saying that the soul is always living, in which case the argument simply assumes the conclusion to be proved. So, charitably we should interpret it as saying that anything that has a soul is alive:

$$C') \forall x (x \text{ has a soul} \supset x \text{ is alive}).$$

An advantage of this is that D’ follows from B’ and C’ giving:

$$D') \neg \exists x (x \text{ has a soul} \& \neg x \text{ is alive}).$$

But of course, this is not what D says. What Plato wants to conclude is

$$D'') \forall x (x \text{ is a soul} \supset \neg \diamond \neg x \text{ is alive}).$$

Which renders, “The soul is necessarily alive.” How might Plato have thought that he could deduce this? From B’’ and  $\Box(x \text{ has a soul} \supset x \text{ is alive})$  he might have deduced,

D’’’)  $\forall x \neg \Diamond(x \text{ has a soul} \ \& \ \neg x \text{ is alive})$ .

But the fact that instantiating the concept of *having* a soul excludes instantiating the concept of not being alive, fails to imply that there *is* something that is necessarily alive. By Plato’s definitions, it is impossible to have a soul and not to be alive. This might lead one to conclude that humans don’t have souls, since humans are not necessarily living. Plato, however, was probably thinking of the soul as something the possession of which is sufficient for being alive. When humans instantiate the concept of having a soul they are necessarily alive. But natural language encourages us to speak of the concept of having a soul as implying the existence of an object had, and then to say of “it” that it is necessarily alive.

Actually, there are two fallacious steps in Plato’s argument as I have formulated it. To get from D’) to D’’’) he has to move from,  $x$  has a soul, to,  $x$  is a soul. Presumably he reasons that the soul, being that thing which, when possessed, brings life with it, then it, the soul, is necessarily living. But of course this is a fallacy. Suppose that there is a diamond ring that necessarily brings wealth with it, it is not possible to have this ring and not be wealthy. We cannot conclude that the ring is necessarily wealthy. The ring, which brings wealth to its possessor is not even the sort of thing to which it makes sense to attribute wealth. Similarly, the soul, which brings life to its possessor, may not be the sort of thing to which it makes sense to attribute life. But even if we were to find some way to allow him to deduce D’’’) which says that *if* anything *is* a soul then it is necessarily alive, this still would not justify him in assuming that there exists something which is a soul and necessarily alive.

Plato’s fallacy depends on moving from a relation of subordination, which is claimed to hold between the concepts of having a soul and being alive, to the claim that there is an object which instantiates the property of necessarily being alive. We might think that this fallacy is pretty obvious, and of at best historical interest. Yet I suggest that it is a perennial of modern as well as contemporary philosophers and modal logicians.

## 2. Descartes on the Distinctness of Mind and Body

In the *Meditations* Descartes argues that the mind and the body are distinct because he can conceive of himself existing without a body, while he cannot conceive of himself existing without a mind. His response to Arnaud’s objection to this claim includes the following short version of the argument for the distinctness of the mind and the body:

Hence it was that those additional attributes [being united to a body] were judged not to belong to the essence of the mind. For in my opinion nothing without which a thing can still exist is comprised in its essence, and although mind belongs to the essence of man, to be united to a human body is in the proper sense no part of the essence of mind.<sup>11</sup>

Informally, Descartes is arguing that he has a mind, and the additional attribute of being united to a body is not part of the essence of mind. For, mind is part of the essence of man, while to be united to a human body is not part of the essence of mind. If something can exist without something, then the latter is not part of the essence of the first.

Translating this argument into a language which respects the distinction between concept and object presents some difficulties, since it is not immediately clear how talk of essence translates into talk of concepts and objects. The essence of a thing is usually taken to consist in those properties without which a thing would not be a thing of the kind it is. So, the essence of humanity consists in the properties that a thing must have in order to fall under the concept of being human. The essence of mentality consists in the properties a thing must have in order to fall under the concept of either having or being a mind. Frege called these the marks of a concept. Taking this as our guide, we can translate Descartes' major premise,

F) If something can exist without something, then the latter is not part of the essence of the first as,

F')  $\exists x (Px \ \& \ \Diamond(Px \ \& \ \neg Qx)) \supset \neg \Box \forall x (Px \supset Qx)$ .

It is now easy enough to formalize,

G) Mind belongs to the essence of humanity.

and,

H) Being united to a human body is no part of the essence of mind

G')  $\forall x (x \text{ is human} \supset \neg \Diamond \neg x \text{ has a mind})$ .

and,

H')  $\neg \forall x (x \text{ has a mind} \supset \neg \Diamond \neg x \text{ has a human body})$ .

This says that some things may have minds which don't have human bodies, and indeed, there may be non-human thinking things, gods, angels, dolphins, apes, or maybe even computers. This might be equally formulated,

H'')  $\neg \Box \forall x (x \text{ has a mind} \supset x \text{ has a human body})$ .

But this does not show that,

I) It is possible that something could have a mind and not have any kind of body. For that we would need,

I')  $\Diamond \exists x (x \text{ has a mind} \ \& \ \neg x \text{ has a body})$ .

Charitably one could object that the qualifier "human" is a distraction. Really Descartes intended to assert,

H'')  $\neg \Box \forall x (x \text{ is has a mind} \supset x \text{ has a body})$ .

Then Descartes may have intended us to affirm the consequent and derive from H'' and F'

I'')  $\exists x (x \text{ has a mind} \ \& \ \Diamond (x \text{ has a mind} \ \& \ \neg x \text{ has a body}))$ .

This would indeed make I') true, but only at the cost of an obvious fallacy. To see this, take the case of its being essential to being a functioning airplane that it has wings, and not essential to a thing's having wings that it has an engine. We can't deduce from, it is not necessary that if a thing has wings, it has an engine, the conclusion that there is a functioning airplane and possibly it is a functioning airplane and does not have an engine.

More charitably, Descartes intends us to infer from G, and the truth of its instance, "Descartes is human," to  $\neg \Diamond \neg$ Descartes has a mind. Descartes also has a body and believes that it is not essential to his having a mind that he has a body. So, there is something, Descartes, which has a mind essentially, and which does not have a body essentially,

J)  $\exists x (\neg \Diamond \neg x \text{ has a mind} \ \& \ \Diamond \neg x \text{ has a body})$ .

This is enough to convince us that having a mind is not the same concept as having a body. It might be essential to being human that one has a mind, and it might not be essential to having a mind that one has a body. Equally it might be essential to being Descartes that he is a man, and not essential to his being a man that he wears a hat. But this does not imply that Descartes, the man, is a different *object* to Descartes, the hat wearer. Nor should we take J) to imply that the *thing* that has a mind is a different object to the *thing* that has a body. So J) does not imply that there is an ordinary object, the mind, which is a different ordinary object to the body.

What does follow, if having a mind is essential to being a man, while having a body is not, is that Descartes could continue to exist as a man without his body. Those who are materialists will doubt that this is the case. What does not follow is that there must have been two different *objects* here all along, the man, who had a mind essentially, and the body, which did not have a mind essentially. Or, if we do think that this is implied, we will have to say that in the case of Descartes and his hat there were also two different objects here all along, Descartes, who has the property of being a man essentially, and the hat wearer who does not have the property of being a

man essentially. Whenever we have an object that falls under a concept, which is subordinate to another concept, which is not subordinate to a third, Descartes' inference would entail that there are in fact multiple objects. As we shall see, this is a bullet well bitten by those who believe in the distinction between identity and constitution.

### 3. Kripke on Mind Brain Identity

Kripke endorses Descartes argument, rendering it, "a person or mind is distinct from his body, since the mind could exist without the body."<sup>12</sup> He offers a version of Descartes' argument that has a rather different form to the one above and is a *reductio ad absurdum*,

K) Descartes = Body  $\supset$   $\square$  (Descartes = Body).

L)  $\neg \square$  (Descartes = Body).

Therefore  $\neg$ (Descartes = Body).<sup>13</sup>

In this argument "Descartes" and "Body" are taken to be rigid designators. L) is taken to be false because it is conceivable that Descartes could have existed without his body. A good deal of the contemporary discussion of Kripke's argument has focused on whether the inference from, "it is conceivable that not p" to "it is not necessary that p" is sound.<sup>14</sup> Here we can bypass this worry. In the previous section we cast doubt on the cogency of Descartes' argument. Kripke's formulation suggests a slightly different but related line of attack. If Descartes and Body are identical and if it is essential to Body, that Body has a body then the claim, " $\neg \diamond \neg$  Descartes has a mind &  $\diamond \neg$  Descartes has a body," from which Descartes wants us to derive J) will be false. Kripke thinks that this poses a problem for the identity theorist, who wants to claim that the identity between say, the mind and the brain, or pain and C-fibers firing, is contingent. But, I shall argue, even if it turns out that Descartes was wrong, and his having a body is just as necessary for his continued existence as is his having a mind, this fact does not imply that the careful identity theorist is committed to treating minds as *objects* that are identical with brains.

Kripke poses a dilemma for the identity theorist, based on an argument for the necessity of identity. Either the person, or mind, is distinct from the body (or brain), or the mind and the brain are necessarily identical. Few people think that the mind is necessarily identical with the body (or brain), so the mind must be distinct from the body (or brain). But beneath this simple and apparently unassailable piece of reasoning there lie murky depths, which are revealed when we ask a few questions. Let us begin with the relation of

identity. Kripke offers an argument for the necessity of identity along the following lines:

M)  $a = a \supset \Box(a = a)$  (Everything is necessarily self-identical).

N)  $a = b \supset \Box(a = b)$  (from M and Leibniz law).

Let me first say that there is something very odd about this argument, if we think of it as formulated in a logically perfect language.<sup>15</sup> For, in such a language, we would not allow there to be different names for the same object. Any sentence of the form  $a=b$  would, by definition, be false. So Kripke must be assuming that he is talking about natural language, in which distinct names can turn out to pick out the same object. Frege, for whom this was a problem, concluded that in such cases the names (or singular terms) must be associated with different “ways of being given” the object in question, and called such “ways of being given the objects” senses, thus enriching his ontology, so that it included not just objects and concepts (the referents of singular terms and predicative expressions, respectively) but also the senses of singular terms and predicative expressions.<sup>16</sup> So, one might respond to Kripke’s argument by deploying the notion of sense, by observing that  $\Box$  introduces an opaque context, and by arguing that the assumption that, when there are distinct names for an object, they can be intersubstituted for each other *salvae veritate* in an opaque context, begs the question against those who believe that identity statements, involving distinct names, are not necessarily true.<sup>17</sup>

I do not want to take this more traditional path, however, for it is not necessary to introduce the distinction between sense and reference, in order to show that beneath Kripke’s formulations there is a strand of reasoning remarkably similar to the fallacious argumentation that we discovered in Plato, which depends on conflating objects and concepts. Plato might well have formulated C’ as

C’’)  $\forall x (x \text{ has a soul} \supset \neg \Diamond \neg x \text{ is alive})$ .

He read this as implying that if something is a soul, *it* is necessarily alive, and from this he wished to derive,

D’’)  $\exists x (x \text{ is a soul} \ \& \ \neg \Diamond \neg x \text{ is alive})$ .

He felt entitled to use the definite article in order to refer to *the soul* and say of *it* that it is necessarily living. Kripke’s argument for the necessity of identity has the same form. Being necessarily identical with itself is a concept. It is a concept under which every existing thing falls. So we have:

O)  $\forall x (x \text{ is an existing object} \supset \neg \Diamond \neg x=x)$ .

In order to apply Leibniz law and derive N from M we have to assume that O entitles us to derive

P)  $\exists x (x \text{ is an existing object} \ \& \ \neg \diamond \neg x = x)$ .

Some object exists and is not possibly not identical with itself. We can now refer to this thing, whatever it is as, the object, and say of *it* that it is necessarily self-identical. We take, if anything is an object then it is necessarily self-identical, to entitle us to talk about *the* object and say of *it* that *it* is necessarily self-identical in a manner that is analogous to Plato's transition from, if anything is a soul then it is necessarily living to, the soul is necessarily living. Since this assumption entitles us to derive N from M we should conclude that Kripke's new argument against mind brain identity falls back on one element of the fallacious reasoning in Plato's argument for the immortality of the soul.

For those who are convinced by Kripke's arguments for the necessity of identity, the previous arguments might, nevertheless, be taken to be a rescue of Plato, rather than a refutation of Kripke, so it seems worthwhile offering further evidence that Kripke's argument plays fast and loose with the distinction between concepts and objects. We can see this by asking what terms like "the mind" and "the brain" actually refer to. These expressions look like definite descriptions. But clearly, we are not here dealing with classic definite descriptions as analyzed by Russell. We are not saying that there is a unique mind and it is identical with something which is the unique brain. We would be saying something of this kind, were we to say "The Queen of England is the Head of the Anglican Church." But clearly, this is not what we are saying when we say the mind is the brain.

Indeed, it is not at all clear that "The mind is the brain" is an identity statement at all. Not, that is, if we think of identity as a relation that only holds for objects.<sup>18</sup> If we say "The end of life is the cessation of brain activity" or "Happiness is the reward of virtue" we are asserting a connection between a person's coming to the end of life and the cessation of their brain activity, or between a person's being happy and their being virtuous. We are asserting that a relationship holds between concepts. "The mind is the brain" is similar. It is short hand for something like, "Something has a mind if and only if it has a functioning brain of a certain kind."

Frege, whose insistence on distinguishing objects and concepts has been the guiding thread for the argument of this paper, insisted that identity does not hold for concepts, which, in a logically well-formed language will be referred to by unsaturated expressions such as "...is a mind" or "... is a brain." Nevertheless he thought that complete co-extensiveness is the analogue of identity for concepts.<sup>19</sup> We can adapt his notation for the extensions – or the courses of values – of concepts, to conform with the limitations of current

soft-ware, by replacing his Greek letters with roman ones, and formulate the analogue of identity for concepts thus:

$$Q) \hat{e}f(e) = \hat{a}g(a) = \forall x (fx = gx).$$

Where  $\hat{e}f(e)$  is a term for the extension of the concept  $f$  and  $\hat{a}g(a)$  a term for the extension of the concept  $g$ . Following Frege's understanding of the meaning of his formula language,  $Q$  says, that "the extension (course of values) of  $f$  is the same object as the extension (course of values) of  $g$ ," has the same truth value as, "the truth value of,  $x$ 's falling under the concept  $f$  is identical with the truth value of  $x$ 's falling under the concept  $g$ ." Since it is rather plausible to read the ordinary language expression "the mind" as a way of talking about the concept of having a mind, and similarly for "the brain," a careful formulation of, "the mind is the brain" might appear to be:

$$R) \hat{e} \text{ is a mind}(e) = \hat{a} \text{ is a brain}(a).$$

Here we face a slippage similar to that we noticed in Plato. Clearly, since there are dead, unthinking brains, the concept of being a mind is quite different from the concept of being a brain, and  $R$ ) is false. What we are interested in is the relationship between the concept of having a mind, and having a functioning brain of a certain kind. We need,

$$R') \hat{e} \text{ has a mind}(e) = \hat{a} \text{ has a brain}(a).$$

Where "has a brain" is short for having a functioning brain of the appropriate kind. This does allow us to formulate "the mind is the brain" as an identity. But it is an identity of extensions, or courses of values, and whatever one thinks about the identity of objects, it is simply counterintuitive to say that if extensions are identical then they are necessarily identical. What is true is that if  $\forall x \square (fx = gx)$  then  $\square (\hat{e}f(e) = \hat{a}g(a))$ . However, the correlate of  $K$

$$K') \hat{e} \text{ has a mind}(e) = \hat{a} \text{ has a brain}(a) \supset \square \forall x (x \text{ has a mind} = x \text{ has a brain}).$$

is a complete non-starter as a valid claim. There is no reason to think that if identical, the extensions of these two very different concepts are necessarily identical. One might try the following,

$$M') \hat{e}f(e) = \hat{e}f(e) \supset \square (\hat{e}f(e) = \hat{e}f(e)) \text{ (From, everything, including extensions, is necessarily self identical).}$$

$$N') \hat{e}f(e) = \hat{a}g(a) \supset \square (\hat{e}f(e) = \hat{a}g(a)) \text{ (from } M' \text{ by Leibniz's law).}$$

But this would show that any pair of co-extensive concepts is necessarily co-extensive, surely an intolerable result. This suggests that either extensions are not objects, or we need a restriction on Leibniz's law, or perhaps that Frege's courses of values are not extensions in the ordinary sense. Alternatively, it might be objected that expressions such as  $\hat{e}f(e)$  are not rigid designators. Yet, doing this would immediately rob Kripke's argument of any validity.

Kripke's argument was plausible if we thought of names as rigid designators, that is, as singular terms that pick out the same object in every possible world. If expressions such as "the mind" and "the brain" are not rigid designators, the argument does not get off the ground. If it is not possible to formulate singular terms that rigidly designate the mind and the brain, then we can't even express the necessity of their identity. At the very least, this shows that for Kripke's argument to succeed he needs to show how we can formulate such rigid designators.

In fact, if one believes that having a mind is simply having a functioning brain of the appropriate kind, then it will not be possible for something to exist with a mind without its having an appropriately functioning brain. It may turn out that these are just two ways of referring to the same concept, thought of as a function from objects to truth values, but we don't immediately recognize this because these concept expressions have different senses. In such a case it might not be possible for something to fall within the extension of, "... has a mind" without falling within the extension of "... has a brain," so one might accept that  $\forall x \Box (x \text{ has a mind} = x \text{ has a brain})$  and hence that,  $\Box(\hat{e} \text{ has a mind} (e) = \hat{a} \text{ has a brain} (a))$ . Alternatively, if one thinks that some computers may well be deemed to have minds, one will want to deny that it is necessary that anything that has a mind has a brain. But, even if one were to accept that the extensions of these concepts are necessarily identical, this would not show that there is an ordinary kind of *object* referred to by "the mind" which is necessarily identical to whatever is referred to by "the brain," if minds are brains.

#### 4. The Distinction between Identity and Constitution

It should by now be becoming clear that the argument for the distinction between identity and constitution is grounded on an inference which suffers from a similar defect to that identified in the argument against mind brain identity. Indeed, a footnote in *Naming and Necessity* lies at the origin contemporary discussions of the distinction, and in one version the argument has the same form as Kripke's argument against mind brain identity.<sup>20</sup> Take a statue and the marble out of which it is made.

K'') The statue = the marble  $\supset \Box$ (The statue = the marble).

L'')  $\neg \Box$  (The statue = the marble).

Therefore the statue is not identical with the marble from which it is made.

Alternatively, one can see the argument as being closer to Plato's original. It is often said informally that it is not possible for the statue to continue to exist and not be a statue, while it is possible for the marble to continue to

exist and not be a statue. Therefore, the statue and the marble have different modal properties and cannot be identical.<sup>21</sup> We are surely back to versions of A, A' and A'',

S)  $\neg\exists x (x \text{ is a statue} \ \& \ \neg x \text{ is a statue})$ .

Which we could render modally as,

S')  $\forall x \neg\Diamond (x \text{ is a statue} \ \& \ \neg x \text{ is a statue})$ .

Now clearly it is possible that the marble from which a statue is made should not be a statue. We can express this by,

T)  $\neg\forall x \neg\Diamond(x \text{ is marble} \ \& \ \neg x \text{ is a statue})$ .

But how do we get from these anodyne observations concerning the fact that falling under the concept of being a statue excludes not falling under the concept of being a statue, while falling under the concept of being marble does not exclude not falling under the concept of being a statue, to the conclusion that even when it is true that,

U)  $\exists x (x \text{ is a statue} \ \& \ x \text{ is made of marble})$ .

It is not true that  $\forall$ ?

V) The statue = the marble.

In order to do this we claim that the statue is necessarily a statue while the marble is not necessarily a statue, turning relations between concepts into talk about objects.

We saw that Plato's fallacy depends on moving from a relation of subordination, which is claimed to hold between the concepts of having a soul and being alive, to the claim that there is an object which instantiates the property of necessarily being alive. In the case at hand, we have a situation where the relation of subordination does not hold between the concept of being a particular lump of marble and that of being a particular statue. Either concept might have been instantiated without the other. This is then taken to justify us in asserting that we have two different objects, one of which is necessarily a statue, and another which is not. Once again, it is the slippage from concept to object which leads us into philosophical puzzlement, and commits us to the counter-intuitive conclusion that, faced with a marble statue alone in a room, one will be making a mistake if one says that there is just one object in the room.

## 5. Conclusion

In each of the cases that have been discussed there has been a transition from talking about some concept or property, the possession of which is necessary

for being a thing of a kind, to talking of an object. So, having a soul is that, the possession of which is necessary for being alive. Having a mind is that, the possession of which is necessary for being a human. Having the property of being self-identical is that, the possession of which is necessary for being an object. Having the property of being a statue is that, the possession of which is necessary for being a statue. We then speak of that, the possession of which is necessary in order to be a thing of a kind (a concept) as though it was itself an object. The soul, is necessarily alive. The human, necessarily has a mind. The object, is necessarily self-identical. The statue, is necessarily a statue. In this way, relations among concepts are turned into facts about the existence of things which have certain properties essentially. Subordination relations are turned into cases of instantiation. In the *Grundgesetze* Frege introduces a sign, which plays the role of the definite description in natural language. It turns an expression for a course of values into an expression which refers to the object that falls within the course of values, when there is only one such object.<sup>22</sup> He does this because he wants to talk not just about the course of values of the concept of being able to be put in one:one correspondence with an N numbered extension, but also about the number one, the number two etc. The definite article, an innocent device of natural language entices us to talk of souls, minds, objects, and numbers. Natural language and its grammar, as Wittgenstein saw, trap us in the fly bottle of modal ontology.

## NOTES

1. Gottlob Frege, *Posthumous Writings*, eds. Hans Hermes, Friedrich Kambartel, and Friedrich Kaulbach, trans. Peter Long and Roger White (Oxford: Basil Blackwell, 1979), 273.

2. Ludwig Wittgenstein, *Philosophical Investigations*, trans. Elizabeth Anscombe, 3rd edn. (Oxford: Basil Blackwell, 1967), §§65, 304, 09.

3. Gottlob Frege, *The Foundations of Arithmetic*, trans. J. L. Austin (Oxford: Basil Blackwell, 1950), 68–81.

4. *The Basic Laws of Arithmetic*, trans. Montgomery Furth (Berkeley and Los Angeles: University of California Press, 1964), 72.

5. *Posthumous Writings*, 263, 66, 69.

6. *Conceptual Notation and Related Articles*, trans. Terrell Ward Bynam (Oxford: Clarendon Press, 1972), 84.

7. *Posthumous Writings*, p. 142; *Wissenschaftlicher Briefwechsel*, eds. Gottfried Gabriel et al. (Hamburg: Felix Meiner Verlag, 1976), 224. This goes against a widespread interpretation, promoted by Dummett, according to which the object/concept distinction is derived from features of language and in particular the distinction between singular terms and predicates.

8. *Conceptual Notation and Related Articles*, 88. For illuminating recent discussions of Frege's notation see Gregory Landini, *Frege's Notations: What They*

*Are and How They Mean* (Houndmills, Basingstoke: Palgrave Macmillan, 2012). For the importance of the two-dimensional features of Frege's symbolism for representing logical relations, Danielle Macbeth, *Frege's Logic* (Cambridge, MA: Harvard University Press, 2005), 37–73.

9. For a defense of this argument see Dorothea Frede, "The Final Proof of the Immortality of the Soul in Plato's *Phaedo* 102a–107a," *Pronesis* (1978), 27–41. Frede's defense depends on allowing Plato the assumption that the soul is a substance, that is, in Fregean terms, an object. This is exactly the assumption that becomes questionable once the distinction between concept and object is carefully maintained.

10. For this simplification of Plato's argument I have followed Tim Connolly, "Plato's *Phaedo*," *The Internet Encyclopedia of Philosophy*, <http://www.iep.utm.edu/phaedo/#SSSH3civ2>

11. René Descartes, *The Philosophical Works of Descartes* (Cambridge: Cambridge University Press, 1931), vol. 2, 97.

12. Saul Kripke, *Naming and Necessity* (Oxford: Basil Blackwell, 1980), 144.

13. *Ibid.*, 145.

14. Alex Byrne, "Possibility and Imagination," *Philosophical Perspectives* 21 (2007), 125–144; David J. Chalmers, "Does Conceivability Entail Possibility?," in *Conceivability and Possibility*, eds. Tamar S. Gendler and John Hawthorne (Oxford: Oxford University Press, 2002).

15. For an extended critique of Kripke's argument see Dale Jacquette, "Kripke on the Necessity of Identity," *Analysis and Metaphysics* 13 (2014), 7–26.

16. The rather complex set of semantic concepts was illuminatingly set out by Frege in a letter to Husserl, Michael Beaney (ed.) *The Frege Reader* (Oxford: Blackwell, 1997), 149–150. See also Karen Green, "Logical Renovations: Restoring Frege's Functions," *Pacific Philosophical Quarterly* 73 (1992), 315–334; "A Pinch of Salt for Frege," *Synthese* 150 (2006), 209–228.

17. See for instance George Bealer, "Mental Properties," *Journal of Philosophy* 91 (1994), 185–208.

18. Perhaps as is assumed in Bealer, *ibid.* Kripke was talking about property (concept) identity all along, but then he should have explained how identity applies to properties.

19. Frege, *The Basic Laws of Arithmetic*, 72.

20. Kripke, *Naming and Necessity*, 145, n. 74.

21. Lynne Rudder Baker, "Why Constitution Is Not Identity," *Journal of Philosophy* 94 (1997), 599–621.

22. Frege, *The Basic Laws of Arithmetic*, 49–50.

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