An Improved Reply to the Argument from Categorization

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One argument raised against the classical view of concepts is the argument from cate-
gorization, which infers from empirical evidence concerning acts of categorization that
the best explanation for that evidence is inconsistent with the classical view. Building
on an argument and basic distinction drawn by Georges Rey, the present paper gives an
improved response to the argument from categorization by drawing further distinctions
among various epistemic and satisfaction conditions for concepts. The paper shows that
given such further distinctions, one sort of objection to Rey's account can be avoided,
and it is seen with further force that the classical view escapes refutation at the hands
of the argument from categorization.

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The argument I aim to critique in this paper is an argument I call *the argu-
ment from categorization*. That argument rejects the so-called *definitional* or
classical view of concepts, and the argument runs as follows. In acts of catego-
rization, one tends not to use any set of necessary and jointly sufficient con-
ditions to sort a given object into one or another metaphysical category.
Rather, it appears that concepts exhibit typicality effects. Some items get sort-
ed more quickly into a given category, and some items that are borderline
cases of being in that category fail to be sorted into that category. For
instance, robins get sorted into the *bird* category more rapidly than do pen-
guins, and some agents fail to sort ostriches into the *bird* category at all. As
the classical view predicts that one would use such a set of necessary and suf-
ficient conditions in acts of categorization, and that typicality effects would

not exist if the classical view were correct, then the classical view is false.[1,2] In short, the best explanation for such differences in categorization includes or entails the claim that the classical view is false, so the classical view of concepts is false.

My aim here is to improve on Georges Rey's (1983, 1985) reply to the argument from categorization by way of distinguishing among various epistemic and satisfaction conditions for concepts. Rey's reply is reviewed first, followed by the improved version. In the end, my conclusion is that the argument from categorization fails as an inference to the best explanation, and thus it fails as a criticism of the classical view of concepts.

Rey's Reply to the Argument

Rey (1983, 1985) sees the error in the argument to be as follows. There are a number of different roles that concepts are posited to play, and the argument from categorization conflates two of them: the epistemological function and the metaphysical function.

According to Rey, the epistemological function of a concept is how a concept is used to make judgments about whether something is in a concept's extension or not. One does have some conditions in mind when one decides whether something is a dog, for instance. Call those conditions the *confirmation conditions* for something's being a dog. Yet those conditions need not be the same conditions that something must satisfy in order to be a dog. Call those other conditions the *satisfaction conditions* for something's being a dog, or what conditions must be satisfied by something in order for it to be a dog. Concepts also play the role of being metaphysical categories, and Rey calls this role a concept's metaphysical function.

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[1]In part, what drives such a criticism is a supposition about concept possession. According to the critics, the classical view supposes that possessing a concept is to know the defining conditions for that concept — i.e., its classical analysis in terms of necessary and jointly sufficient conditions (Rey, 1983, p. 280). Any evidence in conflict with this supposition is then taken to be damaging to the classical view. As it appears that for many concepts we do not use any set of necessary and jointly sufficient conditions when sorting things into one category or another, the critics infer that the classical view is false. It is worth noting here that the supposition about concept possession that helps to motivate the argument is itself false. One need not know the defining conditions of a concept in order to possess that concept. Nevertheless, one might still take the empirical data involving categorization to be threatening to the classical view, as shall be seen below. For a critic of the classical view might still infer that typicality effects suggest that the right overall view of concepts should be able to explain such effects, and the classical view fails to do this.

[2]Some of the early reports of the empirical work in question here is given in Rosch (1999). The empirical evidence concerning categorization and typicality effects is summarized briefly by Rey (1983, pp. 238–241), more extensively by Smith and Medin (1981) [an excerpt of which is Smith and Medin, 1999], and more recently by Murphy (2002). See also Laurence and Margolis (1999, pp. 24–26).

Rey's reply then to the argument from categorization is that the empirical data apparently showing that necessary and jointly sufficient conditions have no role to play in concept possession only throw light on what the confirmation conditions for a concept are, not on what its satisfaction conditions are. The confirmation conditions for a concept might well not involve any necessary and sufficient conditions, but a specification of the satisfaction conditions for a concept could still take the form of a classical analysis.

So, what should one conclude with respect to empirical evidence such as the tendency among people to sort robins into the *bird* category more quickly than penguins? According to Rey, such evidence seems to tell us a great deal about the confirmation conditions for [bird], but nothing at all about what it is that makes something an instance of [bird] or not.[3] A specification of the confirmation conditions for a concept might not take the form of a classical analysis, but that tells us nothing about the nature of the satisfaction conditions for something's being an instance of a concept.

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Rey's reply looks to be a good start as a rebuttal to the argument from categorization. However, a further question remains as a reply: *Might such empirical data be telling us about the satisfaction conditions for a concept as well?* If so, then the empirical evidence would seem to serve as evidence against the classical view after all.

As I see it, there are two sorts of experimental situations that need to be kept in mind here. The first kind of case is (I) when the satisfaction conditions for [F] are known by us (the experimenters) and (II) when they are not. It looks clear that in case (I), the evidence from acts of categorization has no bearing on the possibility of classical analyses of the satisfaction conditions for a concept. Case (II), on the other hand, is more difficult to handle. When we do not ourselves know the satisfaction conditions for a concept, one might think that the evidence from acts of categorization is indicative of the satisfaction conditions for a concept *and not just its confirmation conditions.*

Further distinctions. The argument that follows should show that in neither case does the argument from categorization serve as good evidence against there being classical analyses that give the satisfaction conditions for a concept. But as I see it, Rey's distinction between the epistemic and metaphysical aspects of concepts needs to be more refined. As given so far, "satisfaction conditions" is ambiguous between *what it is to be an instance of a concept* and

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[3]A clarification with respect to notation: in what follows here, the expression "[F]" is short for "the concept of being *F*," which (for predicate expressions) is the concept expressed by the predicate "is *F*."

what one believes it is to be an instance of a concept. Take the concept [arthritis],
for instance. There is a great deal of difference between what it is for some-
thing to really be a case of arthritis and what one might *believe* counts as a case
of arthritis. Both senses correspond to different senses of "satisfaction condi-
tions." Let the conditions on which something really is a case of arthritis be
the *metaphysical satisfaction conditions* for [arthritis]. Let the conditions that an
agent *believes* to be the metaphysical satisfaction conditions for [arthritis] be
her *doxastic satisfaction conditions* for [arthritis]. These two sorts of satisfaction
conditions are also distinct from the confirmation conditions for a concept,
since one might well use some set of conditions to identify something as an
instance of a concept even though she herself believes those conditions *not* to
be the metaphysical satisfaction conditions for that concept.

An example should clarify the point further (from Burge, 1979). Take some-
one who believes arthritis to be a medical condition that affects the joints *and*
may affect muscles as well. Those conditions would be her doxastic satisfaction
conditions for something's being a case of arthritis, and those conditions would
differ from the conditions on which something really is a case of arthritis.
Suppose further that she identifies cases of arthritis on the basis of various
kinds of pain symptoms, with the further belief that the conditions she uses to
identify cases of arthritis are not what makes something a case of arthritis. So
the two sorts of satisfaction conditions are also distinct from the confirmation
conditions for a concept, for one might well use some set of conditions to iden-
tify something as an instance of a concept even though one believes those con-
ditions not to be the metaphysical satisfaction conditions for that concept.

Furthermore, we might draw a distinction between two sorts of *confirmation*
conditions. First of all, one might typically use some set of conditions for pur-
poses of categorization. But one might also have a number of beliefs about
what other sets of conditions would be reliable indicators of whether some-
thing is in the extension of a given concept. One might not typically use those
other sets of conditions (perhaps for the simple reason that the conditions one
does typically use to categorize objects makes categorization an easier task),
but one might still believe that those other conditions would be reliable con-
ditions to use for purposes of categorization. So I will continue to call the con-
ditions one typically uses for purposes of categorization one's *confirmation con-
ditions* for a concept. But call the conditions that an agent *believes* to be reli-
able indicators of whether something is an instance of a given concept her
doxastic confirmation conditions for that concept.

It might also be the case that, for some concepts, an agent might have
beliefs about the metaphysical satisfaction conditions yet not be able to sort
objects into the requisite category. Furthermore, for such concepts the agent
in question might not have any beliefs at all about what characteristics would

be reliable indicators of something's being in the extension of that concept. For instance, take Jackson's (1991) familiar example involving Mary the color-blind scientist: Mary might well have no capacity to categorize things into the *red* category, and thus have no confirmation conditions for [red]. But she might have some beliefs about what would count as a reliable indicator of red things' being red. She might believe that red things would typically *look* red, for instance. Now suppose (for sake of illustration) that color properties are physical properties identical to ranges of various reflectance properties of objects. Mary would then have knowledge of the metaphysical satisfaction conditions for [red], but this belief need not be the same as her belief(s) about what would be a reliable indicator of something's being red. For she might believe that once she is released from her prison, soon she will be able to identify red things just in virtue of how they look, rather than having to get out the appropriate instruments to measure reflectance properties. So, Mary's doxastic *satisfaction* conditions for [red] might differ from her doxastic *confirmation* conditions for [red], and those conditions would seem to be distinct from her confirmation conditions for [red] (which could well be nonexistent for her prior to her release).

The differences would seem to be even more pronounced for more theoretical concepts like [atom]. I might in fact know the metaphysical satisfaction conditions for [atom], and thus my doxastic satisfaction conditions for [atom] would be identical to the metaphysical satisfaction conditions for that concept. Yet I might have no beliefs at all about what would be a reliable indicator of something's being an atom, since I do not expect to have any direct acquaintance with such things. Nor might I have any typical conditions that I apply with respect to sorting or categorizing things into the *atom* category, again since I have no direct acquaintance with atoms themselves. But I can still have plenty of knowledge of what makes something an atom, nonetheless — I just would be unable to apply that knowledge to tasks of categorization. So again, the further distinctions drawn here would appear to be genuine.

To summarize, Rey's twofold distinction between metaphysical and epistemological "functions" of concepts should be refined into at least a fourfold distinction. For a given concept [F], one should distinguish between

(1) [F]'s *metaphysical satisfaction conditions*: the conditions under which something *really is* in [F]'s extension;

(2) an agent's *doxastic satisfaction conditions* for [F]: the conditions that an agent *believes* to be [F]'s metaphysical satisfaction conditions;

(3) an agent's *confirmation conditions* for [F]: the conditions an agent typically uses for purposes of categorization of objects as being in [F]'s extension or not; and

(4) an agent's *doxastic satisfaction conditions* for [F]: the conditions that an agent *believes* would be reliable for purposes of categorization of objects as being in [F]'s extension or not.

There could well be other distinctions to draw here, but the distinctions just made should be sufficient for purposes of the argument to follow.

The improved reply to the argument from categorization: case (I). One can now see why the argument from categorization fails as a criticism of the classical view. Take case (I) first. Suppose the extension of [F] is known (by us), and there are differences in categorization among the subjects. For instance, let [F] be [even number], and suppose typicality effects have been observed (say on average that 2 gets sorted into the *even number* category more quickly than 3176, and 60241 gets sorted into the *even number* category on occasion).[4] It looks like there are a number of possible explanations for the categorization differences: (1) there could be a difference in metaphysical satisfaction conditions among the concepts possessed by the subjects; (2) [even number] could be possessed or grasped in different ways by some of the subjects; (3) there could be a difference in confirmation, doxastic confirmation, or doxastic satisfaction conditions for [even number] among the subjects. Yet for this sort of case, none of these possibilities is in any way threatening to the classical view's take on the metaphysical satisfaction conditions for [even number], *since we already know that it has a classical analysis.*[5]

The improved reply to the argument from categorization: case (II). But what about case (II)? The supposition this time is that the extension of [F] is *not* known (by us), and there are differences in categorization among the subjects.[6] For instance, let [F] be [human being], and suppose typicality effects have been observed. There are three ways to explain the categorization differences: either (A) there is a difference between the confirmation, doxastic confirmation, or doxastic satisfaction conditions and the metaphysical satisfaction conditions for [human being] among the subjects, or (B) there is a difference in metaphysical satisfaction conditions among the concepts possessed by the subjects, or (C) the metaphysical satisfaction conditions for [human being] are genuinely indistinct (in the sense that the extension of [F] itself is *metaphysically* indistinct, or (D) [F] does not follow the classical view (at least

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[4]There is evidence for these sorts of typicality effects for [even number]. See Armstrong, Gleitman, and Gleitman (1999) and Laurence and Margolis (1999, p. 32).

[5]The concept [even number] has a classical analysis expressible by "Necessarily, for any x, x is an even number iff (x is an integer and x is divisible by 2 without remainder)."

[6]One might think that since the classical view is unthreatened by cases where we already know the extension of [F] (as in case (I)), we should not expect it to be threatened in cases where we do *not* know the extension of [F] (as in case (II)). Perhaps this inference is good, but the classical theorist can do better. Hence the argument to follow.

as part of the best explanation for the categorization differences).[7] However, the classical view is not threatened by any of possibilities (A), (B), or (C), and any of them are adequate explanations for the differences in categorization. At any rate, there is little reason to single out (D) as the best explanation, so the argument from categorization fails for case (II) as well.

Consider the argument with respect to case (II) in greater detail.

(P1) Suppose the extension of [F] is not known (by us), and there are differences in categorization among the subjects.[8]

This is the basic supposition for case (II). But as for case (I), what explains the differences in categorization?

(P2) The candidate explanations for the categorization differences are:
(A) There is a difference between the subjects' confirmation, doxastic confirmation, or doxastic satisfaction conditions for [F] and [F]'s metaphysical satisfaction conditions.
(B) There is a difference in metaphysical satisfaction conditions of the concepts possessed by the subjects.
(C) [F]'s extension is metaphysically indistinct.
(D) The metaphysical satisfaction conditions for [F] are not given by a classical analysis. That is, [F] does not follow the classical view of concepts.

The argument now proceeds by considering each of (A), (B), and (C) in turn. For candidate explanation (A),

(P3) If (A) then the categorization differences have no bearing on the metaphysical satisfaction conditions for [F]. For if those categorization differences can be explained in terms of differences between the subjects' confirmation conditions, doxastic confirmation conditions, and/or doxastic satisfaction conditions and [F]'s metaphysical satisfaction conditions, then nothing further follows about [F]'s metaphysical satisfaction conditions.

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[7]The expression "metaphysically indistinct extension" is used here (and in what follows) to speak of what some would call "fuzzy" extensions. But the "fuzziness" I consider here would not be *epistemic*, in the sense that it is difficult to tell whether something falls under a concept with such an indistinct extension. Rather, such fuzziness is here considered to be *metaphysical*, in the sense that it would be an indistinctness on the part of the world itself.

[8]An agent's confirmation, doxastic confirmation, and doxastic satisfaction conditions for [F] would each have an extension, but the supposition here is that we do not know the extension across possible worlds for [F] itself. That is, the supposition is that we do not know [F]'s *metaphysical* satisfaction conditions.

As with the argument with respect to case (I), the idea here is to explain the differences in categorization in terms of the conditions an agent uses in typically sorting objects into the F category, or in terms of the conditions an agent believes to be reliable indicators of something's being in the F category, or in terms of the conditions an agent believes to be the metaphysical satisfaction conditions for something's being in the F category. But there is no need to posit anything further about the metaphysical satisfaction conditions for [F] as part of that explanation. If the differences in categorization are completely explained by option (A), then there is no reason also to include the claim that the classical view is false as part of that explanation.

Now, for candidate explanation (B),

(P4) If (B) then not all of the concepts possessed by the subjects (the concepts supposedly being investigated by the experiments, that is) share the same metaphysical satisfaction conditions, and thus not all of the subjects possess [F].

The case against (B) is fairly straightforward. Concepts differing in their metaphysical satisfaction conditions are nonidentical, and in such cases where there are different metaphysical satisfaction conditions for concepts possessed by different agents, those agents do not all possess the same concept. So in such cases, differences in categorization behavior is of no consequence to the classical view.

For candidate explanation (C),

(P5) If (C), then either
(i) the classical view is false for [F], or
(ii) there is a classical analysis for [F], despite the indistinctness of [F]'s extension.

First, it should be observed that one might take the view that concepts do not have indistinct extensions at all. That is, one might hold that (C) lacks independent support, or that an independent argument shows (C) to be false, and thus that (C) is not the correct explanation for differences in categorization. But why might (C) look tempting? One might take the evidence for the indistinctness of a concept's extension to be indicative of our *not being able to see* (or recognize, or know) the boundaries of that concept's extension. That is, it may be that we just do not know where the boundaries of a given concept's extension lie, and so one might infer that the concept in question really does have an indistinct extension in the metaphysical sense of "indistinct." But this is an argument from ignorance, or so one might reply. Alternatively, one might give an independent argument against (C). For instance, one could argue that concepts fail to have indistinct extensions given one strategy for

meeting the sorites paradox. Suppose we resolve the sorites paradox by denying the inductive premise of that argument. This would entail that, despite appearances, concepts expressed by sorites predicates really do have precise extensions after all.[9] And so (C) would be false, and thus (C) would not be a viable explanation for differences in categorization.

However, for sake of argument assume that it is possible for a concept to have a metaphysically indistinct extension, especially since the view of vagueness described above appears to be a minority view. So, on the assumption that concepts can have metaphysically indistinct extensions, (C) would seem to be a viable option for explaining categorization differences. What then of options (i) and (ii) [in premise (P5)] as possible consequences of that explanation?

First, one might simply reject the classical view outright. But there is no need to be so hasty, even if it is granted that some concepts could have a metaphysically imprecise extension. For a concept's having a metaphysically imprecise extension is no barrier to classical analysis. Consider Fodor's (1975) example of [black cat], which seems to have the classical analysis *that x is a black cat iff x is black and x is a cat*.[10] Even if [black] and [cat] have metaphysically indistinct extensions, the analysis looks to be in terms of necessary and jointly sufficient conditions. As another example, take [good]. An acceptable classical analysis looks available with the proposition *that x is good iff x is not bad and x is not neutral*. It looks like even if [good] has an imprecise extension, it still has, or at least could have, a classical analysis. The concepts appearing in the analysans are themselves such that they might have imprecise extensions (granted here for sake of argument), but the analysis still looks to be classical. The vagueness of the analysandum simply carries over into the analysans. So even if a concept has a metaphysically imprecise extension, this is no barrier to classical analysis. So there is no reason to prefer option (i) here if one prefers explanation (C) to explain the differences in categorization.

Only option (D) remains. However, any of explanations (A)–(C) would seem to be possible, given the basic supposition of case (II), so there is no good reason to single out (D) as the *best* explanation for the differences in categorization. That is, in the absence of further reasons that (D) is the best explanation, there is no good reason to prefer (D) over the others. Let this be premise (P6).

Hence the argument from categorization is inconclusive with respect to case (II), and I conclude [from (P1)–(P6)] that

(C1) If the extension of [F] is not known (by us), and there are differences in categorization among the subjects, then the categorization differ-

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[9]For a defense of this, the so-called *epistemic view* of vagueness, see Williamson (1994).

[10]See also Laurence and Margolis (1999, p. 24).

ences are inconclusive with respect to the metaphysical satisfaction conditions for [F].[11]

What does this mean for the classical view? (C1) supports the following conclusion:

> (C2) If the extension of [F] is not known (by us), and there are differences in categorization among the subjects, then the categorization differences are inconclusive with respect to the possibility of a classical analysis for the metaphysical satisfaction conditions of [F].

That is, the argument from categorization is inconclusive with respect to the truth of the classical view of concepts. At the very least, the argument from categorization fails to suggest that the classical view is false with any degree of assurance.

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[11]Again, by "extension" I mean to speak of the extension marked out by the metaphysical satisfaction conditions of [F]. See fn. 8 above.