Alternative Analyses

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For quite some time now there has been a debate between those who insist that conceptual analysis is a matter of determining the conditions necessary and sufficient for falling under a concept, or belonging to a kind, and those who believe that if this is what conceptual analysis is, then conceptual analysis is futile. Perhaps the debate has become quieter in the last decade or so, but members of each side still seem to find it incredible that their position is not unanimously accepted by now. I would like to examine the possibility that there really is not as much disagreement here as has been supposed. To illustrate what I mean, in this paper I will consider three theories which have been proposed as alternatives to the Classical necessary and sufficient conditions account of analysis: Cluster Concepts,[1] Paradigms,[2] and Prototypes.[3]

A couple of motives for suggesting these alternatives stand out. The first, and less significant, stems from the idea that if there are necessary and sufficient conditions for falling under a concept then all concepts must have "sharp borders." That is, it has often been assumed that if a concept is analyzable into necessary and sufficient conditions, then there must be a fact of the matter for each particular as to whether or not it falls under that concept. (Eleanor Rosch makes this mistake. See below.) As William Alston, Robert Richman and others have shown, however, the Classical account involves no such implication.[4] If the basic concepts into which a more complex concept is analyzed are themselves vague, and there is nothing in the Classical account to rule this out, then that vagueness can be inherited by the analysans. So, for instance, even if we grant that there are necessary and sufficient conditions for being a bachelor, and that one of these necessary conditions is *being an adult*, we can still admit that the concept *bachelor* is vague. It is as vague as *adult* is.

A more substantial reason for discontent with the Classical view is that no property can be mentioned in a Classical analysis unless possession of that property is a necessary condition for falling under the concept being analyzed. It is obvious, on the face of it, that this really is a consequence of the Classical view. The question is what this amounts to and whether or not it is a bad thing. There is a strong intuitive pull towards including in an analysis some properties which are not had by every member. For instance, not all tigers are fierce, and not all games are fun, but it still seems as if complete analyses of *tiger* and *game* should have something to say about *being fierce* and *being fun*, respectively. The Cluster Concept view deals with this intuition by mentioning all of the intuitively plausible properties in the analysis, but only requiring that something possess a subset, or cluster of these properties in order to fall under the concept. Depending on the particular version of this view under discussion, the requirements for membership in a cluster concept can be quite complex. For instance, the requirement might not just be that the particular has enough of the properties in the concept. Maybe it has to possess at least one property from a few distinct groupings. Membership in the kind might require at least one property from a variety of different groupings: three from group A, one from group B, etc. Some medical terms, such as "schizophrenia," provide clear instances of terms which can be seen as working this way.(1) two of the following:
(2) bizarre delusions…
(3) prominent hallucinations…

[5] A patient is said to have this condition if he or she exhibits an appropriate cluster of the symptoms associated with it, though few if any patients will exhibit all of these symptoms.

The above is supposed to conflict with Classical analysis because, while Classical analysis insists that the analysis of a concept involves only those properties which a thing absolutely must have in order to belong to the relevant kind, many of the properties involved in Cluster Concept analyses are not necessary in this way. Notice, however, that this alleged conflict relies on the assumption that all the properties involved must be simple. More precisely, there is an assumption that conjunctive and disjunctive properties do not count. If these properties do count, then there is no substantive difference between Cluster Concept analyses and those of the Classical theory. When one says that each particular must have one or more properties from various subsets, the other says that each particular must have the corresponding disjunctive properties.[6] In other words, while the Cluster Concept theory might say that *x* is a *T* just in case *x* has at least three of the five properties A, B, C, D, E and at least two of the four properties F, G, H, I, Classical analysis can say that *x* must possess the two following properties: [(A & B & C) v (A & B & D) v (A & B & E) v (B & C & D) v (B & C & E) v (C & D & E)], and [(F & G) v (F & H) v (F & I) v (G & H) v (G & I) v (H & I)]. Or, even more radically, it can conjoin these two complex properties and hold that there is a single complex property which is necessary and sufficient for being a T.

A parallel comparison can be made between tradition and the Paradigm theory. Again, as far as I can tell the main motivation for proposing this alternative is to allow into analyses properties which are not necessary for membership in the relevant kind. In this case this is accomplished by requiring that every kind include paradigm members, and holding that other members belong to the kind, or fall under the concept, in virtue of their resemblance to these paradigms. While paradigms must possess all of the properties involved in an analyses, non-paradigm members need not.

Although conjunctive and disjunctive properties will not save the Classical theory here, relational properties will. From a Classical perspective the claim of the Paradigm theory is that a certain type of relational property is necessary for membership in certain kinds. Briefly, the required relational properties are those of resembling the paradigms in sufficient ways. More specifically, assume that a paradigm T must possess properties A, B, C, D, and thus that the necessary and sufficient condition for being a paradigm T is possession of the property A & B & C & D. Let us call this property 'E'. Let us call the property of resembling something which has E 'R'. The Classical account can now say that: *x* is a T iff *x* possesses the property (E v R). Or, if we allow that things resemble themselves, all that is required is R.

Of course, one might worry that some account of R is still owed. But one might similarly worry that the Paradigm theory owes an explanation of what counts as sufficient resemblance to a paradigm. The person who advocates the Paradigm theory can make one of two replies (assuming a "Classical" analysis will not be offered): one can either insist that this is a basic relation, in need of no analysis, or can offer an analysis in the spirit of the Paradigm theory itself.[7] It should be easy to see that these options are available to the Classical account as well. Even for the Classical account, some relations are basic. And any Paradigm analysis of resemblance to a paradigm can be handled in the manner described above.

One of the most sophisticated proposed alternatives to the Classical account is the Prototype theory. This theory has been developed primarily in psychology, rather than philosophy, most notably by Eleanor Rosch. Unfortunately, it is clear that a primary motivation behind Rosch's development of this theory is her belief that, "…when describing categories analytically, most traditions of thought have treated category membership as a digital, all-or-nothing phenomenon."[8] As noted above, Classical analysis is by no means committed to a "digital" account of category membership. If any of the properties necessary for membership are vague, the category will have borderline members. Nevertheless, the Prototype theory is currently one of the most viable alternatives to the Classical necessary and sufficient conditions account, and so warrants further examination.

The Prototype theory is best thought of as falling under the heading of Cluster Concepts. A Prototype, like a Cluster, and unlike a Paradigm, is an abstraction.[9] A prototype is a cluster or collection of properties relevant to membership in a kind. Prototypical members possess a relatively high percentage of the properties or features in the prototype, thus particular members can be more or less prototypical. What the Prototype theory adds to the more general Cluster Concept view is a couple of specific ideas about the ways in which possession of the properties in the relevant prototype (or cluster) qualifies something for membership in a kind. Basically, there are two relevant factors: (a) How many of the properties mentioned in the prototype does the object possess? (b) How unlikely is it that a particular which falls under the extension of another expression in the same contrast set would possess this property? (A contrast set is a set of expressions which fall under one superordinate or determinable term and which cannot simultaneously be true of the same thing. For instance, "cat," "dog," and "cow" belong to the same contrast set because they all fall under the term "mammal," and no more than one of these terms can apply to a give particular.)

In "Concepts, Prototypes and Information," Richard Grandy offers the following formal characterization of when, according to the Prototype theory, *x* falls under a specific concept (or is to be included in a specific kind or category):

> *x* is in Ci *iff x* satisfies the superordinate term and *x* is more similar to the prototype Pi of Ci than to any prototype Pk of any other category Ck in the same contrast set.[10] (my emphasis)

The main thing to note about this definition is that it provides *necessary and sufficient conditions* for membership in Ci. Assuming this is a more or less accurate account, the Prototype theory is clearly another necessary and sufficient conditions account and, in this sense, falls within the Classical tradition.[11]

Interestingly, Rosch not only offers the Prototype theory as an alternative to the Classical account. She also believes that it can explain why the Classical account, though mistaken, has been so seductive:

> If the more prototypical members of a category are those which have most attributes common to other members of the category it is probable that they are most likely to have attributes in common with each other…. Thus, if subjects think of the best examples of the category when hearing the category name…, the illusion of common elements is likely to arise and persist — an illusion which may be what makes definition of categories in terms of criterial attributes appear so reasonable.[12]

Unfortunately, I doubt that this accurately captures why many philosophers feel that there *must* be necessary and sufficient conditions. The primary motivation for myself and, I believe, for others, is bewilderment about how else we can explain the more or less unanimous agreement about whether or not new instances fall under old concepts. This bewilderment is by no means neatly satisfied by a Prototype account. Or, to put the point more precisely, this bewilderment is only satisfied to the degree that we see the Prototype theory as subsumed under the Classical.

Once we begin to see the pattern here, it should not surprise us. Theories which are supposed to provide alternatives to necessary and sufficient conditions are generally going to be suggesting what they take to be *other* conditions for falling under a concept. If they are saying that a particular must conform to these conditions in order to fall under the concept, they are giving necessary conditions. If they assert that all particulars conforming to these conditions fall under the concept, they are giving sufficient conditions. It should not be surprising when a theory which makes claims such as these turns out to be a theory which, in the end, gives necessary and sufficient conditions.

One possible reply to this is to deny that Classical analyses do/should make use of the sorts of properties mentioned above: relational, conjunctive, and disjunctive.[13] The claim that they *do not* make use of such properties is simply false. Roderick Chisholm is a paradigm example of a philosopher who uses the Classical analytic method. As the following illustrates, he has no qualms about providing extremely complex analyses:

> S is justified in believing that p = Df (i). It is evident for S that p; and (ii) if it is defectively evident for S that p, then the proposition that p is entailed by a conjunction of propositions each of which is either (a) evident but not defectively evident for S or (b) a proposition implying with respect to one of the other conjuncts that it is evident for S.[14]

What of the claim that Classical analyses *should* not make use of complex properties? To begin with, one who makes such a claim owes us a method for determining which properties are properly simple. The project of analysis itself assumes a recognition that our terms often do not indicate simple properties.

More importantly, there is something rather awkward about insisting that adherents of the Classical account *should* avoid complex disjunctive analyses, while at the same time criticizing that account for problems which are easily solved if it makes use of them.

Considerations such as the ones just given lead me to suggest that the differences between those who advocate necessary and sufficient condition analyses, and those who criticize them have been greatly exaggerated. This is not to say that there is no point in taking seriously those theories which have been proposed as alternatives. It is only to say that, in general, their value is to be found in the sorts of conditions they suggest, not in the fact that they do this without providing necessary and sufficient conditions. Nor is this to say that there could be no theory of analysis which did not attempt to provide necessary and sufficient conditions. It is only to say that we should have a clearer awareness of how radically different such a theory would be.

Notes

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[1]Putnam, H. "The Analytic and the Synthetic," in Mind and Language: Philosophical Papers, vol. 2 (New York: Cambridge University Press, 1975), 33–69. A similar theory about proper names is proposed in Searle, J. "Proper Names," Mind 67 (1958): 166–173.
[2]Simon, M. A. "When is a Resemblance a Family Resemblance?" *Mind* 78 (1969): 408–416.
[3]Rosch, E. and Mervis, C. B. "Family Resemblances: Studies in the Internal Structure of Categories," *Cognitive Psychology* 7 (1975): 573–605. There is some question as to whether Prototype theories really address epistemological concerns about our knowledge of concepts, rather than metaphysical questions about what concepts are. For more on this see Rey, G. "Concepts and Stereotypes," *Cognition* 15 (1983): 237–262.
[4]See Richman, R. J. "Something Common," *Journal of Philosophy* 59 (1962): 821–830; and Alston, W. P. *Philosophy of Language*. (Englewood Cliffs: Prentice Hall, 1964), chapter 5.
[5]American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders, 3rd ed*. (Washington, DC: American Psychiatric Association, 1987), 194, gives the following as part of its diagnostic criteria for schizophrenia. Whatever meets the diagnostic criteria is schizophrenia. A. Presence of characteristic psychotic symptoms in the active phase: either (1), (2), or (3) for at least one week…(1) two of the following:(a) delusions(b) prominent hallucinations(c) incoherence or marked loosening of associations(d) catatonic behavior(e) flat or grossly inappropriate affect(2) bizarre delusions…(3) prominent hallucinations…
[6]Others have made similar observations. See Loux, M. J. *Substance and Attribute*. (Boston: Reidel, 1978), 19–21; and Grandy, R. E. "Concepts, Prototypes and Information," in *Information, Semantics and Epistemology*, E. Villanueva, ed. (Cambridge: Basil Blackwell, 1990), 202.

[7]I am ignoring worries about the plausibility of either attempt, such as that the first is unsatisfying and the second looks like it is bound to be viciously circular.
[8]Rosch and Mervis, "Family Resemblances," 573.
[9]"Prototype" is often used ambiguously to refer to either the abstract prototype or to a prototypical member. In general this ambiguity is harmless, but I will attempt to avoid it.
[10]Grandy, "Concepts, Prototypes and Information," 202.
[11]In a recent article Ramsey, W. "Prototypes and Conceptual Analysis," *Topoi* 11 (1992): 59–70, attempts to show that empirical research argues against the search for necessary and sufficient conditions, and for something more like prototypes. While I believe that Ramsey's criticisms of Classical analysis rest on an overly narrow understanding of it, I agree with his conclusion that in the end correct analyses will often be more complex than we had expected. Our disagreement is over whether or not those complex analyses can legitimately be thought of as providing necessary and sufficient conditions.
[12]Rosch and Mervis, "Family Resemblances," 583.
[13]Campbell, K. "Family Resemblance Predicates," *American Philosophical Quarterly 2* (1965): 238–244, makes this kind of move. Although it is not completely clear, it appears that Campbell believes that this is how traditional analysis should be carried out, not how it has been.
[14]Taken, almost at random, from Chisholm, R. *The Foundations of Knowing*. (Minneapolis: University of Minnesota Press, 1982), 48.