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Commentary on: James B. Freeman's "What types of arguments are there?"

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1. INTRODUCTION

James Freeman proposes to classify arguments on two dimensions. An argument is "defeasible" if its warrant admits of exceptions, "conclusive" otherwise. It is "*a posteriori*" if its warrant has to be backed by sense experience, "*a priori*" otherwise. Freeman argues that all four theoretically possible combinations are actualized. In particular, there are defeasible *a priori* arguments; the generalizations associated with their warrants are synthetic *a priori* judgments of the sort recognized by Kant. And there are conclusive *a posteriori* arguments, whose warrants are universal but based on sense experience.

The point of Freeman's classification is to provide a framework for assessing what he calls, following Govier, the "ground adequacy" of an argument: whether its supporting reasons, if they are acceptable, are jointly sufficient to justify acceptance of its conclusion. Exceptions to an argument's warrant undermine ground adequacy if the argument is conclusive but not if it is defeasible. Analogously, attention to the extent and variety of observations supporting an argument's warrant is appropriate for assessing ground adequacy if the argument is *a posteriori*, but not if it is *a priori*. The classification scheme thus implies and reflects a pluralistic approach to assessing ground adequacy.

2. TYPES OF WHAT?

There is much to agree with, and to reinforce, in Freeman's proposal. But there is one major respect in which the proposal is misdirected. Freeman is really classifying ways in which reasons can provide adequate grounds for a claim—if you like, kinds of ground adequacy. His taxonomy does not cover arguments in which the reasons are inadequate. Further, arguments generally do not come with their warrant pre-identified. The warrant must usually be elicited, with a question like "How does that follow?" And in general more than one answer to that question is defensible. Hence, we cannot classify arguments by their warrants. Further, arguments generally do not carry on their face an indication of whether their reasons support their claim conclusively or defeasibly.

One might be tempted, however, to use Freeman's classification scheme, or any taxonomy of ways a conclusion can follow from given reasons, to classify

arguments indirectly, according to which standard of inference appraisal is appropriate to the argument. This strategy lies behind standard textbook classifications of arguments as either deductive or inductive, depending on whether the author intends (or claims, or believes) the conclusion to follow necessarily or merely with probability. Since arguers' intentions of this sort are generally absent or unavailable (as are the corresponding claims and beliefs), such taxonomies are wrong-headed. Freeman's proposed taxonomy laudably makes no appeal to the intentions (or claims or beliefs) of arguers as to whether the reasons support their claim conclusively or defeasibly, or as to whether the warrant is backed *a priori* or *a posteriori*.

An alternative way of determining the appropriate standard of appraisal for an argument would be to identify a scheme that it exemplifies that has an appropriate standard of appraisal. *Modus ponens* and *modus tollens* arguments, disjunctive and hypothetical syllogisms, and existential generalizations from instances, for example, are clearly candidates for appraisal by the standard of formal deductive validity, a species of conclusiveness. Arguments to the best explanation are to be appraised by their distinctive criteria, whose complete satisfaction still leaves them defeasible.

But this alternative way of classifying arguments by their appropriate standard of appraisal will not work, for reasons that Freeman admirably articulates: some commonly recognized forms of argument cut across the distinctions between defeasible and conclusive warrants, and between *a priori* and *a posteriori* backing. Freeman mentions conductive arguments, whose warrants are in some cases *a priori* but in other cases *a posteriori*. I would add that in some cases the warrants of such arguments are conclusive rather than defeasible, as when one argues from satisfaction of the relevant criteria to a classification of a bird as a reptile. Similarly, he argues that some arguments by analogy are defeasible *a priori* and others defeasible *a posteriori*. Still others, I would add, are conclusive *a posteriori*, namely those whose conclusion follows in virtue of an exceptionless but empirically justified determination relation, such as the fact that the first letter of a Canadian postal code determines the province in which an address is located. There might even be conclusive *a priori* arguments by analogy.

The fact that some argument schemes cut across the conclusive-defeasible distinction means that the project of using that distinction or variants of it as the top-level distinction in a taxonomy of argument schemes will not produce a Linnean tree-like hierarchy.

If one interprets Freeman's taxonomy as a classification of types of ground adequacy rather than of types of argument, then the lessons for argument appraisal are somewhat different than the ones he draws. Rather than identifying an argument's warrant as conclusive or defeasible and then adopting the appropriate attitude towards recognition of an exception, one should ask whether the argument has a covering generalization that can be backed up; let us call such a backable covering generalization a 'valid warrant'. The first question to ask in such an investigation is whether the generalization is *a priori*, i.e. capable of being evaluated by reflection, or *a posteriori*, i.e. in need of empirical support for its justification. If a covering generalization proves after appropriate reflection or empirical

investigation to be a valid warrant, the next question to ask is whether some exceptional circumstance undermines or overrides its authority in the case under discussion. The status of a possible warrant as *a priori* or *a posteriori* thus seems to be prior in the process of assessing ground adequacy to its status as conclusive or defeasible. So we might take the main distinction among valid warrants to be that between *a priori* warrants that are self-evident and *a posteriori* warrants that are empirically supported. We would then distinguish within each class between conclusive or exceptionless warrants and defeasible warrants that have exceptions.

3. WHAT TYPES?

Construed as a classification of valid warrants, Freeman's taxonomy clearly meets the desiderata of dividing a genus into mutually exclusive and jointly exhaustive classes. A valid warrant either has universal authority or is subject to exceptions, but not both. And a valid warrant either can be backed *a priori* or rests necessarily on empirical support, but not both.

In my view Freeman has made his case that all four combinations made possible by his bi-dimensional division are actualized. There are indeed defeasible *a priori* valid warrants, i.e. warrants that are self-evident rather than backed by experience but that have exceptions. Freeman correctly includes in this category general evaluative propositions (moral, intrinsic, aretaic) that license drawing evaluative conclusions *ceteris paribus* from factual premises, as well as warrants for *a priori* analogies and for arguments to the best explanation.

There are also conclusive *a posteriori* valid warrants, of which Freeman gives perfectly correct examples: universal laws of nature and taxonomic classifications. A conclusion drawn in accordance with a universal law of nature obviously follows conclusively from the reasons given. And laws of nature require empirical support for their justification, whether by Cohen's canonical tests or in some other way. Similarly, a well-constructed system of classification licenses a conclusive inference from belonging to a species to belonging to its genus. And such systems, if they classify observed entities rather than *a priori* constructions, require empirical support, both for identification of salient principles of division and for construction of the taxonomy once the salient principles are identified. Freeman's proposed taxonomy is a case in point.

Two minor caveats. First, it would be better to describe the source of support required for *a posteriori* warrants as observation rather than sense experience, since empirical support is frequently provided, especially in scientific research, by instruments rather than human senses (Shapere, 1982). Second, the qualification of conclusive *a posteriori* warrants by the adjective '*prima facie*', to indicate that such warrants may turn out in the light of further experience to have exceptions, is an unwarranted and confusing introduction of an epistemic factor into an ontically based taxonomy. In fact, all warrants deserve the same qualification: defeasible *a posteriori* warrants are just as subject to revision as conclusive ones in the light of new experience, and even *a priori* warrants are subject to revision in the light of further reflection.

We inherit from Aristotle's *Topics* (I.12) a division of all arguments with adequately supported conclusions into deductions and inductions. Freeman invites us instead to think of the two main types as conclusive arguments and defeasible arguments, each having *a priori* and *a posteriori* sub-types. Should we accept the invitation?

One possible response is to accept the main distinction but use the old labels, calling any argument with a valid conclusive warrant a deduction and any argument with a valid defeasible warrant an induction. This response is likely to satisfy neither traditionalists nor reformers. Traditionalists will object to the reformulation of well-established concepts, reformers to the misleading character of the old labels. Compromisers might favour keeping the old labels on the ground that they are well established in ordinary usage. In fact, however, the old labels are not widely used. In a Google search of phrases of the form 'x arguments', where 'x' is an adjective, 'deductive arguments' and inductive arguments' ranked 32 and 33 out of 86, with frequencies one-tenth or less of the six most common descriptors of arguments. (Details are available on request from the present author.) And instructors of critical thinking courses regularly find that students don't come to their classes already knowing the distinction between deduction and induction; it has to be taught. We might as well teach the right distinction with new labels whose meaning is not at risk of being distorted by the tradition.

Another possible response is to accept the main distinction but question the need for the subsequent sub-division. We can divide valid warrants, whether conclusive or defeasible, into those that need empirical support and those that don't. But what is the point of doing so? Here Freeman has a good answer. When we ask if the premises of an argument adequately support its conclusion, we are asking if some valid warrant licenses the inference. To ask if a covering generalization is a valid warrant requires looking to see if it is adequately backed. And, since we look for evidence if it needs empirical support, but reflect if it does not, a first step is to figure out whether it needs such support or not, i.e. whether it is *a posteriori* or *a priori*.

Another possible response is to propose a further division of defeasible valid warrants. Toulmin, whose concept of warrant Freeman appropriates, in fact distinguishes four types of modal qualifiers associated with warrants: necessarily, probably, presumably, possibly (1958). Defeasible warrants on this account come in three types: probabilistic, presumptive and possibilistic. On Toulmin's account, some warrants license a transition to a guarded commitment to a claim, others to a presumption in favour of the claim that may be overridden by exception-making circumstances, still others to the conclusion that a hypothesis is worth further investigation. Possibilistic warrants in particular deserve attention: much preliminary argumentation in scientific research, detective work and other fields of investigation involves determining whether something *may* be the cause of some phenomenon or event. As to the difference between probabilistic and presumptive warrants, there seems intuitively to be a clear difference in kind between using a statistical syllogism to argue that Tweety, being a bird, probably can fly and using the Criminal Code of Canada to argue that a person possessing more than an ounce of cannabis presumably possessed it for the purpose of trafficking. The difference

however is not a matter of whether the classical probability calculus applies; it applies to neither of these arguments.

On the whole, Freeman's classification stands up to these possible challenges.

4. SCHEMES: INDUCTION, PROMISES, STATISTICS

In his discussion of more specific types of argument, Freeman makes some claims that deserve examination: about induction, about the moral obligation to keep promises, and about statistical inference.

He identifies inductive arguments with defeasible *a posteriori* arguments, i.e. non-conclusive arguments whose warrant must be backed by empirical evidence, ultimately rooted in sense experience. One may question this identification. The concept of induction was introduced into the western logical tradition by Aristotle, as argument from particulars to a universal (*Topics* I.12.105a12). Contemporary logic textbooks follow Aristotle in regarding generalization from instances as inductive reasoning. Thus, if any form of argument is inductive, argument from particulars to a universal is inductive. But valid inductive generalization may be conclusive. For example, determination in an experiment of the boiling point at standard atmospheric pressure of a single pure sample of a liquid chemical compound is conclusive evidence that all samples of that compound boil at that temperature at standard atmospheric pressure. Further, like argument by analogy, valid inductive generalization may be *a priori*, as in the case of Socrates' argument in Plato's *Euthyphro* from what is true of carrying, leading and seeing to the general conclusion that

if anything is being changed or is being affected in any way, it is not being changed because it is something changed, but rather it is something changed because it is being changed; nor is it being affected because it is something affected, but it is something affected because it is being affected. (*Euthyphro* 10c, Grube's translation)

Thus induction straddles Freeman's categories.

Freeman endorses Ross's claim that it is "self-evident ... that to make a promise ... is to create a moral claim on us in someone else". However, he rejects the claim that this principle is analytic, i.e. true in virtue of what it means to make a promise, on the ground that the principle has exceptions. This position makes mysterious what sort of *a priori* intuition is involved in apprehending the truth of the principle. Further, cases where it is not morally wrong, all things considered, to break a promise nevertheless involve, as input to deciding what to do, the moral relevance of having made the promise, which might be explained by the very meaning of what it is to make a promise—namely, to commit oneself to do what one promises. Nevertheless, Freeman's position seems correct. A more telling objection to the analyticity claim than the possibility of exception-making overriding circumstances is that there are cases where it is not even morally relevant that one has made a promise—namely, where the promise is extracted by coercion, inducement or threat. As to the source of our *a priori* intuition of the moral relevance of having made a voluntary promise, it seems to be not merely reflection

on what it means to make a promise, but attention to the whole practice of promise-making and promise-keeping, including the fact that a person to whom a promise is made will generally govern their subsequent actions by the assumption that it will be kept. It is the practice of promising, and the possible adverse effect on others of breaking a promise, that makes promises morally relevant, not the meaning of the word 'promise'.

Freeman makes a common mistake of treating statistical inferences used to calculate confidence intervals as inferences from the frequency of some property in a sample to its frequency in the universe from which the sample was drawn. In fact, it is an inference in the opposite direction, from the frequency in the universe to the frequency in a sample. To take an example where the arithmetic is simple enough for the reader to follow the calculation, if the frequency of a property in a universe is 0.5 and a sample of four is drawn at random from the universe, then the probability that the sample frequency will be between 0.25 and 0.75 inclusive is $7/8$ (87.5%). This result would be expressed in the typical way of reporting confidence intervals by saying that, 7 times out of 8, the frequency in the sample will be within 25 percentage points of the frequency in the universe. The result can be arrived at by noting that there is a chance of 0.5^4 ($1/16$) that all four individuals will have the property and a chance of 0.5^4 ($1/16$) that all four will lack it; in the remaining $7/8$ of the cases, either one or two or three will have the property. The reasoning here is purely mathematical, i.e. *a priori*, and the inference is conclusive. The figure deduced depends only on the frequency of the property in the universe and the size of the sample, assuming (as is never actually the case) that the sample is drawn at random from the universe.

5. SUMMARY

Freeman's classification should be construed as a classification of types of ground adequacy rather than of types of argument. So construed, it does indeed cut nature at the joints, distinguishing warrants as either conclusive or defeasible and as backed either *a priori* or *a posteriori*. In considering a covering generalization of an argument, to see whether it validly licenses drawing the conclusion, one should consider whether it is properly backed, by self-evidence if it is *a priori* and by empirical evidence if it is *a posteriori*. And, if it has exceptions, one should attend to whether the case at hand is one of them.

Freeman is correct that all four combinations are actualized, and in particular that there are defeasible *a priori* warrants and conclusive *a posteriori* warrants. He is also correct in holding that some common argument schemes, such as conductive arguments and arguments by analogy, cut across his distinctions; we should add inductive generalizations to this list.

There are strong arguments against redefining the deductive-inductive distinction so as to correspond to the conclusive-defeasible distinction. We should throw out the old labels and use the new ones. We may need to recognize a distinction among defeasible warrants between those that make a conclusion probable, those that establish a presumption, and those that indicate that a hypothesis is a live possibility worth investigating.

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