How To Do Without Inductive Logic

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ABSTRACT. This paper defends deductivism, the view that the only valid arguments are deductively valid arguments, and that deductive logic is the only logic that we have or need. Inductive arguments are construed as valid deductive enthymemes. Some of these, with general epistemic principles as missing premises, may be sound as well as valid — thus solving the philosophical problem of induction. But that problem is not to be trivialised by regarding the epistemic principles as analytic truths, as Parfitter and Bigelow have recently suggested.

This paper defends Deductivism, the view that the only valid arguments are deductively valid arguments, and that deductive logic is the only logic that we have or need. Deductivism is a heretical view. The orthodox view among philosophers and logicians is that as well as deductive arguments, there are also non-deductive or inductive or ampliative arguments. (A terminological point: in what follows, in order to save space, I shall use the term ‘inductive’ as short for ‘non-deductive or inductive or ampliative’.) Orthodoxy also has it that just as it is the task of the deductive logician to sort out which deductive arguments are valid and which are not, so also it is the task of the inductive logician to sort out which inductive arguments are valid and which are not. Deductivists think this is all wrong. There is no such thing as inductive logic. There are no arguments which, though deductively invalid, are inductively valid. If an argument is deductively invalid, then it is just invalid — and that is all there is to it.

DEDUCTIVE VALIDITY VERSUS INDUCTIVE COGENCY

The philosophically orthodox view is that just as it is the task of the deductive logician to sort out which deductive arguments are valid and which are not, so also it is the task of the inductive logician to sort out which inductive arguments are valid and which are not.

Here a terminological point intrudes. Orthodoxy does not speak, as I have just spoken, of inductive validity. Orthodoxy speaks instead of inductive cogency. A deductively invalid argument which is nevertheless a good or acceptable inductive argument is said to be cogent. Armed with the notion of cogency, orthodoxy can agree that the only valid arguments are deductively valid arguments. Orthodoxy goes on to insist, however, that as well as valid arguments there are also cogent arguments. Deductivists like me think that there is no such thing as (inductive) cogency.

Cogency is very different from validity, as is admitted on all sides. For one thing, cogency is supposed to come in degrees, while validity does not.
An argument which is pretty cogent as it stands can be made more cogent by adding more information to its premises. To use a famous example, if I have observed ten emeralds and they have all been green, then I can pretty cogently conclude that the next emerald I observe will be green. But my inference will be more cogent if I have observed not ten green emeralds but a hundred of them. Validity does not come in degrees like this. If an argument is valid, it cannot be made more valid by adding more information to its premises. Validity is an all or nothing business.

The second difference between cogency and validity is more interesting. Adding information to the premises of a cogent argument can make it more cogent, as we have seen. It can also make it less cogent or not cogent at all! The argument about emeralds that I just mentioned will be made less cogent, or not cogent at all, if I add the information that all the green emeralds I have observed were in the collections of a friend of mine who has a fetish about collecting green things – green emeralds, green bottles, green postage stamps, and so forth. Validity is quite different. You cannot turn a valid argument into an invalid argument, nor of course into a less valid argument, by adding information to its premises.

Some deductive logicians would dispute what I just said. They would say that in extreme cases you can turn a valid argument into an invalid argument by adding information to its premises. Suppose you have a valid argument from premise P to conclusion C. And suppose you add ‘It is not the case that P’ to the premise. You now have contradictory premises, P and ‘It is not the case that P’. Most deductive logicians would insist that the argument is still a valid one, and that any conclusion whatever follows validly from contradictory premises. Deductive logicians who say this do not, of course, dispute that the argument with contradictory premises is unsound, nor do they dispute the fact that it is not an argument which anyone with a modicum of logical sense would actually advance. More generally, adding information to the premises of a valid argument can render it unsound, or can render it unviable in that nobody of sense would advance it. But it cannot render a valid argument invalid.

However, relevance logicians dispute this. Relevance logic is a big topic. It represents a family quarrel among deductive logicians which I do not want to get into. Let me say only this. What relevance logicians advocate, when they have done playing games with which rules to allow and which not, and when, is essentially a stronger notion of deductive validity than the customary notion. Let us call it Validity with a capital ‘V’. Relevance logic says that an argument is Valid (with a capital ‘V’) if it is valid (with a small ‘v’) and a further condition (the ‘relevance’ of the conclusion to the premises) is met. Adding information to the premises of an argument which is Valid (with a capital ‘V’) can render it Invalid (with a capital ‘I’) by rendering the premises irrelevant to the conclusion. But relevance logicians will admit (or should admit) that adding information to the premises of an argument which is valid (with a small ‘v’) cannot render that argument invalid (with a small ‘i’). Validity (with a capital ‘V’) is