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ON THE POWER AND GLORY OF DEDUCTIVISM

This short comment is meant as a couple of glosses on the margin of Dale Jacquette's extensive and thought-provoking contribution (this issue) "Deductivism in Formal and Informal Logic". My title alludes to Graham Greene's masterpiece "The Power and the Glory" which tells about moral power as displayed by this novel characters in spite of human weaknesses. Here I am to ask some questions regarding the logical power and possible weaknesses of *deductivism* – defined by Professor Jacquette as the view that *any good reasoning conforms to a rule of deductively valid inference*.

I do not address relations between formal and informal logic as treated by deductivism, though this issue is extensively discussed in the paper, since I do not find any questionable items in the Author's exposition. What I am to ask about, it is the very concept of deductive validity. There are among logicians at least two plausible interpretations of this attribute, one much liberal (L), the other much restrictive (R).

- (L) An inference is deductively valid iff it complies with a rule that grants the truth of conclusion, provided the premisses are true.**
- (R) An inference is deductively valid iff it complies with rules of the classical first-order logic.**

Between these extremes there is a lot of other conceptions: R can be extended to involve the intuitionistic first-order logic, the second-order classical logic, modal logics of any varieties, a theory of probability, and so on. Two possible additions to R are of special interest, one regarding the *mathematical induction rule*, the other regarding *truth-preserving rules generated by some conditionals*.

As to the former, it clearly falls under L but not under R. Does it constitute a fatal counterexample to deductivism? Obviously NOT, if the term

“deductively valid” in the thesis of deductivism is to be conceived according to L; and obviously SO, if according to R. That the rule of mathematical induction does not belong to logic was firmly held by such a great mathematician as Henri Poincaré, to the effect that the principle in question is *necessary to the mathematician, and clearly irreducible to logic* (see his *Science and Method*, Dover 1952, p. 149).

As to the latter case, take for example any set-theoretical axiom having the conditional form. E.g. the sum-set axiom for two-element set families can be easily transformed into the following rule of inference:

$\exists_X(X \text{ is a set}) \wedge \exists_Y(Y \text{ is a set}), \text{ hence } \exists_S \forall_x(x \in S \Leftrightarrow x \in X \vee x \in Y).$

We are free either to employ the sum-set principle as an inference rule, or to traditionally accept it as an axiom and obtain the above conclusion from it with the help of ponendo ponens. If one prefers the rule strategy, and, moreover, is ready to regard the set-theoretical epsilon as a logical constant, then there increases, correspondingly, the scope of logically valid inferences.

To make the issue more general, let us notice, that not only the epsilon but also some other terms happen to be problematic as far as their status of logical constants is concerned. It is surely merited by truth-functional connectives, as well as quantifiers conceived as generalized conjunctions or generalized disjunctions. However, as for the identity sign, its belonging to logical constants is sometimes felt as being a bit conventional, and the more modal operators, etc.

Are such hesitations relevant to Jacquette’s main problem of deductivism as endangered with the risk of appearing deductively valid rhetorical fallacies, and so the appearing of counterexamples to its point? To try an answer, let me transform the claim of deductivism into a hypothesis being a bit more (to my mind) operationalized, to wit: *The theory of logical validity is a reliable tool to detect any rhetorical fallacy.*

The Author convincingly shows, step by step logically analyzing fallacies most commonly occurring in the literature, that the hypothesis gets fully confirmed within the scope of the cases considered. One may have impression that such a message is obvious a priori and, therefore, not demanding such a thorough work. But the opinion as to obviousness may depend on environmental factors (meaning a scholarly environment), thus remaining to some extent subjective. Anyway, the results obtained help to choose between the options L and R as sketched above. The evidence we have got owing to the Author’s research does reveal that logical validity in the restricted sense is sufficient to inquire into rhetorical fallacies to the effect that they notoriously lack logical validity. Hence there is enough power and glory in

the first-order classical logic. If it proves too weak for some new rhetorical fallacies which would demand new means of logical analysis, then one can extend the first-order logic (towards the scope of L) to suitably enrich its repertoire of devices.

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