ANTIREALISM, STRICT FINITISM
AND STRUCTURAL RULES
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   As far as logic is concerned, the conclusion of Michael
Dummett's manifestability argument is that intuitionistic logic, as
first developed by Heyting, satisfies the semantic requirements of
antirealism. The argument is that since we cannot manifest a grasp
of possibly justification-transcendent truth-conditions, we must
countenance conditions which are such that, at least in principle, we
are able to recognize that they are satisfied whenever they are.
Intuitionistic logic satisfies the semantic requirement that we should
either eschew the notion of truth altogether and replace it by
provability in principle, or constrain it by provability in principle
(Dummett [1973] 1978). Some philosophers have argued that the
traditional antirealist desideratum of decidability in principle is too
weak. Semantic antirealism properly construed must be committed
to effective decidability. As such, it either leads to strict finitism
(Wright [1982] 1993) or to a much stronger kind of logical
revisionism than the one considered by intuitionists: substructural
logics, and in particular linear logics, rather than intuitionistic
logic,
satisfy the semantic requirements of strict antirealism (Dubucs and
Marion 2004).
   I shall develop two different kinds of replies. The first is
concerned with the notion of meaning per se and looks to strict
finitism directly. The second is concerned with the justification of
structural and logical rules in a natural deduction system à la
Gentzen. It will deal in particular with the criticism of the structural
rules of Weakening and Contraction.
   The first kind of reply, which Dummett has partially taken into
consideration and which I shall develop at some lengh, is that if we
jettison the effectively vs. in principle distinction, as applied to
manifestability-type arguments, we end up with an unsatisfactory
explanation of how the meaning of statements covering the
practically unsurveyable or pro tempora undecided cases is fixed..
Decidability in principle is just what we need with respect to
manifestation of grasp of meaning. In this perspective, antirealism
shouldn't be strict and manifestability-type arguments need not be
applied as far as the strict finitist would want to.
   I shall then look at two radical antirealist principles disqualifying
structural rules: Token Preservation and Preservation of Local
Feasibility. Against Bonnay and Cozic's criticisms of Dubucs and
Marion (Bonnay and Cozic 2006), I shall argue that: (i) some
conceptual support may be provided for Token Preservation, which
doesn't rely on a causal misreading of the turnstile, and that (ii) the
appeal to non feasible ways of doing feasible things is not a good
way to argue for Preservation of Local Feasibility.
   I shall then assess the merits and limits of radical antirealism and
the logic of feasible proofs with respect to the original Dummettian
argument in favour of semantic antirealism (provided it has indeed
revisionist implications for logic), whether the radical antirealist
merely stipulates what human feasibility amounts to, or dispenses
with structural rules by arguing in favour of a curb on the epistemic
idealizations they unwarrantedly embed.
   It will be noted here that there is a great difference, conceptually
speaking, between the rejection of classical logic via the curbing of

the epistemic idealization embedded in structural rules, and the rejection of classical logic via the criticism of introduction and elimination rules which fix the meaning of the classical constants. The reasons why we should want to narrow the scope of idealization are quite different in each case. E.g., the rejection of Weakening and Contraction by way of Token Preservation and Preservation of Local Feasibility doesn't have to rely on arguments in favour of the surveryability of the implementation of decision procedures.

One telling case of study in this respect is that of the relation between structural rules and logical rules in the intuitionistic context. The kind of logical revisionism envisaged by intuitionists from Heyting on is in many respects stronger than the one envisaged by advocates of linear logic, should they ground their arguments on an endorsement of strict antirealism. A clearer philosophical conception is needed of how the rules for logical connectives in the intuitionistic calculus depend on the structural rules which the radical antirealist wishes to reject.

MINIMAL BIBLIOGRAPHY

Bonnay (Denis) and Cozic (Mikaël), 2006, "Which Logic for the Radical Antirealist?", Logic, Epistemology and the Unity of Science, Springer Verlag, Berlin & Heidelberg [online: <http://mikael.cozic.free.fr/radical.pdf>]

Dubucs (Jacques) and Marion (Mathieu), 2004, "Strict Antirealism and Substructural Logics", Philosophical Dimensions of Logic and Science, J. Cachro, G. Kurezewski and A. Rojsczak, eds., Kluwer Academic Publishers, Dordrecht, pp. 235-249.

Dummett (Michael), [1973] 1978, "The Philosophical Basis of Intuitionistic Logic", Truth and Other Enigmas, Harvard UP, 1st ed, Cambridge, Mass., pp. 215-247.

Wright (Cripsin), [1982] 1993, "Strict Finitism", Realism, Meaning and Truth, Basil Blackwell, Oxford, 2nd ed., pp. 107-175.