

Prior, Berkeley, and the Barcan Formula

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In his 1955 paper “Berkeley in Logical Form”, A. N. Prior argues that in his so-called master argument for idealism, Berkeley “has confused two possible orders of his operators” (1955b, 38). In particular, he argues that Berkeley was correct to point out in his master argument that

(Berk₁) There is something which person s thinks truly is unthought-of
[($\exists x$)($T(t)(s, x$ is unthought-of)]

cannot be true, since for any entity x , if person s thinks that x is unthought-of, then x will be thought of, in which case s will be thinking falsely (and hence, not truly) that x is unthought-of. In fact, for Prior, the negation of (Berk₁) “expresses a logical law” (ibid.). However, according to Prior, Berkeley wrongly infers that since (Berk₁) cannot be true, then neither can

(Berk₂) Person s thinks truly that there is something which is unthought-of
[($T(t)(s, (\exists x)(x$ is unthought-of)].

But for Prior there is no logical necessity that (Berk₂) cannot be true: if s thinks that there is something unthought-of, s is thinking a general thought, which is thus not about any specific object (see, for example, 1971, 134ff.) in which case there is nothing self-refuting in s 's thinking this general thought in the way that there is for s to think of a given entity that it is unthought-of. Hence, for Prior, Berkeley's master argument “proves too little” (1955b, 37–8): while it establishes that (Berk₁) is impossible, it does not establish that (Berk₂) is impossible, but this latter is what “Berkeley must show to be impossible if he is to establish his idealism”, according to which nothing is unthought-of. For Prior, Berkeley failed, in effect, to recognize that moving the existential quantifier from outside the scope of the “thinks truly” operator in (Berk₁) to inside the scope of that operator in (Berk₂) does not preserve the logical status of the statements involved.

Put more generally, if

(Berk₃) $T(t)(s, (\exists x)(\phi x)) \rightarrow (\exists x)(T(t)(s, \phi x))$

were a logically valid schema, then in establishing that (Berk₁) cannot be true, Berkeley would (by contraposition) be right to hold that (Berk₂) cannot be true either. Hence, to sustain his view that Berkeley's argument “proves too little”, Prior is committed to denying that (Berk₃) is a logically valid schema. That is, he is committed to denying that from a true statement of the form of the antecedent of (Berk₃) we are entitled as a matter of logic to move the existential quantifier outside the scope of

the “thinks truly” operator to infer the corresponding statement of the form of the consequent of (Berk₃); and, as in his reconstruction of the Berkeley’s master argument, he is committed to denying that from a false (and in that case logically false) statement of the form of the consequent of (Berk₃) we are entitled as a matter of logic to move the existential quantifier inside the scope of the “thinks truly” operator to infer that the corresponding statement of the antecedent of (Berk₃) is false (and in the case of Berkeley’s argument, logically false).

In his John Locke Lectures, drafted in 1955, delivered in 1956, and published in 1957 as *Time and Modality*, Prior argues that the Barcan formula

$$(BF) \quad \Diamond(\exists x)\varphi x \rightarrow (\exists x)\Diamond\varphi x$$

is not a logically valid schema, either when “ \Diamond ” is interpreted in modal logic as “it is possible that” or in tense logic as “it either is or has been or will be the case that” (see, for example, 1957, Chapters 3 and 4). In doing so, he makes a structurally similar claim to that which is central to his assessment of Berkeley’s master argument—namely, that moving an existential quantifier from inside to outside a certain operation (here the \Diamond operator, there the “thinks truly” operator) does not preserve the logical status of the statements involved. Accordingly, in *Past, Present, and Future*, in arguing against the validity of (BF), he writes that “[t]here are certain movements of quantifiers inside and outside ... operators which look as if they would be easy, but which ... have encountered obstacles” (1967, 143–4). And in various writings, Prior discusses parallels between the illegitimacy of “movements of quantifiers inside and outside” in operators such as “thinks that” or “imagines that” in “intentional logic”, and in operators, such as “it is possible that” or “it will be the case that” in modal and tense logic (see, for example, 1957, Chapter IX; 1962, 16–19; 1968, 220–1).

Moreover, just as Prior indicates that were (Berk₃) a logically valid schema, Berkeley would be entitled to infer from the logical impossibility of (Berk₁) to the logical impossibility of (Berk₂), thereby sustaining his idealism, so too he indicates that were (BF) a logically valid schema, then we would be forced to reach the conclusion that each object exists necessarily and sempiternally. For just as it is a logical law that it is false that there is an x such that I think truly that x is unthought-of, so too, under certain commonly held assumptions, both

$$(Mod_1) \quad \text{There is something that possibly does not actually exist} \\ [(\exists x)\Diamond\neg(x \text{ does not exist})]$$

nor

$$(Tense_1) \quad \text{There is something that either is or has been or will be the case that it} \\ \text{does not now exist}$$

are logically false. For grant that the quantifiers occurring outside modal and tense operators in these

sentences range over what exists in the actual world and at the present time, respectively, and that the “actuality” and “now” operators “rigidly designate” the actual world and the present time, respectively. Then (since the quantifier in (Mod_1) ranges over what exists in the actual world) it is false that there is an x such that actually x does not exist, in which case (since “actually” rigidly designates the actual world), it is false that there is an x such that it is possible that actually x does not exist. And likewise (since the quantifier in (Tense_1) ranges over what exists now) it is false that there is an x such that now x does not exist, in which case (since “now” rigidly designates the present time), it is false that there is an x such that either is or has been or will be the case that that now x does not exist.

Hence, if (BF) were logically valid, then (by contraposition) since (Mod_1) and (Tense_1) are logically false,

(Mod_2) It is possible that there is something that does not actually exist
 $[\Diamond(\exists x)(@x \text{ does not exist})]$

and

(Tense_2) There either is or has been or will be the case that there is something that does not now exist

would also be logically false. But to accept (Mod_2) and (Tense_2) would be to hold that it is not possible for there to be anything other than what exists in this, the actual, world and that it neither was nor will be the case that anything exists other than what exists now. Just as Prior is committed to rejecting (Berk_3) in order to avoid concluding no one can think truly that there is something that is unthought-of, so too he is committed to rejecting (BF) in order to avoid concluding it is not possible for there to be anything other than what actually exists or that there will never be and never were any entities other than those that now exist.

In this paper, I examine further issues raised by the parallels suggested by Prior’s discussions of Berkeley’s master argument and the Barcan formula. I will argue first that central to both these discussions in Prior are his views of generality, views that Berkeley on the one hand, and proponents of the Barcan formula, on the other, willingly reject. With regard to Berkeley’s argument, Prior takes it as obvious that entertaining a general proposition “ $(\exists x)(Fx)$ ” does not require thinking of any entity that it is F , and this is a view that Berkeley with his attack on “abstract ideas” would reject. With regard to the Barcan formula, Prior is committed to denying, and “necessitist” defenders of the formula are committed to affirming, that a general proposition is either to be identified with or logically equivalent to a truth-function of its instances.

Second, I will argue that in his paper “Self-Refutation—A Formal Analysis”, which is greatly

indebted to Prior's paper on Berkeley, John Mackie advances the discussion of issues raised by Prior by distinguishing between operational and absolute self-refutation. In cases of absolute self-refutation, a proposition logically implies its own negation, so the proposition in question is logically false; in contrast, in cases of operational self-refutation, it is not the proposition p itself, but rather an operation on that proposition, such as believing it or entertaining it, that logically implies the falsity of p . Hence, to establish, in Prior's terminology, that a given proposition p cannot be thought truly—that is, cannot be both thought and true—is, in Mackie's terminology, to establish that it is operationally self-refuting to think p —that is, that thinking p implies that p is false. And, if not the, central claim in Mackie's paper is that taken by itself, establishing that it is operationally self-refuting to perform operation O on proposition p is not sufficient for establishing that p cannot be true. Thus, for Mackie, even if Berkeley were correct to hold that no one can think truly that there is something that is unthought-of, this would not establish the metaphysical conclusion that nothing exists unthought-of. Likewise, by Mackie's reasoning, insofar as arguments for "necessitism" rely on the view that for a proposition " a does not exist" to be expressible, it would have to be false, then such arguments do not establish that a exists necessarily, but only that it is operationally self-refuting for the proposition " a does not exist" to be expressible. Using Mackie's terminology, while Prior's arguments are directed to establishing that it is not operationally self-refuting to suppose that something exists unthought-of or for it to be expressible that there could be entities other than those that actually exist, by Mackie's argument, even if those propositions were thus operationally self-refuting, that would not be sufficient for establishing that they were false.

In the course of researching this paper, I plan to make use of the Prior Nachlass, including the available correspondence to examine how he arrived at, and the extent to which he related, his analyses of Berkeley's master argument and the Barcan formula. As Williamson (2013, 66) points out, as late as *Formal Logic*, published in 1955 but written in 1953, Prior endorses the Barcan formula (and its converse), which he rejects by 1955. I hope to determine whether there is any evidence as to how Prior came to change his view, and whether his work on Berkeley at around the same time, played any role in this change.¹ Further, I hope to determine whether there is anything in the surviving letters from Mackie that helps clarify how he viewed his paper on self-refutation as standing to Prior's work and how Prior viewed Mackie's paper.

¹ Since writing this abstract, I believe I have found from examining J.J.C. Smart's letters to Prior available in the "Virtual lab" that in the same letters (from November 8th and 17th, 1954) in which he first discusses issues surrounding Prior's objections to the Barcan formula, Smart also refers to Prior's paper on Berkeley (a draft of which Prior apparently sent to Smart in the same letter as he expressed

References

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his objections to the Barcan formula). This suggests that Prior first formulated his objections to Berkeley and to the Barcan formula at very nearly the same time. [Note added September 3rd.]