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RESEARCH ARTICLE

Fulfilling Russell's Wish: A.N. Prior and the Resurgence of Philosophical Theology

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Abstract. 'Wolterstorff (2009) provides an important explanation to the question: What caused the surprising resurgence of philosophical theology that has occurred over the last 50 years—a resurgence that rivals its zenith in the Middle Ages? This article supplements that with a more fine-grained answer to the question. Recent discoveries in Arthur Norman Prior's correspondence with J.J.C Smart and Mary Prior, between November 1953 and August 1954 on the possibility of necessary existence, demonstrates the importance of Prior's discussion of the Barcan formulae in *Time and Modality* (1957) for the resurgence of analytic theology. The correspondence establishes that Prior's discovery of tense-logic, and his discussion of quantified tense-logic constituted the perfect opportunity for him to challenge key anti-metaphysical assumptions in analytic philosophy, from which four important consequences can be drawn for the resurgence of philosophical theology. First, Prior's discussion of time and existence challenged the idea of Russell (1945) and Findlay (1948) on the logical status of a necessary existing being. Second, the discussion challenged the Analytic school's view of analysis and gave Prior the opportunity to introduce a different perspective on the relationship between logic and metaphysics. Third, it gave Prior a good

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opportunity to demonstrate that the then-prevailing attitude towards medieval logic was wrong. Fourth, it made it possible for Prior to demonstrate that the highly surprising metaphysical conclusions of quantified tense-logic brings modern logicians into a discussion with the theologically minded medieval logicians.

Keywords: A.N. Prior; analytic theology; the ontological argument; quantified tense-logic.

1. Russell's wish

In *History of Western Philosophy,* Bertrand Russel looked down from the pinnacle of his achievements in analytic philosophy. From this perspective he saw very little chance of discussing theology in the way it was done by medieval thinkers. This caused him to reflect on his preference for the old theology over the new.

> For my part, I prefer the ontological argument, the cosmological argument, and the rest of the old stock-in-trade, to the sentimental illogicality that has sprung from Rousseau. The old arguments at least were honest: if valid, they proved their point; if invalid, it was open to any critic to prove them so. But the new theology of the heart dispenses with argument; it cannot be refuted, because it does not profess to prove its points. At bottom, the only reason offered for its acceptance is that it allows us to indulge in pleasant dreams. This is an unworthy reason, and if I had to choose between Thomas Aquinas and Rousseau, I should unhesitatingly choose the Saint. (Russell 1945, 694)

Russell had, of course, played an important role in dispelling the medieval theologians from modern philosophy. His view on how to analyse philosophical problems was, by 1945, one of the leading principles in the analytic tradition now known as 'analytic philosophy'. According to him: "all philosophical problems—under a correct analysis—will be found to be either not philosophical or to be logical, 'in the sense in which we are using the word, logical' (Russell 1914, 33)." To Russell, the ontological argument was an example of how analysis can end philosophical discussion:

> Take, as a second example, the ontological argument. This, as we have seen, was invented by Anselm, rejected by Thomas Aquinas, accepted by Descartes, refuted by Kant, and reinstated by Hegel. I think it may be said quite decisively that, as a result of analysis of the concept 'existence', modern logic has proved this argument invalid. This is not a matter of temperament or of the social system; it is a purely technical matter. (Russell 1945, 786–87)

It is remarkable and an unexpected turn of events, considering Russell's words from 1945, that the last 40 years have seen a resurgence in philosophical theology in the analytic tradition, comparable only to that of the Middle Ages. Analytic theology, or Philosophical Theology as Wolterstorff (2009) call's it, is of relatively recent origin in the analytic tradition of philosophy. Most akin to systematic theology, it typically differs by placing the same kind of emphasis on analysis of concepts and propositions as that done by analytic philosophers. What caused this resurgence? According to Wolterstorff (2009) there are two main explanations: i) the downfall of logical positivism and, with it, the idea that there is a limit to the thinkable and assertible, and ii) the emergence of meta-epistemology. These coarse-grained explanations are hard to disagree with. They should however be supplemented with more fine-grained answers that demonstrates the connection between the understanding of 'analysis' as it is used in the field of analytic theology and as it is used by the founders of analytic philosophy. A first clue is perhaps already found in Russell's early awareness of Leibniz importance. One of the fundamental ideas within analytic philosophy is the view that 'all sound philosophy should begin with an analysis of propositions', which Russell considered 'a truth to evident, perhaps, to demand a proof' (Russell 1992, 9). He was, however, aware that this idea was not new but could be traced back at least to Leibniz. It raises the question whether analytic philosophy owes more to the past than Russell was prepared to accept. Commenting on Russell's acknowledgement of Leibniz, Michael Beaney asks: 'How far can we go back? To Descartes? To Ockham, Buridan, and other medieval logicians? To Aristotle or even Plato?'(Beaney 2013, 11) Perhaps Russell—and, with him, those who 'make logical analysis the main business of philosophy'(Russell 1945, 835)—had unwittingly signed up to a programme of philosophy that was more at home with Aquinas than

with the philosophical and theological tradition of the so-called Enlightenment?

This suggests a need to supplement Wolterstorff's (2009) explanation with a third point regarding how important it was for analytic theology that the attitude among logicians and philosophers towards medieval philosophy and logic proved to be wrong and based on ignorance. Recent research into the correspondence between Arthur Norman Prior and J.J.C Smart and Mary Prior, has led to new discoveries which demonstrates an important connection between his discussions of time and existence, in *Time and Modality* (1957), and necessary existence in *Is Necessary Existence Possible* (1955). It turns out, that Prior began writing the latter towards the end of 1953, just before the discovery of tense-logic, and that he struggled with anti-metaphysical assumptions in analytic philosophy, when he attempted to publish his article. These letters reveal that Prior struggled with problems relevant for the return of analytic theology and that he, in tense-logic, discovered a way to solve them which accomplished four important things for the resurgence of philosophical theology in analytic philosophy. First, it challenged Russell's assumption that modern logic had shown the ontological argument to be invalid as a mere technical matter concerning existence. Second, it challenged the Analytic school's anti-metaphysical view of analysis and introduced Arthur and Mary Prior's perspective of the relationship between logic and metaphysics. Thirdly, it demonstrated that the then-prevailing attitude towards medieval logic was wrong. Fourth, and finally, it demonstrated that highly surprising metaphysical, if not theological, conclusions are suggested by accepting the uncontroversial logical axioms of quantified tense-logic.

2. Prior's analysis of necessary existence

From Prior's correspondence with J.J.C. Smart, also known as 'Jack' Smart, and with his wife, Mary Prior, we see how, in the years leading up to the discovery of tense-logic, Prior struggled with the then-prevailing paradigm of what Skorupski (2013) calls the 'Analytic school', defined as 'a distinctive school of twentieth-century philosophy which focuses on the idea that the analysis of language is basic to philosophy as such: basic, moreover,

in a particular way—as the route by which traditional philosophical questions can be revealed as pseudo-problems' (Skorupski 2013, 299). Russell's rejection of the ontological argument, as a mere technical problem concerning existence, was an excellent example of what such a perspective could accomplish. This medieval argument had been debated for almost a thousand years and then it turns out to rest on a mere technical matter of logic! It would seem, to use Prior's words, that existence was "tied up and pub in a bag" (Prior 1976, 61). The paradigm of analysis of the analytic school was clearly visible in the policy statement of the journal *Analysis*, founded in 1933:

> The contributions to be published will be concerned, as a rule, with the elucidation or explanation of facts, or groups of facts the general nature of which is, by common consent, already known; rather than with attempts to establish new kinds of facts about the world, of very wide scope, or on very large scale. (Beaney 2013, 43)

As pointed out by Beaney, *Analysis* was 'one of the flagships of analytic philosophy' (Beaney 2013, 43). Logical analysis should, in principle, not yield any new kinds of fact about the world. This idea is clearly spelled out by Rudolf Carnap in *The Elimination of Metaphysics Through Logical Analysis of Language* (1932):

> The development of *modern logic* has made it possible to give a new and sharper answer to the question of the validity and justification of metaphysics. The researches of applied logic or the theory of knowledge, which aim at clarifying the cognitive content of scientific statements and thereby the meanings of the terms that occur in the statements, by means of logical analysis, lead to a positive and to a negative result. . . . In the domain of metaphysics, including all philosophy of value and normative theory, logical analysis yields the negative result that the alleged statements in this domain are entirely meaningless. Therewith a radical elimination of metaphysics is attained, which was not yet possible from the earlier anti-metaphysical standpoints. (Carnap 1959, 60)

A consequence of the then-prevailing view on the relationship between logic and metaphysics is evident in Findlay's argument against God's

existence in *Can God's Existence be Disproved?* (1948) John N. Findlay, under whom Prior's completed his Master of Arts (MA) in Philosophy in 1937, argued that because the idea of 'necessary existence' does not make sense and is an essential part of the concept of God, God cannot exist. Evidently, Findlay's argument rested upon the view of Russell, quoted above, that an analysis of existence could demonstrate that the ontological argument rests upon a mistaken view of existence, which renders it self-evidently absurd to talk about such a being:

> For if God is to satisfy religious claims and needs, he must be a being in every way inescapable, One whose existence and whose possession of certain excellences we cannot possibly conceive away. And modern views make it self-evidently absurd (if they don't make it ungrammatical) to speak of such a Being and attribute existence to him. (Findlay 1948, 182).

The dismissal of the ontological argument as resting on a technical mistake stood as a hallmark of what a correct analysis is capable of—namely, eliminating metaphysics. So much so, that an argument from the modern Russellian view on existence, according to Findlay could disprove the existence of God. It was, Findlay writes, "an ill day for Anselm when he hit upon his famous proof. For on that day he not only laid bare something that is of the essence of an adequate religious object, but also something that entails its necessary non-existence." (Findlay 1948, 182). Towards the end of 1953 however, Prior turned his attention to Russell's view on the concept of existence asking the question: is necessary existence possible? He had come to see a way in which G.E. Moore's and F.L.G. Frege's analysis of existence claims could be used to argue that the idea of necessary existence makes sense. His work led to one of his important analytic contributions to the field of philosophical theology, *Is Necessary Existence Possible* (1955). It occurred to Prior that in Frege's logic, propositions such as, 'Unicorns do not exist' must be rephrased as, 'The concept "unicorn" is not instantiated'. Preferring to talk of 'exemplification', Prior therefore noted that while some concepts do not preclude their own exemplification (such as 'unicornhood'), other concepts do (such as 'being at once cubical and non-cubical'). This means that the non-existence of unicorns differs from the non-existence of 'being at once cubical and non-cubical'; the first is a contingent fact, while

the other a necessity. His analysis leads him to raise the obvious question regarding God's supposedly necessary existence: why should there not be properties of concepts that necessitate their exemplification?

> We might then say that while it is a contingent fact that lions exist, since there is nothing about the concept of lionhood which necessitates its exemplification, it is a necessary fact that there is a God, since there *is* something about the concept of deity which necessitates its exemplification. (Prior 1955, 546)

It turns out, that Prior had a hard time getting his work on necessary existence published. We know from correspondence between Prior and Smart in 1953 that Prior had already sent an early version of it to the journal *Analysis* in December 1953. Unfortunately, in most cases, we only have the letters from Smart to Prior, but judging from Smart's letter to Prior on 15 November 1953, Prior had also clearly sent an early draft of *Is Necessary Existence Possible?* to him. It is clear from Smart's reply to Prior that the central discussion concerns the correct analysis of 'there exists a *y*' and that Smart's views on the matter cohered with that of the analytic school:

> Thank you for the necessary existence thing. Did I ever send you my lecture on the existence of 'God'? In this I argue that 'Logically necessary being' is self-contradictory like 'round square', simply because 'there exists a y' can never be a truth of logic. Your sentence 'For what cannot be thought of as attaching to a subject at all cannot be thought of as attaching necessarily to a subject' seems to me [to] miss the point. For clearly 'exists' <u>can</u> be predicated of God, unicorns, lions, etc. (Even though there is a sense in which 'it isn't a predicate'!). (Smart to Prior, 15 November 1953)

Unfortunately, we do not have Prior's response to Smart, but judging from his argument in *Is Necessary Existence Possible?*, Prior most likely offered reasons to reject the view that 'there exists a *y*' is not a truth of logic, based on Moore's and Frege's understanding of logic. Smart's reply came on 23 November 1953:

> Your defence of the ontological argument is immune to my criticism. I suppose deep down I just know there can't be any such property of concepts as you envisage because I have a conventionalist metaphysics engrained in me! But I must say it is difficult to find a knock down proof of the contradiction of your thesis. You ought to send it to some journal and see if the big brains can find a hole in your reasoning! (Smart to Prior, November 23, 1953)

It is interesting that Smart described Prior's paper as 'his defence of the ontological argument', as Prior, in his published version in 1955, writes that he does 'not wish to consider whether there is in fact any necessary being' (Prior 1955, 545). Prior was aware that his analysis of necessary existence would be seen as a defence of the ontological argument, but we do not have any reason to think that this is a characterisation he used himself in his letters to Smart. He did however on several occasions write about the ontological argument and considered the validity of modal as well as non-modal versions (Jakobsen & Øhrstrøm 2017). Mary Prior, who also had an MA in Philosophy and often discussed philosophy and logic with her husband in their correspondence, refers to it as, 'your necessary existence thing' in a letter to her husband while she was hospitalised with tuberculosis (Mary to Arthur Prior, August 17, 1954). Indeed, in one of the few letters we have from Prior to Smart, dated 30 June 1954, Prior writes about 'my defence of the possibility of Necessary existence'.

Prior took Smart's advice and sent his paper to the journal *Analysis*. On 7 December 1953, Smart writes that he is 'glad you are putting up the Nec. Connection thing to be shot at. It ought to create a lively discussion in Analysis'. From Smart's letter to Prior on 3 February 1954, we learn that Prior's article was rejected by *Analysis*. We also learn that Smart, in unmistakeable terms, disagreed with the arguments given for the decision. He found the decision taken by the editor narrow minded and marred by an "anti-metaphysical bias in the wrong sort of way." Despite his former words on the matter, Prior's "note on the ontological argument [sic] is a piece of analysis. And a much more interesting piece of analysis than the dull, and often quite mistaken, stuff so frequently published in Analysis." (Smart to Prior, February 3, 1954) As hinted by Smart, Prior could not

have failed to be aware that his defence of the notion of necessary existence would cause a lively discussion in *Analysis*, but neither he nor Smart had anticipated that the article would be rejected as not being an analysis. The discussion of what constitutes a logical analysis was often debated in the journal's first volumes following its founding in 1933 (Beaney 2013, 43). But something more than another theory on analysis had to happen. Indeed, the exchanges between Prior and Smart and Arthur and Mary Prior on the analysis of necessary existence show us what had to happen. Logical positivism was dying, but the hope obviously still lingered throughout the 1940s and early 1950s that logical analysis constitutes a demarcation between the medieval view on logic and philosophy and the modern view, perceived along the lines of the Analytic School. *Analysis* was a journal that saw itself as being in the business of guarding against the traditional view of logical analysis, as a tool to help draw out the implications of our metaphysical commitments about reality. We know that Arthur and Mary Prior discussed these paradigmatic matters with regard to Arthur's work on necessary existence. In fact, it turns out that Mary put words on the relationship she saw between Prior's 'necessary existing thing', which she considered 'a paradigm of philosophical argument' and what logical formulation can do:

> I've been thinking about your necessary existence thing and drawing morals from it. It seems to me to be a paradigm of philosophical argument. I mean the argument against has a philosophical rigour which objections like 'what Q. could that answer?' just haven't. It would be rash to claim that to any philosopher it is clear that the argument is no good because there are people who'll object to logic itself! But its [*sic*] clear that to most philosophers of whatever school and its [*sic*] good to see a philosopher dealing w. an argument as an argument, and not simply brushing it up in order to secure his own particular 'school' against another. To be interested in 'what is' instead of 'what ism,' wh. is the curse. And that is what logical formulation can do so well—get philosophy into a common language and clear from the language of the cliques. . . . So much 'philosophical' argument consists of changing the subject instead of arguing it out and I think Berkeley and Hume did try to argue out specific problems. (Mary to Arthur Prior, August 17, 1954)

The rejection of Arthur's argument as not being an analysis was, according to Mary, in line with dismissing the ontological argument by asking, 'What type of question would that answer?' Such a reply is dissatisfying since the arguments, that have traditionally been raised against Anselm's argument, of course grant that a meaningful analysis can be made of existence and necessity. It is evident that Mary and Arthur sought for a paradigm shift in philosophy, and they saw formal logic as having a key role to play in helping philosophers give a genuine treatment to arguments instead of merely securing their own 'ism'. Formal logic could 'get philosophy into a common language', 'clear from the language of the cliques'. There can be no doubt that Arthur shared Mary's view, as he writes the following in *On Some Proofs of the Existence of God*:

> We take it for granted nowadays that we have Existence properly tied up and put in a bag, but I don't know. I don't see that it doesn't make sense to say 'This exists', though its sense is no doubt a kind of tautology; and I don't see that it doesn't make sense to say 'This doesn't exist' though *its* sense is no doubt a kind of contradiction. It certainly makes sense, as Moore pointed out some years ago, to say 'This might not have existed', and for all I know there may be, as the theological tradition affirms, objects of which this last is true and objects of which it is false. (Prior 1976, 61)

Arthur's discovery of tense-logic proved to constitute the perfect framework for this discussion of modality and existence, in which it could be clear that we do not have existence 'tied up and put in a bag' as a purely technical matter. Equally important, it would challenge the perspective of the analytic school on the relationship between logic and metaphysics and provide a golden opportunity to introduce a new perspective in line with his and Mary's convictions.

3. Prior's discussion of existence and modality

The topic of Prior's John Locke Lectures, given in 1956, was tense-logic, but his mission was wider, as the first lines of *Time and Modality* (Prior

1957, vii) make clear: 'These lectures are the expression of a conviction that formal logic and general philosophy have more to bring to one another than is sometimes supposed'. Two philosophical issues were given central attention: the 'master argument' and 'existence and time'. The master argument was a philosophical problem, which, to Prior, had existential importance and was something he had pondered since 1931, when he first discovered the philosophy and theology of Jonathan Edwards and, for a brief period, became a keen disciple of him (Jakobsen et al, 1931). The second topic related to his overall aim of demonstrating that, contrary to the prevailing opinion in analytic philosophy, there were still philosophical problems related to the concept of existence. Both topics would be central to the ongoing discussion of tense-logic. The first issue, the 'master argument', constitutes the beginning of the modern discussion of divine foreknowledge and human freedom, culminating in *Formalities of Omniscience* (1962), which is arguably the earliest best example of the analytic theology to come. The second issue constitutes an important contribution to the understanding of what existential import, if any, is entailed by truths about non-existing objects (including future, past and non-actual objects); Prior's discussion of this issue serves to undermine Russell's idea that the ontological argument pivots on what is a mere technical, non-philosophical matter concerning existence.

3.1 Tense-logic and quantification

Prior's discovery of tense-logic was in many ways connected to the influence of his teacher J.N. Findlay (see Jakobsen 2021). Most important was the influence of Findlay's *Time: A Treatment of Some Puzzles* (1941), which led Prior to see that tenses should be treated as a modality along the lines of 'it is necessarily the case that p' and 'it is possible that p'. In this manner, the future becomes 'it will be the case that p' (or in symbolism, Fp), the past becomes 'it was the case that p' (or in symbolism, Pp) and the present tense is simply p. Accordingly, we can say, that Fp and Pp take us to the future or past time, respectively, at which p simply is true. From the weak operators F and P, it is possible to define two strong operators $H \equiv \sim P\sim$ 'it has always been the case that p', and $\mathrm{G} \equiv \sim F\sim$ 'it will always be the case that p'. *Prior's* work on tense-logic lead to the formulation of a

minimal tense-logic, known as K_t, in which we have the following axiom schemes:

(A1) p, where p is a tautology of the propositional calculus.

(A2) $G(p \supset q) \supset (Gp \supset Gq)$.

(A3) $H(p \supset q) \supset (Hp \supset Hq)$.

(A4) $PGp \supset p$.

(A5) $p \supset GPp$.

It also includes the rule of modus ponens:

(MP) If $\vdash p$ and $\vdash p \supset q$, then $\vdash q$.

Furthermore, it features the rules RG and RH for introducing tense operators:

(RG) If $\vdash p$, then $\vdash Gp$.

(RH) If $\vdash p$, then $\vdash Hp$.

For Prior's discussion of time and existence, it is important that we in K_t are able to prove thesis T6:

(T6) $H(p \supset q) \supset (Pp \supset Pq)$.

The proof is simple from A3 using transposition:

$H(p \supset q) \supset (Hp \supset Hq)$.	A3
$H(\sim q \supset \sim p) \supset (H\sim q \supset H\sim p)$.	$p/\sim q$, $q/\sim p$
$H(p \supset q) \supset (\sim H\sim p \supset \sim H\sim q)$.	Transposition
$H(p \supset q) \supset (Pp \supset Pq)$.	Df. H.

With regard to quantification, this means that if there *will be* a person who flies to Mars then there *is* a person who will be flying to Mars, or formally:

$F\exists x{:}\phi(x)$ 'It will be that there is someone who is flying to Mars'.

entails

$\exists x{:}F\phi(x)$ 'There is someone who will fly to the moon'.

This surprising result from Ruth Barcan's formulae challenge the idea that existence is a technical matter. To prove it, we need, in addition to K_t, the following rules for the quantifiers:

($\forall$1) If $\vdash \phi(x) \supset \beta$, then $\vdash \forall x{:}\phi(x) \supset \beta$.

($\forall$2) If $\vdash \alpha \supset \phi(x)$, then $\vdash \alpha \supset \forall x{:}\phi(x)$, for x not free in α.

To these two rules correspond two rules for the existential quantifier:

($\exists$1) If $\vdash \phi(x) \supset \beta$, then $\vdash \exists x{:}\phi(x) \supset \beta$, for x not free in β.

($\exists$2) If $\vdash \alpha \supset \phi(x)$, then $\vdash \alpha \supset \exists x{:}\phi(x)$.

With these, Prior demonstrated that $F\exists x{:}\phi(x)$ entails $\exists x{:}F\phi(x)$ in the following manner:

(1) $G\phi(x) \supset G\phi(x)$

(2) $\forall \mathrm{x}{:}G\phi(x) \supset G\phi(x)$ (1 and $\forall$1)

(3) $H(\forall \mathrm{x}{:}G\phi(x) \supset G\phi(x))$ (2 and RH)

(4) $P\forall \mathrm{x}{:}G\phi(x) \supset PG\phi(x)$ (3, MP and T6)

(5) $P\forall \mathrm{x}{:}G\phi(x) \supset \phi(x)$ (4 and A4)

(6) $P\forall \mathrm{x}{:}G\phi(x) \supset \forall \mathrm{x}{:}\phi(x)$ (5 and $\forall$2)

(7) $G(P\forall \mathrm{x}{:}G\phi(x) \supset \forall \mathrm{x}{:}\phi(x))$ (6 and RG)

(8) $GP\forall \mathrm{x}{:}G\phi(x) \supset G\forall \mathrm{x}{:}\phi(x)$ (7, MP and A2)

(9) $\forall \mathrm{x}{:}G\phi(x) \supset G\forall \mathrm{x}{:}\phi(\mathrm{x})$ (8 and A5)

(10) $\sim G\forall \mathrm{x}{:}\phi(\mathrm{x}) \supset \sim\forall \mathrm{x}{:}G\phi(x)$ (9 and transposition)

(11) $F\exists \mathrm{x}{:}\phi(x) \supset \exists \mathrm{x}{:}F\phi(x)$ (10 and $F = \sim G\sim$)

The conclusion (11) is as surprising as the axioms and rules are uncontroversial. Ruth Barcan had already discovered the formulae in 1946, but they had not in general been applied to metaphysics. Tense-logic was however ideally suited to this as Williamson points out, it "is no surprise that the metaphysical implications of [the Barcan formulae] first became visible

through their analogous in temporal logic." (Williamson 2013, 66).[1] From what appears to be a natural thing we wish to say in tense-logic concerning some future object, it follows that our existential quantifier ranges over future as well as present objects. Taken at face value, then, if we are ontologically committed to whatever x we quantify over then, as a mere technical matter, tense-logic gets us back into a sempiternal ontology with an uncanny similarity to the tenseless universe it set out to abandon. Prior therefore found it disturbing that 'the dubiety of the Barcan formula is . . . transmissible to the entire structure of the tense-logic we have so far erected' (Prior 1957, 27). It was evident to Prior that the Barcan formula constituted a strong challenge to accepting tense-logic because 'the only ground one can think of for assenting to it would be a conviction that whatever is going to exist at some future time exist[s] already' (Prior 1957, 29). Therefore, to him, there was a choice between finding a way to reject the conclusions of the Barcan formula—to not take tenses seriously—or to revise the original postulates for tense-logic to ensure a better fit between tense-logic and quantification, so that 'we may be in a better position to compare tense-logic and tenseless logic and to make our choice between them' (Prior 1957, 28). To some, such as L. Jonathan Cohen, the problems discussed by Prior concerning quantification and tense-logic were a reason to reject tense-logic:

> If we insist on having a 'tense-logic' we must assume that some form of discourse is sempiternal; and perhaps such an assumption would have seemed a commonplace to many theologically-minded ancient and medieval logicians. Or, if we reject any such assumption, we must also reject the idea of 'tense-logic' and fall back on the timeless truth—evaluations of ordinary logic. What we can be sure about is that 'it is not good logic' to try and have it both ways, as Professor Prior seems to do—to adopt a 'tense-logic' but to repudiate the sempiternity-assumptions. (Cohen 1958, 268)

When Prior, in *Past, Present and Future* (1967), took up the discussion again, now summarising a decade of research on the problem, it was evident

[1] I am grateful to an anonymous reviewer for reminding me of the work of Williamson on this issue.

that logicians and philosophers had not, in general, followed Cohen's idea of dismissing tense-logic as not good logic. On the contrary, as pointed out by Jack Copeland, Prior's work in Britain—including his John Locke Lectures and subsequent colloquiums and visits around the country—'helped to revitalize British logic' (Copeland 1996, 6); as was evident in Prior's discussion of time and existence in *Past, Present and Future* (1967), tense-logic had inspired many other logicians to work within the field. Cohen's comment is, however, interesting, as it points to an early awareness of the theological and metaphysical implications buried within the discussion begun by Prior on time and existence. Accepting tense-logic brings us to the edge of what a modern-minded logician or philosopher can accept and suggests that Prior's turn to the ancient and medieval view of logic invites philosophers to the discussion that are open to the metaphysics of the theology-minded medieval logicians.

4. The medieval turn

When Findlay in 1948 argued that God's existence could be proven to be impossible it rested upon the assumption that modern logic had proven the concept of necessary existence to be senseless. When Prior, in *On Some Proofs of the Existence of God* (1976), wrote that some philosophers had put forward what they claimed to be a disproof of the existence of God, he quite likely had his former teacher in mind. Russell's and Findlay's views of existence demonstrate in a clear way how the Analytic school barred the way for a 'theologically minded' medieval mindset, to use Cohen's term, in analytic philosophy. This accentuates the importance of Prior's discussion of time and existence in quantified tense-logic. His analysis of what he considered 'the untidiest and most obscure part of tense-logic' (Prior 1967, 172) demonstrated that we do not have existence 'tied up and put in a bag', as assumed by Russell and Findlay. Prior's correspondence with Smart and Mary Prior about necessary existence, along with his attempts to publish his work on the subject in 1954, reveal how Prior's subsequent discussion of time and existence in quantified tense-logic helped him challenge the assumptions within the Analytic school about what *analysis* means, which had prevented him from getting his article published in the journal

Analysis. Contrary to the analytic school, Prior considered logical analysis to be compatible with metaphysics. In *Past, Present and Future* (1967), Prior compares his understanding of the relationship between logic and metaphysics to that of a lawyer and a client. The job of the logician is like that of a lawyer, 'not in Toulmin's sense, that of reasoning less rigorously than a mathematician—but in the sense that he is there to give the metaphysician, perhaps even the physicist, the tense-logic that he wants, provided that it be consistent' (Prior 1967, 59). Prior became able to challenge the paradigm of analysis adhered to by the Analytic school because the discovery of tense-logic forces us to take metaphysics seriously in relation to the nature of time and logical realism. Furthermore, taking tenses seriously demonstrates that the logical analysis of time and existence, far from eliminating metaphysical problems, opens them up for metaphysical and further logical analysis. When this, as pointed out by Cohen, brings us back to the theologically minded medieval thinkers, it is because tense-logic is fundamentally a strong defence of the medieval and ancient view of the tensed nature of propositions. Willard Van Orman Quine had argued in 1953 that one has not really appreciated what modern logic is if one does not see that it must be tenseless (Quine 1953). Against Quine, Prior had argued the following:

> There are no grounds of a purely logical character for the current preference, and . . . 'propositions' in the ancient and medieval sense lend themselves as readily to the application of contemporary logical techniques and procedures as do 'propositions' in the modern sense. (Prior 1958, 105)

The turn to medieval logic not only challenged Quine's view of what formal logic is but also served a greater purpose for Prior, who wanted to change the prevailing attitude within analytic philosophy towards ancient and medieval logic:

> Neither Russell nor, I think, [Alfred North] Whitehead brought to their work on mathematical logic any very close or detailed acquaintance with the logic of Aristotle and the Schoolmen. Toward Aristotelianism and scholasticism [Russell's *sic*] attitude has always been one of contempt; and his example has helped to make it customary in English-speaking countries for modern

> mathematical logic and the Aristotelian logical tradition to be set in sharp contrast to one another. (Prior 1951, 46)

Prior's discovery of tense-logic therefore constitutes an important part of answering Wolterstorff's question. It challenged the view on medieval logic and thinking regarding such a fundamental questions as, 'What is a proposition?'. To the medieval logician, as Uckelman points out, all logic was temporal logic (Uckelman 2013, 485), but as Øhrstrøm and Hasle point out, this assumption lost its influence in the humanistic critique of scholastic logic (Øhrstrøm and Hasle 1995, 85). Although historians of medieval philosophy appreciated analytic method prior to Prior (see e.g. Salamucha (1934/1969), or Boehner (1952))[2], the demonstration that formal logic is not necessarily tenseless was a discovery of great importance for the return of medieval philosophy and brought about a significant shift to analytic philosophy and the history of medieval philosophy.

The resurgence of medieval theology was already apparent to Prior. It was evident to him that his analysis of time and existence suggested—what Cohen had also pointed out—that perhaps a turn to the medieval view of logic implied a turn to the theologically focussed mindset of medieval logicians concerning facts about non-existent objects. Medieval logicians had no problem accounting for the truth-conditions of propositions involving references to merely future or past objects. Prior was aware of this and included it in his analysis of time and existence when he returned to it in *Past, Present and Future* (1967):

> The idea of a permanent pool of objects, some now existing and some only having existed or going to exist, seems to be presupposed in the medieval theory of ampliatio, according to which what things a general term can stand for depends in part on the tense or mood of the verb with which it is used. In 'Some man is running', the word 'man' can stand for any man now existing; but in 'Some man will be running' it can stand also for a man who merely will exist, and in 'Some man could be running' it can stand for a man who merely could exist—in the one case,

[2] I am grateful to an anonymous reviewer of this article for pointing out the importance of Salamucha 1934/1969 and Boehner 1952.

> supponit pro futuris, and in the other pro possibilibus, and not only pro praesentibus. The metaphysics involved in this way of talking is apt to strike the modern reader as weird. . . . But let us not exaggerate this queerness. What this comprehensive objecthood amounts to is simply that there are already facts about these objects, even if they are not yet existent. (Prior 1967, 30–31)

Prior did not accept the medieval idea, and as such, it was not as a defender of this medieval perspective that he contributed to the resurgence of philosophical theology. He paved the road, however, for subsequent discussions of this topic by demonstrating that from simple axioms, quantified tense-logic yields conclusions that are metaphysically controversial to the modern mind but were generally accepted as valid by theologically minded medieval thinkers. Medieval logicians would, as Ernest Addison Moody (1953) points out, deny the idea so important to many modern philosophers that 'This term stands for something, therefore it stands for something which exist[s]' (Moody 1953, 57). Subsequent discussions of this problem of grounding for propositions about future, past, non-existing objects still seem to favour modern intuitions. There are however strong defenders of the medieval perspective described by Moody, such as Craig (2017).

5. Conclusion

Little known to Russell, less than a decade after his musings on Rousseau and Aquinas, Prior demonstrated, through his discussion of quantified tense-logic, that, contrary to the then-prevailing opinion in analytic philosophy, existence is not 'tied up and put in a bag'. His discovery of tense-logic proved Quine wrong on the idea that formal logic must be tensed and made it possible to tease out the metaphysical aspects of quantified tense-logic. The new discovery in this story comes from Prior's correspondence with Smart and Mary on the possibility of necessary existence. Here we see Prior's struggles with getting his work on the possibility of necessary existence published and the importance this question had for him and Mary. His discovery of tense-logic and his presentation of this in Oxford in 1956 at the

John Locke lectures provided the perfect opportunity for the discussion of time and existence in *Time and Modality* (1957) which would significantly promote his and Mary's paradigm for the relationship between logic and philosophy. It challenged, head on, the view of the journal *Analysis*—that a correct logical analysis should eliminate metaphysics and not suggest metaphysical conclusions from logical inquiry. The surprising results of quantified tense-logic has medieval logic written all over it, from the fundamental acceptance of the medieval and ancient view of propositions to the sempiternal conclusions already considered by medieval logicians in their theory of ampliatio. It paved the way for inviting theologically minded logicians of the Middle Ages into modern discussions of existence and future contingency. Prior, for these reasons, helped fulfil the wish of Russell to discuss theology with Aquinas rather than Rousseau. Additional work needs to be done to provide a more detailed, fine-grained answers to the important question: why did analytic theology appear in a tradition that had written it off as an absurdity?

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