

## TIMELESSNESS AND THEOLOGICAL FATALISM

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A widely discussed theological argument for fatalism begins with the doctrines of God's omniscience and the unalterability or necessity of the past and concludes that all events—past, present, and future—are necessary. A consequence of this argument is that the alleged openness of the future which allows for free actions is merely an illusion. Future events are fixed, unchangeable, necessary in the same sense as past events if the argument's conclusion holds.

The argument may be put as follows: Suppose event E is now taking place. Then, because God is omniscient, at any arbitrary time interval in the past, say, yesterday, God then knew that event E would now take place. Furthermore, since E's taking place is also a necessary condition of God's knowledge that E will take place, it follows that:

- (1) God knew yesterday that E would now take place if and only if E is now taking place.

God's knowing something yesterday is a past event and cannot now be undone, even if at some earlier time it could then have been prevented. So if God knew yesterday that E would now take place, it is (now) necessary that God knew yesterday that E would now take place. Moreover, as a general principle, whatever is necessary must therefore be the case, so the converse of the last proposition holds as well. Putting both together yields:

- (2) God knew yesterday that E would now be the case if and only if it is necessary that God knew yesterday that E would now be taking place.

Thesis (1) is properly understood as a necessary truth. The

only if portion is an analytic truth about knowledge—God's or anyone else's. The *if* portion, as already mentioned, is a consequence of God's omniscience, which is taken to be a necessary property of God. Therefore, if one combines the necessity of statement (1) with the law of modal logic that necessity distributes across the biconditional (i.e.  $L(A \equiv B) \equiv (LA \equiv LB)$ ), the result is:

- (3) It is necessary that yesterday God knew that E would now be taking place if and only if it is necessary that E is now taking place.

Finally, from (1), (2) and (3) it follows that:

- (4) E is now taking place if and only if it is necessary that E is now taking place.

This is, of course, the fatalistic conclusion. Since no particulars about event E were employed in the course of the argument, (4) generalizes to «whatever takes place takes place of necessity».

The same assumptions as were employed in the argument above also yield universal predetermination as a consequence, i.e. that if an event E is now taking place, then it was, say yesterday, necessary that E would now take place. First the analytic truth that if God knows that a certain event E will take place, then E will take place, is invoked relative to yesterday. This is stated as:

- (5) If God yesterday knew that E would take place now, then it was the case yesterday that E would take place now.

Then, from (4) it follows that:

- (6) If it was the case yesterday that E would take place now, then it was then necessary that E would take place now.

But, suppose that E is taking place now. Then from (1) we can say that God yesterday knew that E would now take place. And from this and (5) and (6) together with the law of hypothetical syllogism we arrive at the following conclusion.

- (7) If E is now taking place, then it was the case yesterday that E would necessarily now take place <sup>(1)</sup>.

The argument presented for the fatalistic thesis (4) goes back at least to St. Thomas Aquinas where it was cited in two works as an objection to be overcome by his theory of omniscience <sup>(2)</sup>. Several writers on theological fatalism have also recently noted that the argument bears a certain resemblance to the celebrated passage in Aristotle's *On Interpretation* <sup>(3)</sup> where he argues that if one grants that a proposition concerning a (contingent) future event is true beforehand, then the event in question seems to be necessary. In my demonstration, above, of universal predetermination from the same assumptions used in the argument for theological fatalism, Aristotle's major premiss can be detected. From (5) and (1) it follows that:

- (8) If E is taking place now, then it was the case, say yesterday, that E would now take place.

Obviously the converse of (8) holds if it does, so (8) can be strengthened to the biconditional:

- (9) E is now taking place if and only if it was the case yesterday that E would now take place.

<sup>(1)</sup> Formal versions of the arguments are presented in the appendix.

<sup>(2)</sup> The argument has a long history. It is found in both *DE VERITATE* question 2, article 12, objection 7 and *SUMMA THEOLOGICA* Part I, question 14, article 13, objection 2. Jonathan Edwards presents it in *FREEDOM OF THE WILL* (1754) ed. Paul Ramsey (New Haven, 1957), pp. 257-58. It has recently been discussed in similar versions by Nelson Pike *GOD AND TIMELESSNESS* (New York, 1970), pp. 57-58, and by Paul Helm «Divine Foreknowledge and Facts» *CANADIAN JOURNAL OF PHILOSOPHY* (1974-75), pp. 305-15, among others.

<sup>(3)</sup> *ON INTERPRETATION* ix, 18b-19a 6.

Taking (9) itself as analytic, and imposing the doctrine of the necessity of the past upon its right-hand side yields by the same moves as in (2) and (3) above the familiar fatalistic conclusion:

(10) E is taking place now if and only if it is necessary that E is now taking place.

Since very few philosophers or theologians have been willing to embrace the fatalistic position which both arguments establish, it is not surprising that in the long history of this issue many different responses have been formulated. The assumptions are open to attack on several grounds. The applicability of the doctrine of the necessity of the past, for example, can be questioned insofar as the «event» of God's knowledge (yesterday) that E will take place seems rather unlike the usual sort of past events, e.g. Caesar's crossing of the Rubicon. There is no question concerning the necessity, from the present perspective, of Caesar's act. However, some commentators have argued that one can change past knowing and believing, which if correct would vitiate all claims of necessity for such events. A stock example is that if Jones believed yesterday that I would have toast for breakfast today, my decision to have toast makes his (past) belief true. Hence I seem to have affected a past event by my actions<sup>(4)</sup>. On the other hand, others have questioned the inference that the conclusion of the arguments—i.e., (4)—rules out human freedom. The 18th Century philosopher Jonathan Edwards takes this line, urging that although all events take place of necessity, nevertheless the will is free. The rebuttal which is most often employed, however, is what I call the *timelessness solution*, first given currency by St. Thomas.

The timelessness solution has two parts. First, Aristotle's own solution to the argument for fatalism he considers is

(4) See Anthony Kenny «Divine Foreknowledge and Human Freedom» in his *AQUINAS* (Garden City, 1969).

adopted<sup>(6)</sup>. Putting aside questions of the exact interpretation of the passages where the problem is discussed (*On Interpretation*, ix, 18b 26 - 19a 6) Aristotle's position seems to have been that propositions concerning (contingent) future events are neither true nor false. This effectively rules out the major premiss of the argument as I have presented it, viz. (8) «If E is now taking place, then it was the case yesterday that E would now be taking place». Without this dictum in the argument the conclusion cannot be reached on Aristotle's grounds. However, this maneuver does not deal with the theological version of the argument without further embellishment. So the second part of the timelessness solution as Aquinas develops it is to also deny the initial thesis (1), but to add that God does know about event E from His *eternal* point of view. That is to say, God did not know yesterday about E, nor does he know today or any day, for that matter; His knowledge is timeless and is not subject to past, present, or future characterizations. To see how this position both saves God's omniscience and scuttles the argument to the fatalistic conclusion one need only to reflect that since God's knowledge of E can never properly be said to be past, the doctrine of the necessity of the past—which Aquinas never questions—does not apply to God's knowledge. So we still have the thesis:

(11) E is taking place now if and only if God knows (eternally) that E takes place.

But even after applying the principle of the distribution of necessity to (11) when considered as analytic, we get:

(12) It is necessary that E is taking place now if and only if it is necessary that God knows (eternally) that E takes place.

Since we cannot obtain the necessity of God's knowledge of

<sup>(6)</sup> St. Thomas is quite clearly agreeing with Aristotle in his COMMENTARY ON ARISTOTLE'S ON INTERPRETATION, Book xiv.

E, given that this knowledge is never past, there is no way to move to the fatalistic conclusion.

Not only is God's knowledge timeless, *what* He knows is clearly timeless as well. As Aquinas and the other medieval commentators on the problem were fond of saying, God sees all events «in the mirror of eternity»; to Him «everything is present and nothing is future». <sup>(6)</sup> Hence what God knows, or as I prefer to say, the propositions that He knows, must be in Rescher's phrase *chronologically definite*. <sup>(7)</sup> Mathematical propositions and propositions of the following sort provide examples:

- (13) Sam *crosses* the bridge at t.

The verb «crosses» is italicized to indicate that it is to be taken as *temporally neutral* and «t» is to be understood as a temporal constant like, e.g., 3:01 PM on March 21, 1977. I shall henceforth call such propositions *atemporal*. Note that atemporal propositions may well contain indexical expressions conveying temporality so long as they are bound by non-indexical modes of temporal reference. For example,

- (14) John *knows* at t that Bill had gone home the day before.

- (15) By 1938 it was already clear that a major war would break out within five years.

The truth-values of atemporal propositions are clearly not dependent upon time. So (13), (14), and (15), if true at all, are eternally or timelessly true. I shall use the designation *true<sub>t</sub>* for this concept of truth. Of course the predicate «*is true<sub>t</sub>*» as it occurs in propositions of the following type is itself temporally neutral.

<sup>(6)</sup> DE VERITATE, question 2, article 12, reply.

<sup>(7)</sup> For an elaboration of the distinction see Nicholas Rescher and Alasdair Urquhart *TEMPORAL LOGIC* (New York, 1972) and Stephen Braude, «Tenses and Free Repeatability» *Philosophical Review* (1973), pp. 188-214.

(16) «A» is true<sub>1</sub>.

Hence propositions which attribute truth<sub>1</sub> to other propositions are atemporal as well (the same, *mutatis mutandis*, goes for falsehood<sub>1</sub>).

By comparison, human knowledge is temporal. We, unlike God, can correctly be said to know-at-a-time that something is the case. But does this mean that everything that we know is temporal as well? It seems that as part of the position which Aquinas (and possibly Augustine and Boethius) adopted, human knowledge is admitted to have temporal content. Implicit in Aquinas' formulation of the timelessness solution is his agreement that the necessity of the past doctrine holds. He never questions the *validity* of either the theological argument to fatalism or Aristotle's version, both of which essentially depend upon the necessity of the past. But if all propositions were atemporal, the doctrine would be entirely vacuous. The very statement of the doctrine requires the notion of necessity at a certain time but not at others. For example, it is *now* necessary that Caesar crossed the Rubicon even if it *wasn't* necessary that he *would* cross the Rubicon in 48 B.C. Construing «Caesar crosses the Rubicon at 49 B.C.» as the only sort of proposition available to depict this event has the consequence that both

(17) It is not necessary at 48 B.C. that Caesar crosses the Rubicon at 49 B.C.

and

(18) It is necessary at 1977 A.D. that Caesar crosses the Rubicon at 49 B.C.

Since «Caesar crosses the Rubicon at 49 B.C.» is a timeless matter, it is hard to see how both (17) and (18) could be true. On the atemporal account the necessity of a proposition would properly be like its truth—timeless or eternal and not subject to change. Compare, for instance, the necessity of « $2 + 2 = 4$ »

and the contingency of «Mundus» in latin means 'world'. Hence Aquinas' acceptance of the necessity of the past commits him, as far as I can see, to temporal contents for human knowledge. There are other reasons for believing that Aquinas' view requires that some propositions be non-atemporal. McCall has recently argued that any metaphysics of becoming countenancing objective time flow, which Aquinas' certainly does requires some propositions not to be timeless and truth (for such propositions) to be temporal<sup>(8)</sup>. His argument is straightforward; there is no way to depict objective time flow using timeless propositions.

The sort of propositions which might be said to be non-timeless are like the following:

- (19) Sam is going home
- (20) The book has always been left on the table
- (21) There will be no school on Friday.

Ubiquitous in such propositions is a reference to the present which may be made explicit in (19) by adding the adverb «now» after «is». This is not to say that there is a covert singular term built in which refers to the *date* of the present; this view would render (19) - (21) as atemporal as any of the other propositions which have been mentioned. To further stress this point, notice that «Today is March 15, 1977» if so understood would state the empty triviality «March 15, 1977 is March 15, 1977». Henceforth I shall refer to these propositions as *temporal*. That temporal propositions need an equally temporal sort of truth has already been mentioned. Given the positionality of, e.g., (19) it is clear that at one time it may be false (before Sam goes home; after he gets there) and at another

<sup>(8)</sup> Storrs McCall «Objective Time Flow» PHILOSOPHY OF SCIENCE (1976), pp. 337-362. A similar argument can be found in L. Nathan Oaklander «Propositions, Facts, and Becoming» PHILOSOPHICAL STUDIES (1976), pp. 397-402.



time it may be true (as he is going). In any case, (19) cannot be taken to be timelessly true, nor can any other temporal proposition. The closest one can get to truth<sub>1</sub> for temporal propositions is truth *at all times* as in the case of «All bachelors are (now) unmarried». <sup>(9)</sup> Temporal truth I call *truth*<sub>2</sub>. Hence, where «B» is a temporal proposition,

(22) «B» is (was, will be) true<sub>2</sub>

is itself a temporal proposition.

Although each type of proposition and accompanying type of truth-value is best suited to heaven or earth, respectively, there is some cross over between the two categories. God can know about temporal truth<sub>2</sub>-values when they are expressed atemporally, as, for example, in

(23) «Sam was crossing the bridge» is true<sub>2</sub> at t.

From the discussion so far, clearly (23) counts as an atemporal proposition. Analogously, humans can make use of eternal truths when, e.g., acknowledging the truth<sub>1</sub> of mathematical propositions or of scientific laws. However, appearances to the contrary, we rarely use atemporal propositions even when discussing events which are time-invariant. Although it is eternally true that the Battle of Waterloo precedes World War Two, when citing this fact we ordinarily say

(24) The Battle of Waterloo preceded World War Two

which is a temporal proposition given the inflected verb «preceded». What distinguishes cases like (24) from (19) - (21) is that (24) can be turned into an atemporal proposition without mention of any specific time whereas this is not so with the others.

It hardly needs pointing out that there is an important relationship between temporal and atemporal propositions. Var-

<sup>(9)</sup> The example is Braude's, *op. cit.*

ious philosophers from Russell to the present have argued that temporal propositions (or *allegedly* temporal propositions) should be considered as defective and should be paraphrased into atemporal formulations<sup>(10)</sup>. Whether or not this can be done without significant distortion of the sense of the original remains a controversy, but it is nevertheless clear that every temporal proposition has an *atemporal analogue*<sup>(11)</sup>. This view makes sense out of Aquinas' doctrine that God can know of future contingent events without knowing them as future.

In the terminology of this paper, God knows the atemporal analogues of temporal future tense propositions. So, for example, although no one, according to Aquinas, could know

(25) Sam will cross the bridge at  $t$

God knows (let us say)

(26) Sam *crosses* the bridge at  $t$

which is the atemporal analogue of (25). In general, atemporal analogues are formed from temporal propositions by transforming the main verb into a temporally neutral form and adding whatever temporal constants are required. So, where we know the  $\text{truth}_2$  of some temporal proposition, God knows the  $\text{truth}_1$  of its atemporal analogue. It follows from this that atemporal analogues are entailed by their temporal brethren. Hence, where «A» is a temporal proposition and «B» is its atemporal analogue,

(27) «A» is (now)  $\text{true}_2 \rightarrow$  «B» is  $\text{true}_1$

or, alternatively,

<sup>(10)</sup> See my «Tense and Temporally Neutral Paraphrase» AUSTRALASIAN JOURNAL OF PHILOSOPHY (1974), pp. 28-85.

<sup>(11)</sup> W.V. Quine has long urged that this is so. See, among others of his works, WORD AND OBJECT (Cambridge, Mass., 1960) section 36.

(28) «A» is true<sub>2</sub> at t  $\rightarrow$  «B» is true<sub>1</sub>.

Although the truth<sub>2</sub> of «A» is a sufficient condition of the truth<sub>1</sub> of «B», it is not a necessary condition according to the timelessness solution. The timelessness solution requires that the converse of (27) fails in some cases where «A» is a future tensed proposition. Even though an atemporal proposition, e.g.,

(29) It is raining in Boston at t

may be true<sub>1</sub>, it *cannot* be permitted that in general

(30) It will be raining in Boston

is true<sub>2</sub> prior to t without risking the entire enterprise. However, there is no objection to

(31) It is (now) raining in Boston

being true<sub>2</sub> at t, nor any objection to

(32) It was raining in Boston

being true<sub>2</sub> at all times after t.

Propositions like (30), (31), and (32) may be thought of as the *temporal analogues* of atemporal (29). They result from reversing the process of atemporal transformation. But given the variety of tenses there are several temporal analogues, in most cases, for any atemporal proposition. As in the case of atemporal analogues, no claim is made that an exact translation is made by a temporal analogue. However, there are entailments. The timelessness solution permits the following thesis:

(33) «B» is true<sub>1</sub>  $\rightarrow$  ( $\exists$  t) «A» is true<sub>2</sub> at t,

where «A» is a temporal analogue of «B» and «A» is *not* a future tense proposition.

Aquinas defends the sort of restriction I place upon (33) by claiming that a temporal proposition regarding an event *E* is not true until *E* is «in its causes», but when regarded *sub specie aeternitatis* *E* (an atemporal proposition about *E*) is known to God (*is true*<sub>1</sub>)<sup>(12)</sup>. Yet by allowing eternal truths (truths<sub>1</sub>) or timeless knowledge about event *E*, his position seems open to the following objection. Given that there *are* true (true<sub>1</sub>) propositions about *E*, any omniscient knower has access to such propositions. Even though, by hypothesis, omniscient knowers of the sort Aquinas envisions are not in time, there is nothing to prevent the transmission of such information about *E* to beings who are in time. Even granting this as a logical possibility, however, vitiates the timelessness solution by violating the restriction placed upon (33). For example, suppose

(34) A snowstorm *occurs* in Chicago at *t*

*is true*<sub>1</sub>. Further suppose an omniscient knower passes this information along to a temporal being, say, Clyde at a time *t'* which is prior to *t*. So,

(35) Clyde knows at *t'* that (34).

But this together with a minimal understanding of the dating system on Clyde's part would seem to add up to knowledge of the future. That is,

(36) Clyde knows at *t'* that a snowstorm will occur in Chicago at *t*.

But (34) has as a consequence

(37) «A snowstorm will occur in Chicago» *is true*<sub>2</sub> at *t'*.

<sup>(12)</sup> A discussion of the point can be found in his COMMENTARY, Book xiv, 19.

Thus the restriction on (33) fails taking with it the timelessness solution.

A proponent of the timelessness solution can parry the counter-argument above merely by denying that information concerning Chicago's weather can be transmitted to Clyde before the fact. To many (including Aquinas) this would not be an attractive solution to adopt, but it is feasible. Even so, the amended position remains open to attack on the following grounds. Take, for example, the mathematical proposition « $2 + 2 = 4$ ». Obviously it is true<sub>1</sub>. But however queer it may sound to say so, there seems to be no possible objection to the claim that « $2 + 2 = 4$ » is also true<sub>2</sub> at any given time, say  $t$ . Some will no doubt feel that the application of temporal truth to an atemporal proposition makes no sense, truth<sub>2</sub> being restricted to temporal matters. The defender of this position will probably use as the basis of his argument that no circumstances can be imagined under which anyone would assert that  $2 + 2 = 4$  at a given time, instead of simply asserting that  $2 + 2 = 4$ . But such arguments commit what Searle has called the *assertion fallacy* of confusing the circumstances under which something may or may not be said with the meaningfulness of the assertion<sup>(13)</sup>. Clearly the reason one would not be likely to ever assert that yesterday two plus two equalled four is not because to do so would be meaningless, but rather because it is altogether too obvious to require saying. If I am right about this then there is no objection to

(38) « $2 + 2 = 4$ » is true<sub>2</sub> at  $t$

or, for that matter, to the claim that any true<sub>1</sub> atemporal proposition is true<sub>2</sub> at any time. This might be said to be one way of putting the view that eternity implies sempiternity<sup>(14)</sup>. Expressed as a thesis the claim I am making comes to:

<sup>(13)</sup> John Searle, *SPEECH ACTS* (Cambridge, 1969), pp. 141-146.

<sup>(14)</sup> More on this issue can be found in M. Kneale, «Eternity and Sempiternity» *PROCEEDINGS OF THE ARISTOTELIAN SOCIETY* (1968-69), pp. 223-238.

(39)  $\langle B \rangle$  is true<sub>1</sub>  $\rightarrow (\forall t) \langle B \rangle$  is true<sub>2</sub> at  $t$

(where  $\langle B \rangle$  is an atemporal proposition).

An instance of the doctrine expressed by (39) is

(40)  $\langle A$  snowstorm occurs in Chicago at  $t \rangle$  is true<sub>2</sub> at  $t'$

by virtue of the truth<sub>1</sub> of (39). Still supposing  $t'$  to be earlier than  $t$ , we have as a consequence

(41)  $\langle A$  snowstorm occurs in Chicago at  $t \rangle$  will be true<sub>2</sub> at  $t$

which certainly entails

(42)  $\langle A$  snowstorm will occur in Chicago at  $t \rangle$  is true<sub>2</sub> at  $t'$ .

Proposition (42) would seem to be a consequence of the truth<sub>1</sub> of (34), which, again, violates the restriction on (33) and forces the collapse of the timelessness solution. Notice that this line of argument does not require any transmission of information from timeless beings to temporal beings, nor any omniscient knower at all. One might well agree with the correctness of my argument from (33) to (42) without also claiming that anybody could know at  $t'$  that a snowstorm will occur in Chicago. The fatalistic conclusion does not rely on any claims of knowledge, as pointed out earlier in connection with Aristotle's formulation of the argument, but on truth (truth<sub>2</sub>) instead.

To recount exactly where Aquinas' position on theological fatalism flounders, suppose God knows (eternally) that  $A$ , where  $\langle A \rangle$  is an atemporal proposition. It follows that  $\langle A \rangle$  is true<sub>1</sub>. But, then, it also follows, by (39), that for any time  $t$ ,  $\langle A \rangle$  is true<sub>2</sub> at  $t$ . Further suppose that  $\langle A \rangle$  concerns some contingent event  $E$  which is to take place at time  $t$ . Then, given  $\langle A \rangle$  is true<sub>2</sub> at every time,  $\langle A \rangle$  is true<sub>2</sub> at some time  $t'$  which is earlier than  $t$ . So the temporal analogue  $\langle B \rangle$  of  $\langle A \rangle$  with its principal verb in the future tense is true<sub>2</sub> at  $t'$  as well. Hence at  $t'$  it was already true<sub>2</sub> that  $E$  would take place at  $t$ , hence

by the argument of (8) - (10)—which Aquinas agrees is valid—it is necessary that E takes place at t.

As I mentioned earlier, the interest in Aquinas' version of the timelessness solution is his willingness to embrace the doctrine that the past is necessary. This, together with the view that God's knowledge is timeless, forces him into a dual theory of propositions and truth, as I have reconstructed his position, which ultimately proves unfriendly to his goal of showing the compatibility of omniscience and human freedom. Of course the fatalistic conclusion reached by the argument at the outset the paper can be avoided by adopting the view that the doctrine of the necessity of the past is vacuous and that truth is timeless<sup>(15)</sup>. Then *all* propositions will have to be understood as atemporal. But such a line forces other, more fundamental alterations which Aquinas' overall philosophical position resists<sup>(16)</sup>.

#### APPENDIX

The argument for theological fatalism can be perspicuously formulated using the following notation:

- L* — necessity operator
- Pn* — metric past tense operator
- Fn* — metric future tense operator
- G* — «God knows that»
- p* — «E is taking place»

- (1)  $p \equiv Pn G Fn p$  (assumption of God's omniscience)
- (2)  $L p \equiv L Pn G Fn p$  (11) plus RL:  $L(A \equiv B) \rightarrow (LA \equiv LB)$

<sup>(15)</sup> This view is advanced by A.R. White, *TRUTH* (Garden City, 1970) pp. 41-56, in addition to others whom White cites. Several writers have taken the contrary view and argued that restricting truth to what is here called truth 1 entails fatalism. See Stephen Cahn *FATE, TIME, AND LOGIC* (New Haven, 1967) and, for a much different perspective C.W. Rietdijk «Special Relativity and Determinism» *PHILOSOPHY OF SCIENCE* (Dec. 1976) pp 598-609. Storrs McCall, *op. cit.* also discusses such views.

<sup>(16)</sup> For comments and criticisms on earlier drafts of this paper I am grateful to Denis Corish and Frank Parker.

- (3)  $P_n A \equiv L P_n A$  (doctrine of the necessity of the past)  
 (4)  $P_n G F_n p \equiv L P_n G F_n p$  (from (3) and (1))  
 (5)  $P_n G F_n p \equiv L p$  (from (2) and (4))  
 (6)  $p \equiv L p$  (from (1) and (5))

The argument for universal predetermination requires two additional rules:

- RP:  $\vdash A \rightarrow \vdash P_n A$   
 RP $\supset$ :  $P_n(A \supset B) \rightarrow (P_n A \supset P_n B)$   
 (7)  $G F_n p \supset F_n p$  («if a knows that p then p»)  
 (8)  $P_n G F_n p \supset P_n F_n p$  (from (7), RP, and RP $\supset$ )  
 (9)  $F_n p \supset L F_n p$  (from (6)  $F_n p/p$ )  
 (10)  $P_n F_n p \supset P_n L F_n p$  ((9), RP, RP $\supset$ )  
 (11)  $p \supset P_n G F_n p$  (from (1))  
 (12)  $p \supset P_n F_n p$  ((11), (8))  
 (13)  $p \supset P_n L F_n p$  ((12), (10))

Aristotle's argument begins with a strengthened version of (12) and proceeds to the fatalistic conclusion (6):

- (14)  $p \equiv P_n F_n p$   
 (15)  $L P_n F_n p \equiv L p$  ((14), RL)  
 (16)  $P_n F_n p \equiv L P_n F_n p$  ((3)  $P_n F_n p/p$ )  
 (17)  $P_n F_n p \equiv L p$  ((16), (15))  
 (18)  $p \equiv L p$  ((14), (17))

Steps (1) - (6) are taken from A.N. Prior «The Formalities of Omniscience» in his *Papers on Time and Tense* (Oxford, 1967), pp. 32-33.

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