The Doctrines of Divine Foreknowledge and Human Freedom: A Logical Analysis

Peter Øhrstrøm
Department of Communication and Psychology
Aalborg University
poe@hum.aau.dk

Abstract: This paper focuses on the logical tense between two Christian doctrines which are considered to be fundamental, i.e. the doctrines of divine foreknowledge and human freedom, respectively. It has often been argued that the combination of these two doctrines gives rise to a logical contradiction, and that at least one of the two doctrines therefore has to be dropped. This claim will be investigated and a number of possible solutions will be considered. The analysis will be based on ideas from the temporal logic originally suggested by A.N. Prior (1914-69).

Keywords: Divine foreknowledge, human freedom, temporal logic

Introduction: The logical problem

Consider the following two statements:

(1)   Nicolai is drinking beer

(2)   Nicolai is not drinking beer

In the temporal logic suggested by A.N. Prior (1914-69) it is very important to note that the truth-value of (1) and (2) may change over time. Obviously, at any time one of them is true whereas the other is false.

We may of course also consider the disjunction:

(3)   Nicolai is drinking beer or Nicolai is not drinking beer.

Let the letter p stand for the basic proposition in (1). Then the disjunction in (3) can be stated in the following way:

(3') p or not p

or as logicians will normally put it:

(3'') $p \lor \sim p$

Here $\sim p$ stands for the negated position, (2).

The combined statement in (3), (as well as in (3') and (3'')) is obviously true at any time. We may of course discuss what it means to drink beer and what beer is. For instance, should a non-alcoholic beer be accepted as a beer? But as soon as questions of that kind have been answered, we may be able to find out by a rather simple inspection of the facts which of the two basic statements is the true one and which of them is (right now) the false one. This seems to be based on a very basic principle, which may be seen as version of the so-called principle of correspondence:

(C)   A statement is true now if and only if the statement corresponds to facts about the present reality.

This means that the proposition "Nicolai is drinking beer" is true now if and only if it is a fact about the present reality that he is drinking beer. If that is in fact the case then it will now and at all future times be un-preventable i.e. it is and will always outside the control of Nicolai and everybody else that he has been drinking beer at this (present) time. Before he started to drink he may perhaps have chosen otherwise, but even when he is in fact drinking beer it seems un-preventable (i.e. outside the control of anyone) that right now he is drinking beer, although he may of course stop his drinking perhaps even very soon. Either there are facts about the present reality which makes the proposition in question true or there are no such facts. The existence of such facts may depend on what we did in the past, but it does not depend on what we are doing now or in the future.

Such considerations may lead us to an additional principle, which we may call the principle of now-unpreventability:

(U)   If a statement corresponds to facts about present reality, then there is nothing we can do about the existence of these facts (about the present reality) i.e. the statement is not only true, but it is also now unpreventable that it is true.

What is pointed out in (U) is that although we may influence the future by the acts we are performing or about to perform, we cannot influence the past and the present. The present is as it is – beyond what we can influence now!

The combination of (C) and (U) leads to the conclusion if a statement, q, is true now, then it is now un-preventable that q is true now. Letting $\Box$ stand for "it is now unpreventable that", the principle (U) may be restated in the following manner:

(U') $q \supset \Box q$, where q is a statement about the present state.

Taken together with (3'), either it is now unpreventable that Nicolai is now drinking beer or it is now unpreventable that Nicolai is not now drinking beer. It all depends on what Nicolai has decided to do.

If we turn to what Nicolai may or may not be doing tomorrow at noon then things become more complicated. However, it is normally held that there are two (and only two) possibilities: 1) to-morrow at noon he will be drinking beer and 2) to-morrow at noon he will not be drinking beer. This means that the following disjunction appears to be true:

(4)   It will be the case tomorrow at noon that Nicolai is drinking beer or it will be the case tomorrow at noon that Nicolai is not drinking beer.

But even if this is so, we don't believe that we can right now sort out by simple inspection or otherwise which of the two components of the disjunction is the true one and which of them is the false one.

Following A.N. Prior's notation (Prior 1962, 2003) we may let "*F(1)*" stand for logical operator "It will be the case tomorrow at noon that…". Using this formalism (4) can be restated in the following way:

(4')   One of the propositions, *F(1)p* and *F(1)~p*, is true now. The other is false now.

This means that the disjunction, *F(1)p* ∨ *F(1)~p*, is in fact true now. That is, either it is true now that tomorrow at noon Nicolai is drinking beer, or it is true now that tomorrow at noon Nicolai is not drinking beer. But how can such statements be true now given (C)? It follows from this principle that *F(1)p* can only be true now if there is a fact about the present reality to which it corresponds. But how could there such a fact? The scholastic and classical Christian answer would involve a reference to the doctrine of divine foreknowledge. This means that exactly one of the two statements, *F(1)p* and *F(1)~p*, is true now, since exactly one of them is included in

what God knows now. So this statement is true since it corresponds to the facts that God knows. This is at least how William of Ockham (ca. 1287–1347) saw it:

> … the divine essence is an intuitive cognition that is so perfect, so clear, that it is an evident cognition of all things past and future, so that it knows which part of a contradiction [involving such things] is true and which part is false. [Ockham, 1969, p.50]

It follows from the doctrine of divine foreknowledge that *F(1)p* can be conceived as a statement about the present since it is equivalent to "God knows now that *F(1)p*", from which it seems to follow that the principle of unpreventability of the present can be applied to *F(1)p.* By the same kind of reasoning, the principle can also be applied to *F(1)~p.* Taken together this means that given the doctrine of divine foreknowledge and the principle of unpreventability of the present, we may form an argument based on the following three premises:

(4')   One of the propositions, *F(1)p* and *F(1)~p*, is true now. The other is false now.

(U'1) $F(1)p \supset \Box F(1)p$

(U'2) $F(1)\sim p \supset \Box F(1)\sim p$

It is very easy to see that these premises lead to the conclusion:

(D) $\Box F(1)p \lor \Box F(1)\sim p$

Clearly, (D) is the deterministic (or even fatalistic) claim that either it is now unpreventable that tomorrow at noon Nicolai is drinking beer or it is now unpreventable that tomorrow at noon Nicolai is not drinking beer. This means that no matter, whether he is going to drink beer tomorrow at noon or not, what happens will be now unpreventable and not under the control of Nicolai or anybody else. Obviously, (D) is the denial of Nicolai's freedom of choice when it comes to drinking beer tomorrow at noon. It follows from the premises that Nicolai has only got one option. He simply must "choose" what God already now knows that he is going to do.

In short, the principle of divine foreknowledge with regard to future contingents can in the context of this paper be represented in terms of (4'). Taken together with the principle of unpreventability of the present (including God's present foreknowledge) this leads to (D), which may conceived as a denial of human freedom. If both principles are accepted, then the position leads to a kind of determinism or fatalism. Alternatively, as shown in the diagram below we may formulate an indeterministic temporal logic by rejecting at least one of the two principles. In the following, we shall comment briefly on these three kinds of indeterministic theory.

Unpreventability of God's *Divine* *present fore-* *Foreknowledge* *kwowledge* *regarding future contingents*	Yes	No
Yes	Determinism Fatalism	William of Ockham Luis de Molina
No	A.N. Prior Open theism	Nuel Belnap

Figure 1: Four kinds of temporal logic introduced in relation to the principle of unpreventability of the present and the principle of divine foreknowledge regarding future contingents.

The classical View on the Future

According to the classical view defended by William of Ockham and many other scholastic logicians, the doctrine of divine foreknowledge regarding future contingent is accepted, whereas the principle of unpreventability of the present is rejected (Øhrstrøm & Hasle, Part 1.9, p. 87 ff.). This means that according to this view statements like *F(1)p* about the contingent future actually have truth-values now. As maintained in (C) a future contingent is true if it corresponds with what Gods knows now. The rejection of the principle of unpreventability of the present, however, means that the contingent future is not necessary (or now unpreventable). The point is that God's knowledge now depends on out future free choices. God knows what Nicolai is going to do tomorrow at noon, and if Nicolai had decided to do something else, God would now have known that instead. But here is a problem. In principle, God could communicate his knowledge regarding Nicolai's future acts to a prophet or even to Nicolai himself. If this is done, it seems that Nicolai's alternatives disappear since God cannot be mistaken which means that Nicolai must act according to the divine proclamation. Ockham solves this problem by maintaining that all biblical prophecies about future contingents are conditionals (Ockham 1969, p.44). He gives an example from the Old Testament referring to the prophet, Jonah, who was asked to go to Nineveh, where he should proclaim: "Forty more days, and Nineveh will be overturned" (The Book of Jonah, ch. 3 v. 4). However, we learn from the Bible text that the citizens of Nineveh repented and the city was not overthrown at that time. But does this mean that the prophecy was in fact false when it was stated? According to Ockham we should understand the prophecy of Jonah as presupposing the condition 'unless the citizens of Nineveh repent'. Obviously, this is in fact exactly how the citizens of Nineveh understood the statement of Jonah! Viewed as a conditional the prophecy may still be true. Ockham's point seems to be that although God knows the truth-values of the unconditional prophecies regarding the contingent future, He does not communicate this knowledge to human beings. In this way God's unconditional knowledge concerning the contingent future remains silent (tacit). Still, it is conceptually important that God knows the truth-value of any future contingent.

According to the fatalistic or deterministic view, time is seen as a linear sequence without alternatives. Contrary to this view, time may be conceived as a system with alternative possible futures, but at every moment of time only with one past. The system is said to be backwards linear, but forward branching. In terms of such a branching time system, the classical view can be illustrated in the following way:
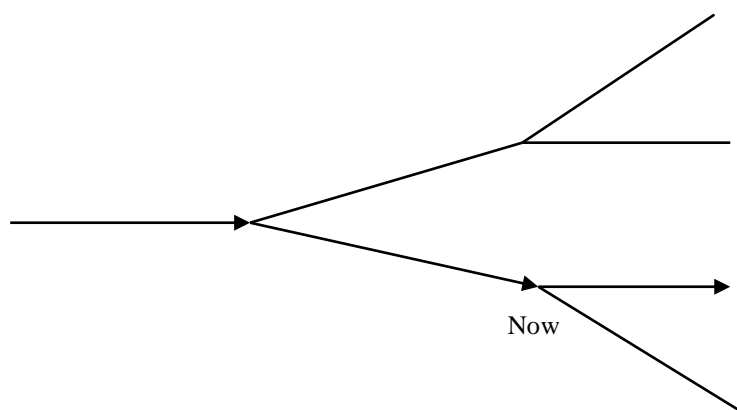

Now

Figure 2: The classical view according to which there is a chronicle ('the thin red line') representing the true story (past, present and future).

The point is that according to this view there is a special chronicle from the past through the Now and into the true future. This chronicle represents what actually happened, what happens and what is going to happen. In short, this chronicle represents reality (past, present and future). It is also a part of the classical view that no human being can have complete knowledge regarding this very special chronicle. But it is conceptually important that this very special chronicle (representing reality) actually exists. The existence may be understood as closely related to the divine (fore)knowledge. God knows it in all details! All other routes through the branching time diagram represent possibilities which could have been but which more or less differ from the true story. Nuel Belnap et al. (2001) have introduced the term, *the thin red line*, in his discussion and criticism of this classical view (see below).

Prior's rejection of the classical view

A.N. Prior studied the logic of the classical view carefully. He found its indeterminism attractive, but in his opinion it is also rather problematic to assume that a future contingent can be true now. If a statement regarding the future is in fact true now, then there must according to Prior be a strong evidence for it. And when it comes to the contingent future we can in Prior's opinion have no such evidence. Therefore, Prior found it rather problematic to assume that one of the future possibilities has priority as the one which is going to be real. On the contrary, Prior maintained that all possible futures can be real. His view can be illustrated in terms of a branching time diagram in the following manner:
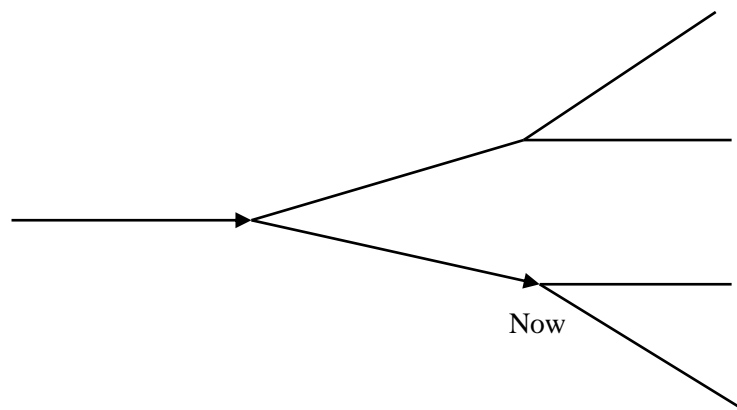

Figure 3: The Priorean view according to which there is no chronicle now representing the true future.

Prior argued that if a statement about the future is in fact true now, then there must be some strong evidence, which in fact also makes the statement now unpreventable. For this reason, Prior could not reject what we have called the principle of unpreventability of the present. In order to avoid the determinism which follows from the above argument, he then had to reject the principle of divine foreknowledge at least in the strong sense, which leads to (4'). Coming back to the above example, this means that given that Nicolai is free to decide to drink (or not to drink) beer tomorrow at noon, it cannot according to the Priorean view be true now neither that he is drinking beer tomorrow at noon nor that he is not drinking beer tomorrow at noon. According to this view, both $F(1)p$ and $F(1)\sim p$ are false. Prior points out that this in fact makes it possible to maintain the doctrine of divine foreknowledge in a weaker sense than (4'). The weaker sense may simply be the claim that God knows everything which is true. Since there is

no truth now about Nicolai's relation to bear tomorrow at noon, the doctrine does not imply that God knows whether Nicolai is going to drink bear tomorrow at noon or not.

While $F(1)p$ and $F(1)\sim p$ are both false in the Priorean system, the proposition $\sim F(1)p$ is obviously true in the system. This means that according to this view we should make a clear distinction between the following two propostions:

$F(1)\sim p$: "It will be the case tomorrow at noon that it is not the case that Nicolai is drinking beer".

$\sim F(1)p$: "It is not the case that it will be the case tomorrow at noon that Nicolai is drinking beer".

This distinction may of course be seen as difficult to handle at least within the scope of natural language. Most language users would probably, based on common sense reasoning, think that if it is not the case that it will be that Nicolai is drinking beer tomorrow at noon, then it is in fact going to be the case tomorrow at noon that he is not drinking beer. The distinction between $\sim F(1)p$ and $F(1)\sim p$ certainly appears to be a very high price to pay in order obtain indeterminism along with an acceptance of principle of unpreventability of the present.

It is interesting that Prior's view has given rise to a new theological position, which has been termed "open theism". This position has recently been discussed by David Jakobsen (2013).

Nuel Belnap's Open Future

Like Prior, Nuel Belnap and his co-workers (2001) have criticized the classical view rejecting the idea that a proposition about the contingent future can be true now. However, Nuel Belnap et al. don't want to accept the strange Priorean distinction between $\sim F(1)p$ and $F(1)\sim p$. They have argued that it is in fact possible to have

(5) $F(1)p \lor F(1)\sim p$

without assuming (4'). This can be done by rejecting the very concept of the absolute truth-value of a proposition at a moment of time. The idea here is that the truth-value of a proposition should depend not only on the temporal moment but also on the choice of route (or chronicle) through the branching time system. This idea had in fact been developed by A.N. Prior who termed it 'ockhamistic' (see Øhrstrøm and Hasle, ch. 2.8, p. 203 ff), although William of Ockham certainly would have accepted what we have called the classical view.

By making truth relative to the routes through the branching time system, the idea of divine foreknowledge can in principle be excluded from the theory, and the branching time system becomes the same as in the Priorean case, i.e. the same as in Figure 3. The various possible futures have the same status. None of them represent "the future", but they are all possible futures.

The theory suggested by Nuel Belnap et al. (2001) is elegant, and it has many followers in modern temporal logic. However, again it is a rather high the price they have to pay in order to obtain indeterminism without accepting the classical view. The price in this case is that we have to drop the classical and absolute idea of truth and replace with a more relative notion. If this worldview is accepted, the notion of truth (and therefore also the notion divine foreknowledge) will be rather limited. All knowledge will be conditional i.e. truth will in principle only make sense relative to an assumed course of events. In this case there would not be any absolute truth about the contingent future which could or could not be known by anyone.

In terms of the example used in this paper, this means that the statement, "Nicolai is going to drink beer tomorrow at noon", does not have a truth-value right now. According to the theory the same holds for the proposition, "Nicolai is not going to drink beer tomorrow at noon". According

to Nuel Belnap et al. (2001) such propositions can only be true (or false) relative to the future course of events. It is like saying that if Nicolai is going to drink beer tomorrow at noon, then he is going to drink beer tomorrow at noon. This is certainly not surprising! And the loss of absolute truth is in fact a great loss. Very often we want to refer to the truth-value of contingent statements. For instance, we may be betting. Some say that tomorrow at noon Nicolai will be drinking beer, some may hold the opposite. Some of the persons involved in this must be right (the winners), whereas others are wrong (the loosers). But who is who? We don't know now, but we may of course know later.

In defence of the thin red line

But what is so wrong about the classical view which was defended by William of Ockham and many other great logicians? According to Nuel Belnap et al. (2001) a model like the one in Figure 2 does pay due regard to the idea of alternative possibility. After all, the notion of alternative possibilities is essential, when it comes to a proper understanding of the idea of human freedom. Nuel Belnap et al. have argued that in case the counterfactual possibility has been chosen, there would also in this alternative situation have been one of the possible futures which would have corresponded to the true future. This means that the model in Figure 2 is far too simplistic. In order to represent the notion of the true future correctly, there should be a "selected" future route at any choice point in the diagram.

I believe that Nuel Belnap et al. are right. Their criticism should certainly be taken into account. However, their observation is definitely not new. This point was in fact well understood and defended by Louis de Molina (1535-1600), who argued that God has so-called middle knowledge. This means that God knows what any human being would freely do in any possible situation. In terms of a branching time diagram this may be illustrated in the following way:
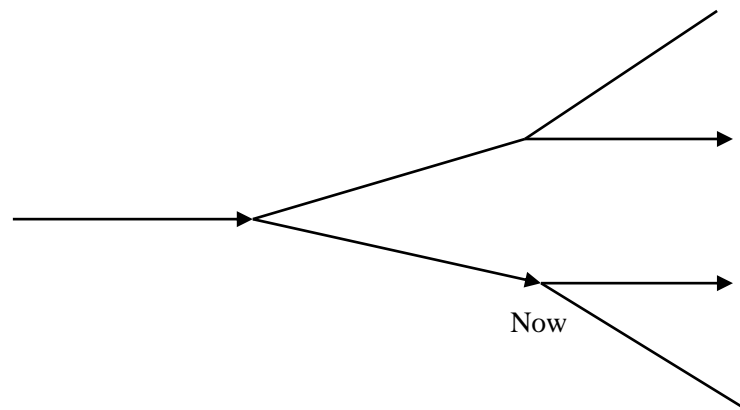

Now

**Figure 4: A Molinistic model taking divine middle knowledge into account.
There is a "true future" at any choice point in the diagram.**

In fact, it turns out that there are clear biblical examples expressing this idea of divine middle knowledge. One example is this:

> Woe to you, Korazin! Woe to you, Bethsaida! If the miracles that were performed in you had been performed in Tyre and Sidon, they would have repented long ago in sackcloth and ashes. Matt. 11.23

If we take the meaning to be that in the counterfactual situation in question the people in Tyre and Sidon would freely have repented, then this would constitute an example of divine middle

knowledge. According to Molina one may in this was truly speak of the free choice of human beings even in a counterfactual situation:

> God knows that there would have been repentance in sackcloth and ashes among the Tyronians and Sidonians on the hypothesis that the wonders that were worked in Chorozain and Bethsaida should have been worked in Tyre and Sidon … But because the hypothesis on which it was going to occur was not in fact actualized, this repentance never did and never will exist in reality – and yet it was a future contingent dependent on the free choice of human beings. (Molina 1988, p. 116-17)

Conclusion

The analysis of the logical possibilities, when confronting the doctrines of divine foreknowledge and human freedom, shows that it is logically possible to uphold both doctrines in a consistent manner. The problem which has to be solved in order to do so is the logical tension between the doctrine of divine foreknowledge and what has here been called the principle of unpreventability of the present (understood as including God's present foreknowledge). The logical analysis shows that there as two ways to go:

1. One can weaken the doctrine of divine foreknowledge. This can be done in Prior's way (leading to 'open theism') , or in Belnap's more radical manner according to which any truth is relative to a course of events. – In both cases the price will be very high in the sense that essential parts of everyday reasoning have to be abandoned.

2. One can accept the classical idea of divine foreknowledge and drop the principle of unpreventability of the present. Then the price is that an even higher degree of divine knowledge has to be accepted, namely that of the so-called middle knowledge. In addition, we have to accept that what God knows now can be influenced by our future decisions.

It should be mentioned that all this can be formulated in a secular language. As it is shown with the formulation in (4'), the problem can be stated in terms of truth-values without any reference to divine knowledge. On the other hand, if we accept the version of the so-called principle of correspondence discussed here and formulated as (C), then any discussion of truth must give rise to a discussion regarding the facts and the very nature of the present reality. It seems obvious that 1) above can be accepted without involving very much metaphysics – probably even on the basis of a purely materialistic worldview. The other possibility above, 2), seems, however, to call for an assumption regarding a deeply metaphysical nature of reality consistent with the classical doctrine of divine foreknowledge.

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