ROCZNIKI FILOZOFICZNE
Tom LXVI, numer 4 – 2018
ENGLISH ONLINE VERSION
DOI: http://dx.doi.org/10.18290/rf.2018.66.4-2en

CIRO DE FLORIO
ALDO FRIGERIO

FRAGMENTED FUTURE CONTINGENTS AND OMNISCIENCE

Marcin Tkaczyk (this volume) shows that the antinomy of future contingents follows a general schema, which can be instantiated in many different ways. This depends on the different kinds of states of affairs that can be considered representative in the past of the future contingent states of affairs. They can be regarded as sentences, propositions, or the belief of an omniscient being. The solution indicated by Tkaczyk for solving the antinomy is to allow the causation of a past state of affairs by a future state of affairs. This solution — as Tkaczyk admits — must overcome the largely shared opinion that the future cannot cause or determine the past.

We believe that this problem has different degrees of difficulty depending on the kind of representative past state of affairs. It does not seem so puzzling to state that a future state of affairs can determine the truth of past sentences. If we consider truth as a relationship between a sentence and its truth maker, then the (non)-existence of a future truth maker of a past sentence determines the different *relationship* of that sentence with such a truth maker. But it cannot be denied that a past entity can modify its relationships with what will happen in the future. If my grandson has children, I will become the great grandfather of his children. This can happen even after my death. I will acquire a new relationship with a future entity.

Prof. CIRO DE FLORIO — Università Cattolica di Sacro Cuore, Sede di Milano, Facoltà di Lettere e Filosofia, Dipartimento di Filosofia; adres do korespondencji — e-mail: ciro.deflorio@unicatt.it. ORCID: https://orcid.org/0000-0002-5503-7463.

Prof. ALDO FRIGERIO — Università Cattolica di Sacro Cuore, Sede di Milano, Facoltà di Scienze Linguistiche e Letterature Straniere, Dipartimento di Filosofia; adres do korespondencji — e-mail: aldo.frigerio@unicatt.it. ORCID: https://orcid.org/0000-0003-4698-2110.

In the same way, we can think that future truth makers make true past sentences.[1] This determination is akin to that of my great grandson, who, when he is born, makes me a great grandfather.[2] Since this determination is not troublesome, it also should not be so in the case of the past sentences that concern contingent futures.

However, things are significantly different in the case of divine beliefs. In this case, if we want to advance the backwards solution, we should say that past divine beliefs are determined by future states of affairs[3]. The view according to which past divine beliefs are determined by contingent futures has been quite successful in contemporary analytic theology. This view is called *Ockhamism* because, at least according to some interpretations, William of Ockham would have advanced a similar position. One of the most influential advocates of Ockhamism is Alvin Plantinga (cf. PLANTINGA 1986).

Elsewhere, we have shown that this view has quite high costs (cf. DE FLORIO & FRIGERIO 2016): in particular, it seems much more demanding to state that past divine beliefs are affected by future states of affairs than to state that the truth of a past sentence can be dependent on what will happen in the future. In the first case, we have to permit a sort of backward causation, whereas in the second case it is sufficient to admit that there are relationships between a sentence and future states of affairs. In other terms, if we allow the existence of cross-temporal relations, we can admit that the propositions become true in virtue of a kind of relation of correspondence with future states of affairs.

Given the cost of the Ockhamist proposal, it is worth evaluating alternative solutions. One of them is the Eternalist solution, which will be considered in this paper. The structure of this essay is the following. In section 1,

[1] If you are convinced that future truth makers already exist — for instance, because you accept a B-theory of time or an A-theory, such as the spotlight view, that acknowledges the existence of future entities — then they *already* determine the truth of past sentences.

[2] Also in this case, the details depend on the metaphysical theory of time that is accepted. If a B-theory or the spotlight theory is taken on board, then it is a timeless truth concerning the block universe that I am the great grandfather of a certain individual. By contrast, if we accept a dynamic theory of time, it is more natural to say that I can become a great grandfather after my death and that the birth of a certain individual changes my relationships with him.

[3] We do not therefore believe that Tkaczyk (this volume) is correct when he writes "one can ascribe foreknowledge to God without a contradiction if and only if one also concedes him the ability to elicit effects in the past" (p. 28). God need not affect the past to have foreknowledge of the future. On the contrary, His past belief that φ obtains in the future must be determined by the future state of affairs that φ. Thus, future contingents, and not God, must have the ability to elicit effects in the past.

the Eternalist solution is illustrated and the advantages with respect to Ockhamism are pointed out. In section 2, some critical aspects of Eternalism are emphasized. In particular, it is shown that it seems incompatible with an A-theory of time and it is disputable if within it there could be a sufficiently robust conception of freedom. Section 3 demonstrates that Fragmentalism, a non-standard A-theory of time, if combined with Eternalism, solves the difficulties of this view. Section 4 provides a sketch of the formal framework which characterizes the main intuitions of our view. Section 5 concludes the paper.

1. ETERNALISM

There are two different possibilities of conceiving the relationship between God and time. On one hand, God is lord and master of time: He lives in the eternity (*Interminabilis vitae tota simul et perfecta possessio*); from the other hand, the Revelation of God seems to entail a relationship with the history, and therefore, with time. Supposing that to be located in time is a primitive notion, the question is: does God have a temporal location? Or, better, are there some temporally located aspects of God? For our purposes, we are focusing just on God's epistemic status. Therefore, the question becomes: are God's beliefs temporally indexed? Does it make sense to state: «God knew on 23rd March 344 BC that Emma would have a beer 2365 years later»? Some scholars think not only that this is meaningful but also that it is a faithful picture of reality. However, not everybody agrees. Other scholars believe that God cannot have a temporal collocation and that, therefore, God is out of time. Accordingly, God's beliefs have no temporal collocation either, and propositions such as «God knew on 23rd March 344 BC that Emma would have had a beer 2366 years later» do not have any sense. Rather, we should say: «God a-temporally knows that Emma has a beer on 23rd March 2022».[4]

The debate on these two conceptions of the relationship between God and time is intricate, and we do not take any stance on it here.[5] However, there is a point on which the tenseless conception of God seems to surpass its rival: it can account for the compatibility between divine foreknowledge and contingent futures in a better way. We will assume as an example of contingent future Emma's free choice of drinking a beer on 23rd March 2022. As we have seen, if we assume that God is a temporal entity and that His beliefs are

[4] For these two opposite views see, for instance, CRAIG 2001 and HELM 2011.
[5] To get a taste of this debate, see the essays in TAPP & RUNGGALDIER 2011.

indexed at times, then we have to allow a sort of backwards causation: Emma's future choice determines the past divine belief that Emma would drink a beer on 23rd March 2022. However, if God is conceived as tenseless, we need not postulate a backwards causation. God's beliefs are not indexed at times, and Emma's free choice does not determine something that is previous in the temporal series. Assuming the timeless view, Boethius argues[6] that God, being out of time, has no special relationship with any time, as human beings have, but that He has the same relationship with every time. It follows that it is improper to speak of divine *foreknowledge* because foreknowledge implies temporality; instead, God tenselessly *knows* what happens in the temporal series and thus all human choices. If we concede that God's atemporal knowledge of human choices depends on human choices themselves and not *vice versa*, it follows that God has atemporal knowledge of all human choices without determining them.

To illustrate, Boethius uses[7] the metaphor of a circle with a point at its center. The circle represents the succession of temporal moments, while the central point represents the divine point of view on the temporal series. Although the temporal moments have different relationships with each other (e.g., they are more or less distant from each other), the central point is at the same distance from every temporal moment, so that none of them is privileged. Consequently, divine knowledge of the future is not foreknowledge in the genuine sense. God does not know what an agent will do before she acts because God's relationship with the future is the same as His relationship with the present and the past. God simply sees what the agent does at a certain time, but this knowledge of the agent's choice does not imply that the agent is not free when she acts. God would be co-present with every time: if at time t, I see that Emma is drinking a beer at t, I know at t that Emma drinks a beer at t. However, this knowledge does not damage Emma's freedom. In this respect, the knowledge of a tenseless God is similar. Since He is co-present with every time, He simply sees what happens at every time and, thus, He knows what happens at those times. However, this knowledge does not damage human freedom because it is a *consequence* of God's presence at every time.

[6] BOETHIUS, *The Consolation of Philosophy*, V, 3.
[7] BOETHIUS, *The Consolation of Philosophy*, IV, 6.

2. DOES ETERNALISM REALLY SOLVE THE PROBLEM?

Alvin Plantinga and Linda Zagzebski[8] put into question that the prospects of the Eternalist are really better than those of the Temporalist as far as the compatibility between divine foreknowledge and future contingents is concerned. We can sum up their argument as follows: if God atemporally knows that Emma drinks a beer on 23rd March 2022, it is eternally true that Emma drinks a beer on 23rd March 2022. It follows that on 28th August 2018 it is eternally true that Emma drinks a beer on 23rd March 2022. However, if on 28th August 2018 it is eternally true that Emma drinks a beer on 23rd March 2022, it seems that on 28th August 2018 Emma cannot help but to drink a beer on 23rd March 2022. In other words, eternal truths are not different from past truths because, being eternal, they are true also in the past. If God is co-present with every time, then His beliefs are co-present with every time and, therefore, His belief that Emma drinks a beer on 23rd March 2022 is co-present with 28th August 2018. But, as God is infallible, the following principle is valid:

Infallibility: $\mathbf{B}(g, \varphi) \rightarrow \varphi$

where g is an individual constant that refers to God and φ is a variable for propositions. In words: if God believes some proposition, then that proposition is true. Because the divine belief that Emma drinks a beer on 23rd March 2022 is co-present with 28th August 2018, is also co-present the truth of the proposition that she drinks a beer on that day is co-present with 28th August 2018. Therefore, this proposition is already true on 28th August 2018. However, if it is already true today that Emma will drink a beer, how can Emma be free to do otherwise? If Emma cannot do otherwise, she is not free to drink a beer on 23rd March 2022. Her future is already decided. It seems that we have gained nothing by postulating a tenseless God: His beliefs and the truth of the propositions He believes are co-present with the past and, thus, the antinomy is not solved.

The Eternalist solution has another problem of more metaphysical flavor. Because God sees all times as they were present, this entails that "our" present is merely subjective. If God sees the whole temporal series, then this series exists timelessly.[9] Our point of view on the world is partial because

[8] Cf. PLANTINGA 1986 and ZAGZEBSKI 1991.

[9] As put by Craig: "The entire temporal series would seem to exist timelessly, on the analogy of a spatial extension, and as such is known by God." (CRAIG 1988, 117).

we see only a part of the temporal series. In other words, such a conception of divine knowledge seems to imply a B-theory of time, according to which the concepts of present, past, and future are derived and the fundamental temporal relations are those of "before" and "after."[10] This has two consequences, Firstly, a timeless conception of divine beliefs seems to entail a particular metaphysics of time that denies the objectivity of the present and the flow of time. It is not our aim here to rebut this theory of time. However, we underline the cost of this theory, if this implication is true. Secondly, although it is not impossible to advance a libertarian conception of freedom within a B-theory,[11] it is beyond doubt that an A-theory of time is more in tune with such a conception of freedom. Indeed, the libertarian B-theorist must deal with the following objection: if the future already exists and if the choices of the future agents are already given, how can the human agents act differently from how they will act? By contrast, an A-theory of time is more closely in line with the idea of an open and indeterminate future and with a strong idea of freedom.

Does a timeless God necessarily imply a B-theory of time? At first glance, the response seems to be positive[12]. In this context, the following problem arises: can a timeless God know what time it is? Norman Kretzmann (1966) suggests the following argument in favor of a negative answer to this question:

1. An omniscient entity knows what time it is [premise]
2. An entity that knows what time it is is subject to change [premise]
3. An omniscient entity is subject to change [1,2]
4. An entity that is subject to change is not timeless [premise]
5. An omniscient entity is not timeless [3,4]

If we assume a B-theory of time, the present is a subjective feature of reality. By consequence, we can deny premise 1. An omniscient God needs to know only the objective aspects of the world, not the subjective perspectives.[13]

[10] Katherin Rogers (ROGERS 2007a and ROGERS 2007b) has shown the deep consonance between a timeless divine knowledge and the B-theory of time.

[11] Cf., for example, OAKLANDER 1998.

[12] We have argued in detail in favor of this implication in FINE 2005.

[13] We can compare the temporal case with the spatial case. A spaceless and omniscient God must know that it rains in London, but He need not know that it rains *here*. The particular perspective on the world descending from the fact that we are located at a particular spatial point is a subjective aspect of the world, and an omniscient being need not know it. Similarly, a timeless and omniscient God need not know the particular perspective on the world descending from the fact of being located at a particular point of the temporal series, if the present is a subjective aspect of reality.

By contrast, if we assume an A-theory of time, then the present is an objective feature of reality. So, an omniscient being must know it. However, the present changes, and a timeless God cannot "follow" this change without changing Himself. But, if He changes, He is not timeless. Thus, if the A-theory of time is true, God cannot be both omniscient and timeless. Since He is omniscient, He is temporal. Kretzmann uses a metaphor to illustrate this situation:

> According to this familiar account of omniscience, the knowledge an omniscient being has of the entire scheme of contingent events is in many relevant respects exactly like the knowledge you might have of a movie you had written, directed, produced, starred in, and seen a thousand times. You would know its every scene in flawless detail, and you would have the length of each scene and the sequence of scenes perfectly in mind. You would know, too, that a clock pictured in the first scene shows the time to be 3:45, and that a clock pictured in the fourth scene shows 4:30, and so on. Suppose, however, that your movie is being shown in a distant theater today. You know the movie immeasurably better than do the people in the theater who are now seeing it for the first time, but they know one big thing about it you don't know, namely, what is now going on on the screen. (KRETZMANN 1966, 414).

It is worthwhile to repeat that this kind of argument is valid only if an A-theory of time is accepted. In that case, "what is now going on on the screen" is an objective feature of reality and, thus, if it is not known, omniscience is lost. However, if a B-theory of time is accepted, being present is a *merely* indexical property: every time is present to itself. In this case, a timeless God need not know this aspect of reality, and it is sufficient to know every detail of "the sequence of scenes" to be omniscient.

The advocates of the A-theory of time have advanced good reasons to defend their metaphysical views. If one is convinced that the B-theory is not a good description of the temporal dimension, and if one thinks, on the other hand, that Eternalism is a good way to approach the problem of the divine foreknowledge of future contingents, then it is necessary to respond to the objections advanced in this section and to find an account able to keep together these two dimensions of reality. It is a further question to investigate whether there are other reasons — connected to a theistic image of the world — to accept or refuse the B-theory of time. Opinions on this matter diverge. Katherine Rogers believes that a B-theory of time raises no issue for the theist; on the contrary, Mullins (2016) believes that Revelation and Incarnation do presuppose both a temporal (and therefore not eternalist) conception of God and a dynamic theory of time.

Be that as it may, in the next section we will inquire into the question of whether it is possible to hold together a tenseless and immutable God and a tensed world.

3. FRAGMENTALISM

If we remain within a standard A-theory of time, the arguments of the previous section probably cannot be overcome. However, things are different if we consider non-standard A-theories of time such as Kit Fine's Fragmentalism.[14] On this view, reality is not coherent but rather consists of fragments that are coherent within themselves but incoherent among them[15]. Every fragment has a present time and contains tensed facts, but the fragments contain different tensed facts and the present is not the same in every fragment: it changes from fragment to fragment. The present is a privileged time over the others in any fragment, but there is no absolute present in reality: one instant is privileged only with respect to a fragment because, if an instant is present in a fragment, it is not present in the other fragments. In addition, the fragments are all on par, and no fragment is privileged over the others.

We believe that if we accept Fragmentalism, or at least some aspects of it, then the compatibility between an omniscient and atemporal God and an A-world becomes possible. In fact, a crucial difference between Fragmentalism and the standard A-theory of time is that Fragmentalism does not possess some basic features that characterize this metaphysics of time. Firstly, according to Fragmentalism, the present is not absolute but is relative to the

[14] Cf. FINE 2005 and FINE 2006. We have argued for the compatibility of a tenseless and omniscient God with Fragmentalism in DE FLORIO & FRIGERIO 2017 and DE FLORIO, FRIGERIO & GIORDANI (submitted). Consider that here we are just drawing upon Fine's view without pretending to be faithful to all its theoretical details.

[15] On Fine's view, Fragmentalism is the only possible realism in relation to tensed facts. The argument of J. Ellis McTaggart (cf. MCTAGGART 1908) against the reality of time has four premises: 1) there are tensed facts; 2) no time is privileged over the other times; 3) the constitution of reality is absolute and not relative to time or temporal perspectives; 4) reality is coherent. These four premises lead to a contradiction. The standard answer of the realist about tensed facts is to reject premise 2) by stating that the present is a privileged time over the others. The problem of this response is that every time becomes present sooner or later, and from this point of view, none is privileged. If one retorts that the instants are not privileged *at the same time*, but *one by one*, then McTaggart answers that this rebuttal presupposes the existence of a hyper-time for which the same problem arises again. Fine, therefore, prefers to accept a non-standard form of realism of tense and rejects premise 4).

various fragments, so no fragment is privileged over the others. Second, in this view, the present is no dynamic property: there is no property in virtue of which a fragment is first privileged and then no longer privileged.[16] Nevertheless, Fragmentalism can be still considered an A-theory of time, because it admits objective present facts (not just indexically tensed facts). So, let us suppose that Fragmentalism is the correct view about time. Then, a timeless God can be omniscient, since He can retain a constant epistemic relationship with all the fragments, thus knowing all the propositions that are true in them, including propositions such as «it rains *now*», which can be true at the present time of each fragment. The crucial fact is that the present is fixed in every fragment, so God can eternally know what is presently true at that instant.

It is worth noting that we are not implying that Fragmentalism is the correct metaphysics of time. Our thesis is only conditional: *if* Fragmentalism is the correct view, then the existence of a timeless omniscient being is compatible with a tensed world. However, we believe that it is worth considering this metaphysical option because not only does it solve the problem of the compatibility of a timeless God with an A-theory of time, it also solves the first problem mentioned in the previous section. Recall that the Eternalist view seems to imply that it was already true yesterday that Emma will drink a beer tomorrow and that, therefore, it does not refute the antinomy of contingent futures. However, according to Fragmentalism, *every* fragment of reality has its own tensed truths. Such tensed truths change from fragment to fragment, and there is no coherence between the tensed truths of a fragment and the tensed truths of another fragment. To be sure, every fragment is coherent in itself, but there is no coherence among the fragments (indeed, the fundamental thesis of Fragmentalism is that reality is incoherent). By consequence, within a fragment, the truth of «On 23rd March 2022 Emma drinks a beer» can be indeterminate because this is a contingent future with respect to the present time of that fragment. We can suppose that this proposition has no truth value in that fragment.[17] In the fragment in which the present is 24th March 2022, however, the proposition that Emma

[16] One might state that Fragmentalism is a dynamic framework in another sense. Fragments can be ordered on the basis of their privileged instants, and thus, a sequence of fragments can be reconstructed. In this paper, we will not tackle the question of whether this is a true dynamics. We just assume the order of the fragments.

[17] Fine does not take any stance concerning the truth of the propositions regarding future contingents within a single fragment. We believe that his position is compatible both with the view that these propositions lack a truth value and with the view that they have a truth value. Since we assume a libertarian framework, we hold that it is more plausible to consider them devoid of a truth value.

drinks a beer on 23rd March 2022 has a definite truth value. So, the same proposition lacks a truth value in a fragment but has one in another. The same remarks apply to the proposition that Emma will drink a beer tomorrow, evaluated in a fragment in which the present is 22nd March 2022 and the proposition that Emma drank a beer yesterday evaluated in a fragment in which the present is 24th March 2022.

The truth values of a fragment cannot be "exported" to another fragment because this would give rise to a contradiction. Therefore, even though God is timeless and knows the truth value of every proposition in every fragment, we cannot state that what is true at a certain time is true at every other time. This can be done if we assume a B-theory or a standard A-theory of time, but not if we assume Fragmentalism. In the last case, what is true in a fragment cannot be true in the other fragments, even if God is co-present with every fragment. In particular, we cannot say that what is true in the fragment in which the present is 22nd March 2022 is also true in the fragment in which the present is 24th March 2022. This would entail that the proposition that Emma drinks a beer on 23rd March 2022 both lacks and does not lack a truth value *within the same fragment*, which is unacceptable even in a non-standard A-theory of time. The truth values of the propositions are always relative to a single fragment and are "sealed" in it. The proposition that Emma will drink a beer tomorrow lacks a truth value on 22nd March 2022, and what is true or false in other fragments has no impact on this one.

If the proposition that Emma will drink a beer tomorrow is really indeterminate in the fragment in which the present is 22nd March 2022, Emma is free to drink or not to drink a beer tomorrow. So, Emma's freedom is warranted. But God's omniscience is also warranted because God has access to every fragment. He knows that in the fragment in which the present is 22nd March 2022, Emma is free to drink or not to drink a beer on the following day, but He also knows that in the fragment in which the present is 24th March 2022, it is true that Emma drank a beer yesterday. Thus, He knows the result of Emma's decision. God has access to every true proposition, those concerning the results of human decisions included. There is nothing that God cannot know.

The combination of Fragmentalism and a timeless God is a promising way of solving the antinomy between an A-theory of time and divine foreknowledge. Of course, from a metaphysical point of view, the costs of this theory are very high. We will not hold that it is worth paying these costs. However, since this combination of options seems to solve the antinomy better than any other combination, it is worth at least exploring it.

In the next section, we will sketch a formal system in which the propositions are true with respect to a fragment and in which their truth value can change from fragment to fragment. We will show that in this system divine omniscience goes hand in hand with human freedom.

4 FORMAL FRAMEWORK: SOME HINTS

A Fragment can be formally characterized as a triple $\mathfrak{F} = (T, <, t)$ where T is a non-empty set of instants, $<$ is a relation defined on T and t is a privileged instant, the "now" of that fragment. Intuitively, the instants are possible instantaneous states of the world and $<$ is the relation of temporal precedence. This relation is therefore asymmetric and transitive and satisfies (at least) the conditions of *Backward Linearity* (*BL*) and *Historical Connectedness* (*HC*):

(BL) $\forall t, t_1, t_2 (t_1 < t \wedge t_2 < t) \Rightarrow (t_1 = t_2 \vee t_1 < t_2 \vee t_2 < t_1)$

In words, BL asserts that two instants of the past of t are either identical or ordered by $<$; this implies that, for every instant t, there is one and only one past history.

(HC) $\forall t_1 \forall t_2 \exists t (t \leq t_1 \wedge t \leq t_2)$

HC asserts that all the instants are connected in the past. The maximal subsets of instants ordered in T are referred to as *histories* – the possible courses of events in the world.

Ours is a propositional language that includes a possibly infinite set of propositional variables (Var), two temporal operators **P** and **F**, and a new predicate **N**, which describes the property of being present. We can define an evaluation function $V : Var \mapsto \wp(T)$ that maps every propositional letter p onto a set of instants at which p is true. For sake of simplicity, we shall indicate the evaluation with respect to a fragment as: $\mathfrak{F}_1, t \vDash p$ that is, in the fragment $\mathfrak{F}_1$ it is true at t that p. Conventionally, the index of the fragment is the index of the "now" in that very fragment.

The truth conditions are as follows:

$$\mathfrak{F}_i, t \vDash p \quad \Leftrightarrow \quad t \in V(p)$$
$$\mathfrak{F}_i, t \vDash \neg\varphi \quad \Leftrightarrow \quad \mathfrak{F}_i, t \nvDash \varphi$$
$$\mathfrak{F}_i, t \vDash \varphi \wedge \psi \quad \Leftrightarrow \quad \mathfrak{F}_i, t \vDash \varphi \text{ and } \mathfrak{F}_i, t \vDash \psi$$
$$\mathfrak{F}_i, t \vDash \mathbf{P}\varphi \quad \Leftrightarrow \quad \exists t' \, (t' < t \wedge \mathfrak{F}_i, t' \vDash \varphi)$$

The clauses for the future and for the present are more interesting:

$$\mathfrak{F}_i, t \vDash \mathbf{F}p \quad \Leftrightarrow \quad \forall h(t \in h(\exists t'(t' > t \wedge t' \in h \wedge \mathfrak{F}_i, t' \vDash p))$$
$$\mathfrak{F}_i, t \vDash \neg\mathbf{F}p \quad \Leftrightarrow \quad \forall h(t \in h(\neg\exists t'(t' > t \wedge t' \in h \wedge \mathfrak{F}_i, t' \vDash p))$$

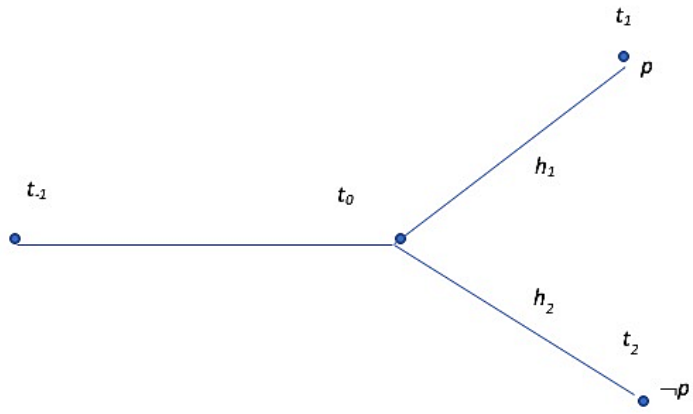
Indeterminate otherwise

$$\mathfrak{F}_i, t \vDash \mathbf{N}p \quad \Leftrightarrow \quad \mathfrak{F}_i, t_i \vDash p$$

The first clause states that the proposition $\mathbf{F}p$ is true iff for every history to which the evaluation time belongs there is a time subsequent to the evaluation time at which p is true. $\mathbf{F}p$ is false iff for every history to which the evaluation time belongs there is no time subsequent to the evaluation time at which p is true. In the other cases, $\mathbf{F}p$ is indeterminate[18].

The second clause states that the proposition «now p» is true at the evaluation time if it is true at the present time of the fragment.

It is not hard to notice that, in our framework, both $\mathbf{F}p$ and $\mathbf{F}\neg p$ are indeterminate in the situation illustrated in the following picture:



[18] This framework is inspired by the supervalutionist system of THOMASON 1970.

As there exists a history (h_2) in which p is false, it follows that $\mathfrak{F}_0, t_0 \nvDash \mathbf{F}p$; on the other hand, as there is a history (h_1) in which p is true, it follows that $\mathfrak{F}_0, t_0 \nvDash \neg\mathbf{F}p$. So, $\mathbf{F}p$ is neither true nor false. Analogous remarks apply to $\mathbf{F}\neg p$. Hence, neither p nor $\neg p$ is true or false with respect to the future, but this does not hold with respect to the present and the past. As there is only one present and past history, being true with respect to that history coincides with being true *tout court*.

This indeterminacy of truth values guarantees the freedom of human agents. The following condition is in order:

$$\mathfrak{F}_i, t \vDash Free(a, \varphi) \Rightarrow \mathfrak{F}_i, t \nvDash \mathbf{F}\varphi \text{ and } \mathfrak{F}_i, t \nvDash \mathbf{F}\neg\varphi$$

In words, the agent a is free with respect to the action φ in the fragment $\mathfrak{F}_i$ at time t only if it is indeterminate in the future of t whether φ or $\neg\varphi$. The openness of the future is a necessary condition for the libertarian freedom of the agents. Notice that this condition entails that we are never free with respect to the past because the past is always determined.

According to Fine's intuition, reality – as a whole – is constituted by all the fragments; while each fragment is internally consistent, the reality as a whole is incoherent. The class of the fragments can be ordered: $\mathfrak{F}_1, \mathfrak{F}_2, \mathfrak{F}_3, \ldots$; we suppose that God has an equal relation of epistemic accessibility to every fragment. Let us hypothesize that p means that Emma drinks a beer. Today, Emma is undecided whether to drink or not to drink a beer. But she is free to choose, since there is (at least) one course of the world in which she drinks a beer and (at least) one course of the world in which she does not drink a beer. So, $\mathfrak{F}_1, t_1 \nvDash \mathbf{F}p$, and $\mathfrak{F}_1, t_1 \nvDash \mathbf{F}\neg p$; consequently God knows that it is indeterminate, *in that fragment of reality*, what Emma is going to do in the future. Recall that any fragment has its own future and past facts: in the fragment under consideration, the future is really open.

Time flows and Emma decides to drink a beer; therefore, $\mathfrak{F}_2, t_2 \vDash p$ and $\mathfrak{F}_2, t_2 \nvDash \neg p$; consequently God knows that Emma chooses to drink. The point is that all the truth propositions in every fragment are equally known by God. Both Emma's freedom and divine omniscience are preserved.

5. CONCLUSION

In this paper, we have analyzed a number of solutions to the antinomy between divine foreknowledge and human freedom. If we assume that God is temporal, then a sort of backwards causation of past divine beliefs by future human acts must be acknowledged. Since this solution runs into difficulties, we have considered the prospects of the view according to which God is outside time. A timeless and omniscient God seems to imply a B-theory of time and, at least at first glance, seems to jeopardize human freedom. Therefore, we have examined what happens when a non-standard A-theory of time like Fragmentalism is assumed. We have demonstrated that in this case the prospects of a timeless view of God are much better: both human freedom and divine knowledge of the results of human choices are preserved if this metaphysics of time is accepted. The costs of this solution are, however, very high. From the logical point of view, it rejects bivalence; from the metaphysical point of view, the world is regarded as fragmentary and incoherent. But if one is ready to accept these costs, this solution is one of the most successful in the search for a solution to the centuries-old problem of the conciliation between divine foreknowledge and human freedom.

REFERENCES

CRAIG, William Lane. 1988. *The Problem of Divine Foreknowledge and Future Contingents from Aristotle to Suarez*. Leiden: Brill.

CRAIG, William Lane. 2001. *Time and Eternity: Exploring God's Relationship to Time*. Wheaton: Crossway Books

DE FLORIO, Ciro, & Aldo FRIGERIO. 2016. "The Costs of Ockhamism." *Axiomathes* 26, no. 4: 489–507. DOI: 10.1007/s10516-016-9298-y.

DE FLORIO, Ciro, & Aldo FRIGERIO. 2017. "A Note on Eternity." *Topoi*, 36, no. 4: 685–92. DOI: 10.1007/s11245-016-9376-1

DE FLORIO, Ciro, Aldo FRIGERIO & Alessandro GIORDANI. (submitted). "What God Cannot Know."

FINE, Kit. 2005. "Tense and Reality." In Kit FINE (ed.). *Modality and Tense: Philosophical Papers*, 261–320. Oxford University Press, Oxford.

FINE, Kit. 2006. "The Reality of Tense." *Synthese* 150, no. 3: 399–414. DOI: 10.1007/s11229-005-5515-8.

HELM, Paul. 2011. *Eternal God. A Study of God without Time*. Oxford: Oxford University Press.

KRETZMANN, Norman. 1966. "Omniscience and Immutability." *The Journal of Philosophy* 63, no. 14: 409–21. DOI: 10.2307/2023849.

MCTAGGART, J. Ellis. 1908. "The Unreality of Time." *Mind*, 17, no. 68: 457–73.

MULLINS, R.T. 2016. *The End of the Timeless God*. Oxford: Oxford University Press.

OAKLANDER, L. Nathan. 1998. "Freedom and the new theory of time." In Robin LE POIDEVIN (ed.). *Questions of Time and Tense*, 185–205. Oxford: Oxford University Press.

PLANTINGA, Alvin. 1986. "On Ockham's Way Out." *Faith and Philosophy*, 3, no. 3: 235–69. DOI: 10.5840/faithphil19863322.

ROGERS, Katherin. 2007a. "The Necessity of the Present and Anselm's Eternalist Response to the Problem of Theological Fatalism." *Religious Studies* 43: 25–47.

ROGERS, Katherin. 2007b. "Anselmian Eternalism: The Presence of a Timeless God." *Faith and Philosophy*, 24, no. 1: 3–27. DOI: 10.5840/faithphil200724134.

STUMP, Eleonore, and Norman KRETZMANN. 1981. "Eternity." *The Journal of Philosophy* 78, no. 8: 429–58. DOI: 10.2307/2026047.

TAPP, Christian, & Edmund RUNGGALDIER. 2011. *God, Eternity, and Time*. Farnham: Ashgate.

THOMASON, Richmond H. 1970. "Indeterminism and Truth Value Gaps." *Theoria*, 36, no. 3: 264–81. DOI: 10.1111/j.1755-2567.1970.tb00427.x.

ZAGZEBSKI, Linda. 1991. *The Dilemma of Freedom and Foreknowledge*. New York: Oxford University Press.

FRAGMENTED FUTURE CONTINGENTS AND OMNISCIENCE

Summary

In this paper, we have analyzed a number of solutions to the antinomy between divine foreknowledge and human freedom. If we assume that God is temporal, then a sort of backwards causation of past divine beliefs by future human acts must be acknowledged. Since this solution runs into difficulties, we consider the prospects of the view according to which God is outside time. A timeless and omniscient God seems to imply a B-theory of time and, at least at first glance, seems to jeopardize human freedom. Therefore, we have examined what happens when a non-standard A-theory of time like Fragmentalism is assumed. We demonstrate that in this case the prospects of a timeless view of God are much better: both human freedom and divine knowledge of the results of human choices are preserved if this metaphysics of time is adopted. The costs of this solution are, however, very high. From the logical point of view, it rejects bivalence; from the metaphysical point of view, the world is regarded as fragmentary and incoherent. However, if one is ready to accept these costs, this solution is one of the most successful in the search for a solution to the centuries-old problem of the conciliation between divine foreknowledge and human freedom.

FRAGMENTARYCZNE PRZYSZŁE ZDARZENIA PRZYGODNE I WSZECHWIEDZA

Streszczenie

W niniejszym artykule analizujemy kilka prób przezwyciężenia antynomii dotyczącej Bożej przedwiedzy i ludzkiej wolności. Jeżeli założymy, że Bóg istnieje w czasie, wówczas musimy przyjąć przyczynowanie wstecz. Ponieważ rozwiązanie to nastręcza wiele trudności, rozważyliśmy stanowisko, według którego Bóg istnieje poza czasem. Jeżeli do teorii, w której przyjmujemy, że Bóg, który istnieje poza czasem i jest wszechwiedzący zastosujemy B-teorię czasu, wówczas, przynajmniej na pierwszy rzut oka, wydaje się narażamy ludzką wolność. Stąd zbadaliśmy, co stanie

się w przypadku, gdy założymy niestandardową teorię czasu zwaną fragmentalizmem. Pokazaliśmy, że w tym przypadku możliwości przyjęcia koncepcji Boga, który istnieje poza czasem, są dużo bardziej obiecujące. Mamy tu zachowaną zarówno koncepcję ludzkiej wolności, jak i Bożą wszechwiedzę w stosunku do ludzkich wyborów, jeżeli zaakceptujemy tę metafizykę czasu. Koszt tego rozwiązania jest jednak bardzo wysoki. Z logicznego punktu widzenia mamy tu do czynienia z odrzuceniem zasady dwuwartościowości, z metafizycznego punktu widzenia natomiast rzeczywistość jest widziana fragmentarycznie oraz jest niespójna. Jeżeli natomiast ktoś jest gotowy na poniesienie takich kosztów, rozwiązanie to jest jednym z najbardziej obiecujących, jeśli chodzi o badania mające na celu poszukiwanie rozwiązań w stosunku do odwiecznego problemu pogodzenia Bożej przedwiedzy oraz ludzkiej wolności.

Słowa kluczowe: Boża przedwiedza; ludzka wolność; metafizyka czasy; fragmentalizm.
Key words: divine foreknowledge; human freedom; metaphysics of time; fragmentalism.

Information about Authors:
Prof. CIRO DE FLORIO — Catholic University of Sacred Heart, Milan Office, Faculty of Literature and Philosophy, Department of Philosophy; address for correspondence — e-mail: ciro. deflorio@unicatt.it. ORCID: https://orcid.org/0000-0002-5503-7463.
Prof. ALDO FRIGERIO — Catholic University of Sacred Heart, Milan Office, Faculty of Linguistics and Foreign Literature, Department of Philosophy; address for correspondence — e-mail: aldo.frigerio@unicatt.it. ORCID: https://orcid.org/0000-0003-4698-2110.

The preparation of the English version of *Roczniki Filozoficzne* (*Annals of Philosophy*) and its publication in electronic databases was financed under contract no. 753/P-DUN/2017 from the resources of the Minister of Science and Higher Education for the popularization of science.