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THE ANTINOMY OF FUTURE CONTINGENT EVENTS — A REBUTTAL

Academic custom dictates that scholars argue with each other, forging knowledge in strident debate. Before I meet this obligation, I want to thank everyone who agreed to discuss the theses presented in my book *Futura contingentia* and then again in my paper "The antinomy of future contingent events." Professors Aldo Figerio, Ciro de Florio, Paweł Garbacz, Jacek Juliusz Jadacki, Simo Knuuttila, Dariusz Łukasiewicz, William E. Mann, Timothy Pawl, Jacek Wojtysiak, and Jan Woleński, many of whom I consider my teachers in the deepest sense of the word, brought me not only pleasure but real honor. Though I am going to debate with them, I stress that their texts, above anything else, allowed me to learn a lot. I also thank the (previous and current) Editorial Committee for a distinct special volume of *Roczniki Filozoficzne* my work.

Instead of discussing every one of my interlocutors' texts separately, I will refer to the main theses and problems raised in the course of the debate. I apologize for not discussing each and every one of the remarks. The form of the volume, allowing the author of the discussed text the space for only a concise answer, does not allow a more detailed approach. To a significant degree the tone of my final piece has been determined by my interlocutors, since some questions clearly return — in different variants — within their texts. In addition to that, I want to say that I agree with many of their theses, either completely or with some reservations.

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OCKHAMISM AND MOLINISM

Some of my interlocutors identify me as an Ockhamist. That is my fault: I was not precise enough. Nonetheless, I want to explain that I am not and never was an Ockhamist — at least not intentionally. As aptly noted by Prof. Simo Knuuttila, there is a superficial similarity between my proposal and Ockham's theory as well as — in another respect — between my proposal and the theory of Duns Scotus. The essence of the proposed solution, however, is utterly different. I completely agree with Prof. Knuuttila that according to the Ockhamist thesis, the propositions in past tense which bring about the difficulty are only apparent (verbal) propositions about the past, while in fact are concerned with the future. I do not employ such assumption anywhere. The theory of soft facts mentioned by Prof. Jacek Wojtysiak constitutes a version of Ockhamism, but my own theory is completely different. Certain analogies between the two can be seen when it comes to the solution of the semantic version of the antinomy, but other versions, especially the theological one, show the immense difference between my proposal and Ockhamism.

Prof. Simo Knuuttila, apart from providing interesting historical information, raises the subject of Molinism — currently widely debated — with its conception of *scientia media*. I believe that Molinism is an attractive position with reference to the problem of future contingents, provided one does not see contingency to be a necessary condition for freedom. In such accounts, freedom consists of a given behavior's being able to be fully ascribed to the subject, even if the behavior in question has been enforced by the internal nature of the subject (such understanding of freedom was also mentioned by Prof. Jacek Juliusz Jadacki). However, if contingency, understood as being able to act and abstain from acting, belongs to the essence of freedom, Molinism should be ruled out.

SOFT AND HARD FACTS

My theory does not assume, and is not concerned with, the distinction between soft and hard facts. The distinction in question can possibly come in useful in some versions of the antinomy of future contingents, but it does not bring us closer to the global solution of the problem. In particular, I do not agree with the suggestion that God's foreknowledge can be treated as a soft

fact. In any case, foreknowledge, which concerns hard facts, is itself a hard fact. Foreknowledge which consists of changing the meaning of one's own earlier beliefs is not knowledge of any sort. When it comes to the question why foreknowledge is always inevitably a hard fact, I give the detailed answer in the section about eternalism, using the example with the prophet Daniel. I also find the remark of Prof. Dariusz Łukasiewicz that foreknowledge consists of the ability of receiving "signals" from the future very apt, just like the way in which Professors Ciro de Florio and Aldo Figerio describe exporting the logical values of propositions in time. The knowledge in question has therefore a receptive and contemplative character, and in that sense is the result of the events which constitute its object.

THE PROBLEM OF REPRESENTATION

Professors Paweł Garbacz and Timothy Pawl raised some issues connected to the conception of the representation of states of affairs which I proposed. In the case when states of affairs are represented by thoughts, it seems that the thought does not inherit modal properties of the represented state of affairs. For instance, my thought that the sum of internal angles in every triangle equals two square angles represents the state of affairs consisting of the sum of internal angles in every triangle being equal to two square angles. The difficulty raised by Professors Garbacz and Pawl consists of my thought's not sharing modal properties with the represented state of affairs. The state of affairs is in some sense necessary, since it belongs to the universe of mathematics, while my thought is contingent in the same sense.

In my original understanding, a state of affairs being represented by a thought does not — in this case — consist of the thought's itself being correspondingly necessary, contingent or impossible, but of the thoughts in question being a thought about a necessary, contingent or impossible state of affairs. In other words, we are here concerned with something which in German philosophy is known as intentionality. Just as in the case of existence, no one really knows what intentionality is, but the notion can be used in a more or less consistent way. Prof. Pawl has noticed that one can distinguish here between the existence of a thought and that thought's logical value, and that it is the logical value and not the existence of the thought that inherits modal properties of the represented state of affairs. This remark seems to me to be spot-on.

Thus, I understand the representation assumption with reference to a thought as an idealization: namely, at every time the content giving account of any state of affairs in any way potentially exists, i.e. there potentially exist different — faithful or unfaithful — fictional copies of the world. Their existence means no more than that I, being the subject of the thought, am able to hold a belief about any state of affairs at any time. In such a case, I can reflect any state of affairs in my mind (Aristotle would say: in the passive intellect).

At the same time, it should be remembered that I did not concentrate on states of affairs being represented by means of just any thought but by means of (fore)knowledge. Knowledge implies, among other things, the faithfulness (truthfulness) of the representation of a state of affairs. Thus, if I possess knowledge about a state of affairs x and that state of affairs is necessary, my knowledge is necessary in the sense that it has to represent x in the same way as that in which it exists. If the state of affairs x exists but is contingent, my knowledge is contingent in the sense that it could represent x in some other way while remaining the knowledge about that state of affairs. For instance, let us assume that the prophet Daniel has the knowledge that Jerusalem will be destroyed in over 500 years. As long as Jerusalem is there, Daniel's knowledge is contingent — in the sense, among other factors, that it could be different than it is, i.e. Daniel could have knowledge that Jerusalem will never be destroyed or that it will be destroyed before 500 years pass. However, when Titus destroyed Jerusalem, the fall of the Holy City became a determined event (necessary in the temporal sense). Daniel's knowledge also became necessary in the sense that it could not have the opposite content while remaining the knowledge about the destruction of Jerusalem. Every mental state which is the knowledge of those events has to be knowledge that Jerusalem fell.

In other words, knowledge can represent modal properties of states of affairs in the following way. If the fall of Jerusalem is a necessary state of affairs, it is necessary that every x who knows whether Jerusalem fell knows that Jerusalem fell. If the fall of Jerusalem is a contingent state of affairs, it is possible that some x who knows whether Jerusalem fell knows that Jerusalem fell and it is possible that some x who knows whether Jerusalem fell knows that Jerusalem did not fall. If the fall of Jerusalem is an impossible state of affairs, it is necessary that every x who knows whether Jerusalem fell knows that Jerusalem did not fall.

Generally speaking, I agree with my interlocutors that the notion of representation proposed by me is not precisely stated. To some degree that was my

goal, since I wanted to create a theory as universal as possible, applicable to different antinomies. erhaps I went too far in my attempt at generality. In particular, I have not provided an algorithm for constructing representations of any kind. I have to admit that I do not have such algorithm. On the other hand, it seems to me that in particular cases, it is perhaps relatively easy to find such a way of describing the antinomy that the representation assumption becomes distinct.

At the same time, I consider Prof. Garbacz's claim that by the same token it has been proven that my axiom (9) cannot express the assumption (3) — the numbers refer to my introductory paper in the same volume — to be premature. The only thing that has been established is that there is no uniform algorithm for identifying the relations of different theses formulated in the natural language to the axiom (9), since, if we investigate some propositions with respect to their formal scheme, we will notice that the same proposition of natural language allows for different qualifications. For some of them the proposition in question can fall under given formal scheme under which it does not fall on some other ones. Thus, we normally assume that it is enough to find one way of qualifying the starting proposition to acknowledge the relation of that proposition to the formal scheme. For instance, we ask if the proposition "Othello loves Desdemona" falls under the scheme "$P(a)$." A quick look may prompt us to give a negative answer, since the proposition contains two singular names "Othello" and "Desdemona" as well as the two-placed predicate "loves." This, however, is not the only legitimate analysis of the proposition. It would be equally correct to say that it contains one singular name "Othello" and one one-placed predicate "loves Desdemona," or that it contains one singular name "Desdemona" and one one-placed predicate "Othello loves." In both these accounts the proposition falls under the scheme "$P(a)$." In general, it is not enough to provide one analysis of the proposition of natural language to make a negative verdict about the formal scheme. At the same time, it is enough to provide one analysis of the proposition in the natural language to make a positive verdict about the same matter.

Prof. Garbacz develops one more line of argumentation in favor of the thesis that my axiom (9) cannot express thesis (3). He takes as his starting point that my theory is based on my axioms (7), (8) and (9) along with the definitions (whenever the numbers refer to my previous paper in this volume, I talk about my expressions, and whenever they refer to Prof. Garbacz's text from the same volume, I talk about his expressions). Next, he adds additional axioms, which he considers "acceptable" in the light of

(unspecified) "methodology of formal philosophy." As a result of adding those axioms, Prof. Garbacz obtains contradictory theories. In his opinion, that proves the faultiness of the starting theory based on my axioms (7), (8) and (9), and in particular of my axiom (9). I will attempt to show in a concise way that Prof. Garbacz is wrong.

The basis of Prof. Garbacz's argument is constituted by two pairs of additional axioms: his axioms (14) and (15), which express the linearity of the ordering of events with the relation of temporal priority, and his axioms (17) and (18), expressing the existence of the smallest and largest element of this ordering. Prof. Garbacz notices that adding one of those four axioms and certain additional assumptions to my axioms (7), (8) and (9) will result in a contradictory theory every time. According to Prof. Garbacz, his axioms (14), (15), (17) and (18) are in some sense "acceptable," so the axiom (9) is not "acceptable."

In my opinion, Prof. Garbacz is mistaken in thinking that his axioms (14), (15), (17) and (18) are "acceptable." I believe that those axioms of Prof. Garbacz are "unacceptable" in the precise sense—namely, they are false. That is because all four of them make use of the notion of global state of affairs (moment) and not local state of affairs (event). Prof. Garbacz assumes in his axioms (14) and (15) that states of affairs are linearly ordered by the temporal relation. Within my theory, that is impossible, since the representation assumption requires the existence of simultaneous but different states of affairs, in particular some physical state of affairs and a state of affairs simultaneous with it and representing some future event. For example, the state of affairs consisting of God's creating the world and the state of affairs consisting of God's knowing in advance that Adam will fall can be simultaneous even though they are intentionally treated as different states of affairs. Axioms (14) and (15) exclude that possibility. That is why the contradictions found by Prof. Garbacz testify in favor of my theory and not against it. An analogical error concerns Prof. Garbacz's axioms (17) and (18). The assumption that there is only one state of affairs first (or, respectively, last) in time is false in the model in which states of affairs are local. The first state of affairs—say, the creative act of God—is simultaneous with other states of affairs: for instance, with God's foreknowledge. Prof. Garbacz mistakenly combines two different types of the model of time: the model with global moments and the model with local moments. Within the latter both linear ordering and a single first or last event are excluded. While analyzing the problem of future contingents we need to make use of the eventual model just like in the special relativity theory. In such model, Prof.

Garbacz's axioms are false, and it can be seen at a glance that they contradict other assumptions.

Two auxiliary analyses by Prof. Garbacz do not change anything in this picture. Of course, small models with Prof. Garbacz's axioms (10) and (11) are not "acceptable," since they lack states of affairs for representing other states of affairs. However, weakening my axiom (4) to Prof. Garbacz's axiom (19) does not really constitute a weakening, since the axioms in question are inferentially equivalent to each other on the grounds of my theory thanks to the existence of the states of affairs representing any states of affairs being intentionally enforced.

I think that Prof. Garbacz did not prove that my axiom (9) is erroneous. Of course, I do not exclude the possibility that (9) or other axioms will turn out to be erroneous in the future. In my opinion, formalized theories of this type serve as explanatory hypotheses and are subject to regular testing. For the time being, Prof. Garbacz has verified rather than subverted my theory, since, according to the Popperian strategy, confirming a tested hypothesis in different contexts done with the intention to invalidate it makes for a strong confirmation of the hypothesis in question. Prof. Garbacz confirmed my theory in the sense that he repeatedly showed that it turns out to be contradictory when it should be contradictory.

Prof. Garbacz's further argument consists of an attempt at solving the problems he noticed and of the outcomes of the work of the machine for automated theorem proving. I will pass over this part of his argumentation for two reasons. First, the problems in question do not arise in my theory, being a challenge only for the theory of Prof. Garbacz. Second, Prof. Garbacz himself states that his attempts to solve them are not successful.

CAUSAL CONNECTIONS

It is not surprising that many voices in the debate concern the problem of how causal connections — especially retroactive causality — should be understood. The topic has been raised by Professors Jacek Juliusz Jadacki, Simo Knuuttila, Dariusz Łukasiewicz, Timothy Pawl, and Jacek Wojtysiak. It seems to me that a large part of the contention concerns terminological questions — especially in connection to the fact that in the relevant part of my argument I use the imprecise (but flexible) natural language, while my Adversaries strictly (though differently) define the notions they employ. The topic is so

complex and rich that I certainly will not be able to exhaust it. I apologize for leaving some questions open. Some day an opportunity may arise to recommence this interesting exchange.

Many of my interlocutors, especially Professors Jadacki and Pawl, raise the issue of the scope of the notion of cause with which I operate. Both of them suggest that in some parts of my argument the use of the term "cause" could (or should) be replaced with another term, e.g. "determination."

I have to explain that in the considerations discussed here I intentionally make use of the terms "cause" and "effect" in an unregulated way, close to the vague, colloquial way of using them (as pointed out by Prof. Mann, things look similar when it comes to the terms "state of affairs" and "event"). I decided to do that because the problem of future contingents is so multi-layered and has been discussed in so many contexts throughout history that it would be extremely difficult to take them all into consideration by means of terms made very precise definitions. When I was mapping out the material, I was under the impression that the essence of the problem could easily disappear among ongoing terminological distinctions.

I think that the degree to which the scope of the use of the terms "cause" and "effect" is narrowed is to a large extent a matter of terminological decision, i.e. definitions and other characteristics of the causal connection cited by my interlocutors are highly regulatory. Because of that, I ascribe to them the status of the proposal to make a terminological agreement and not of the coverage of the binding convention regulating their use. In my opinion, making our assessments of reasonings, including antinomies and their solutions, dependent on such proposals is quite hazardous.

Without any hope of exhausting this rich and difficult problem, I am going to give a concise account of two points: defining cause and effect by means of temporal notions.

I uphold my view that temporal relations normally do not belong to the definition of causal connection and I do not see a reason to change it by means of definitional agreements, i.e. I do not see the advantages that could bring. The custom of defining causal connection by means of the notion of succession in time originated (probably) in the thought of David Hume and is connected to the aversion towards ancient and medieval philosophy.

The purpose of my (debatable) examples of supposed retroactive causal connections is to show that succession in time is not necessarily (logically) connected to the way the relation between cause and effect is understood in the language of natural sciences, in the legal language etc. That cause always

precedes its effect in time is something we know from experience. Within the area of physics, the opposite state of affairs is (only theoretically) possible in the general theory of relativity, as shown by, among other things, the history of the laws of Novikov and Niven. If succession in time belonged to the notion of causal connection, analyses of this kind could not be conducted at all, and it cannot be ruled out that the general theory of relativity would have to involve a contradiction. Within the realm of language and culture, we can make decisions about that — namely, we can agree that a legal act, or some other performative act, changes the past (as I had proposed) or to make the opposite agreement (as proposed by Prof. Jadacki and usually practiced, in accordance with our physical experience). This, however, shows that there is nothing a priori impossible or illogical in retroactive causation. It is "just" utterly unprecedented within the physical world we encounter.

My view on the notion of cause and effect is as follows: the notion of cause and effect is originally connected with the personal experience of power, ability to act, as a result of which a particular state of affairs can principally be ascribed to a particular subject. The notion of physical — purely natural — cause arose by transferring that experience onto insensate objects and ascribing to them the actions consistent with their nature described by natural laws. It is from experience that I learn that I cannot act retroactively. Especially the physical impossibility of acting retroactively is connected to the limitations pertaining to sending physical signals connected to energy portions. Acting retroactively does not appear absurd but infeasible (for us, physical objects). Thus, there is nothing illogical, conceptually ruled out, in considering a subject free from this limitation.

My argument about the notion of cause makes use of a series of notions detested by Hume. I would venture a hypothesis that defining cause by means of temporal notions was meant to allow weeding these Platonic and Aristotelian — and especially scholastic — bad seeds out of the theory of causality. In my opinion, all attempts at defining cause in this way, by means of constant succession in time (characterized modally or not, counterfactual or not) fail. Literature knows many counterexamples for the definition of causal connection as constant succession in time — including the definitions proposed by my interlocutors — so I will not cite them here.

Professors Łukasiewicz, Mann, Pawl, and Woleński expressed doubt concerning whether non-determination, contingency or openness of the past requires retroactive causation. It probably depends on the understanding of the notion of cause and other — especially modal — notions, as pointed out by

Professors Jadacki and Woleński. It seems to me that, in spite of everything, on the initial, preexisting understanding of cause and effect the answer is affirmative. The openness of the past is connected to some, even limited, retroactive causality. This topic can be illustrated by the example of the prophet Daniel, which I am going to develop in the section devoted to eternalism.

One of Prof. Wojtysiak's suggestions is that allowing retroactive causality implies the acceptance of the plurality of pasts. I would say that retroactive causality implies the plurality of pasts no more than regular causality implies the plurality of futures. There simply are different ways of conceptualizing contingency (openness). The simplest and best known paradox speaking in favor of the plurality of pasts arises from the suggestion that, if I could act retroactively, I could kill my own grandfather before he marries my grandmother. As a consequence, I would have been born (since I killed my grandfather) and would not have been born (since my grandfather did not come to know my grandmother). But that is not the case. My having been born means that I did not kill my grandfather (or in any case I did not do that before I was born). I did not want to do that or I did not succeed—anyway, the probability that I killed my grandfather equals zero. There is no antinomy involved, and no plurality of futures comes as a consequence. Probabilistic models removing these apparent contradictions came into being already in the eighties of the 20th century. Considerations like those of Prof. Wojtysiak are based on the erroneous identification of retroactivity with the possibility of changing the course of events repeatedly. The possibility of retroactivity does not do away with the ontic order of events but only makes it the case that the order in question cannot be fully identified with the temporal order. The world just turns out to be more complex than it could seem.

Prof. Pawl asks a spot-on question: What is the reason for logical values in my solution of the semantic version of the antinomy of future contingents? I think that the cause is constituted jointly by (a) overt or implicit performative act of language users and (b) a particular state of affairs. By writing a will, we can bring on effects in the area of property. Analogically, we can agree that the proposition "there will be a sea battle tomorrow" is true if and only if there will be a sea battle tomorrow. If we do that, when the sea battle comes, our agreement will make the earlier proposition "there will be a sea battle tomorrow" true. The proposition in question is already true now, even though its truthfulness is an effect of the sea battle—which is going to take place tomorrow—on the grounds of the agreement or custom of language users.

Prof. Mann notes that potential examples of God's retroactive actions can be found within religion. I agree with his view. In my opinion, the prayer example is great. I even think that there are more such examples, which can also be found on the grounds of, so to speak, harder theology.

Generally speaking, I would say that the theory of causal connections is one of the least developed parts of contemporary philosophy: we only have — already insufficient — ancient and medieval analyses, followed by contemporary linguistic accounts burdened with Humean assumptions. In my assessment, neither solution is right. The discipline in question seems to me full of authentic lacunas and thus open to new creative investigations. Because of that, I do not consider statements within it, including my own, to be categoric.

The problem of understanding causal connections is directly related to another question most often raised by my Adversaries — namely, eternalism.

ETERNALISM

Professors Aldo Figerio, Ciro de Florio, Dariusz Łukasiewicz, William E. Mann, Timothy Pawl, and Jacek Wojtysiak invoke eternalism in different contexts as a possible solution of the antinomy of future contingents, sometimes suggesting that it is a competitor of my proposal. That is a misunderstanding.

Eternalism, probably the most popular way of dealing with the antinomy in question in the context of both theology and semantics, has many versions, which differ in details. My Adversaries gave an account of the selected versions of that theory, including important interpretations of Thomism, but I will not be able to address in detail all their interesting remarks.

Eternalism can generally be reduced to the thesis that problematic states of affairs are extratemporal. In particular, propositions are simply true or false, and not true or false at a particular time. Analogically, God simply knows all states of affairs in his atemporal eternity and not in a particular time. This thesis can sometimes be connected with subtle considerations concerning existence in atemporal eternity. The view that God lives in the eternal present has been formulated since the time of the Church Fathers. If God exists in this way, his whole being is given at the same time (*simul tota*). Such a way of thinking about truth and falsehood has been introduced

to philosophy by Bernard Bolzano to later be made popular by Alfred Tarski's semantic theory of truth. The notion of existence in extratemporal eternity derives from Plato's theory of forms, and ultimately even from Parmenides. This solution is popular or even prevalent — we can probably call it the default view about God's way of existing and about logical values. At the same time, it is not, and never has been, the only way of thinking about God or logical values. There are conceptions of eternity as the duration in the time known to us, without beginning or end, and as the duration outside of the time known to us but within some other time — God's own time.

On the grounds of theology, the proponents of eternalism are of the opinion that the problem of future contingent events arises only in relation to the subject existing in time — while from the perspective of the subject existing in atemporal eternity all states of affairs seem present. According to my interlocutors, within such conceptual framework the antinomy of future contingents does not arise, since it is not possible to say meaningfully that, for example, at the moment of the creation of the world God knew about the future fall of Adam. This is a typical attempt at removing the antinomy by limiting the set of meaningful expressions (just like the antinomies of set theory are removed in the theory of types). Thus, God knows (in his unchanging present time) about everything that happened, happens and will happen. However, his knowledge is not — as the proponents of such approach believe — foreknowledge in the sense accepted here, since God knows about every event at the moment it happens and not before. The knowledge in question, as it were, merges or connects to form a whole in God's eternal present.

Some of my interlocutors suggest that some form of eternalism (a) constitutes a good solution of the antinomy of future contingents, (b) competes with my proposal, (c) is a better solution than mine — at least in terms of simplicity and economy of the theory. That belief requires rectification and exact explanation.

I explain that eternalism is not a thesis which can compete with my proposal. In the writings I am discussing here I do not speak in favor of eternalism or against it. (Prof. Łukasiewicz has rightly reproached me for using the noun "stupidity" (2015, 412) in an unnecessary and inappropriate way. I will only explain — though it does not lessen my *faux pas* — that I did not apply that expression to eternalism but only to the thesis that eternalism alone is enough to remove the antinomy. May I be permitted to take that word back and replace it with the expression "untruth.") This means that

I neither state nor justify the thesis that God (or logical values) exist in extratemporal eternity, or any opposite thesis. What I state — and uphold — is that the eternalist thesis as such is irrelevant to the antinomy of future contingents, i.e. neither helps nor hinders removing the antinomy.

The theory of eternalism can provide a good solution if it contains as one of its elements either the thesis of universal determinism or my thesis of open past. If we accept one of these theses, the antinomy of future contingents can be removed no matter whether we ascribe to God existence in extratemporal eternity, existence in regular time, or existence in some special time of his own. If, however, both theses are rejected, the theory of eternalism does not provide a solution to the antinomy of future contingents — just like other accounts of God's way of existing.

Let us take a look at the claims of the proponents of eternalism. God exists in atemporal eternity and every state of affairs appears to him as present. For instance, God in his eternal present sees that in the year 70 Titus destroys Jerusalem. For the divine mind, this is the knowledge about a present state of affairs. Simultaneously, in the same present, God sees the prophet Daniel who five centuries later wonders over the time of the coming of Messiah. Since for God both events are present, God reveals to Daniel that the coming of Messiah is going to end with the destruction of Jerusalem by a mysterious leader after seventy seven year long periods of time. No matter what the proponents of various versions of eternalism and different conceptual variants of special divine simultaneity will say about God's way of existing, Daniel has the knowledge about the activity of Titus and a group of other people a half thousand years in advance. This knowledge of Daniel is an effect of, among other things, the destruction of Jerusalem by Titus. Let us express the dependency in question from the viewpoint of atemporal eternity: in the first year of the reign of the king Darius Daniel knows that Jerusalem will be destroyed, and knows it because, among other things, Titus destroys Jerusalem in the year 70 after Christ. This is an example of retroactivity, and the proponents of eternalism did not propose a way to avoid this consequence (I think that that is the answer to Prof. Pawl's doubts concerning retroactivity in the case of prophetism: the ability to act retroactively, essential to my proposal, belongs to God who shares his knowledge with the prophet, and not to the prophet himself).

I repeat that I do not reject the thesis about atemporal eternity or construct any theory which would compete with it (I also do not think that William Ockham rejected atemporal eternity with reference to God's exi-

stence, even though he rejected it with reference to logical values). What I am trying to do is to show that the conception of atemporal eternity — as we know independently, very useful in solving many problems — is irrelevant to the considerations on the antinomy of future contingents. The solutions of the problem of future contingent events proposed by eternalists — including my interlocutors — either are efficient but silently assume the thesis of open past, or lack efficiency.

DETERMINATION AND NECESSITY

Prof. Jan Woleński shows that the notion of necessity and possibility does not have to be defined by referring to temporal relations. With some minor reservations, I principally agree with his entire argument. It seems to me that the solution proposed by Prof. Woleński is local in the sense that it refers to one version of the antinomy of future contingents: in the version in question a special case of my notion of representation is logical dependency (logical implication of logical equivalence). Thus, what I call representation takes place solely in the area of metalogic. It seems to me that Prof. Woleński has shown that it is possible to construct and interpret such a theory of modality, especially logical modalities, in a consistent way. On such understanding of necessity and possibility the antinomy in the version of Diodorus Cronus does not arise. Such account, though correct, does not extend to all versions of the antinomy and to different ways of understanding modal terms — for instance, one can reconstruct the antinomy of determined and undetermined events. As noted by Prof. Woleński, the problem of the ambiguity of modal notions arises in any case, no matter whether the past is necessary or contingent *sub specie logicae* or in some other, especially causal sense. Łukasiewicz, at least in some texts, appeared to have in mind logical modalities, in which case the solution of Prof. Woleński should be applicable. Scholastics, on the other hand, in the same context had in mind causal necessity and possibility.

FRAGMENTALISM

In this context, Professors Aldo Figerio and Ciro de Florio develop an interesting solution by means of *fragmentalism*, according to which reality consists of fragments devoid of internal contradictions but is internally contra-

dictory as a whole. Such solution is very interesting and attractive, especially that many known antinomies arise when, this way or the other, we are concerned with the whole of reality. Fragmentalism is an atypical version of an A-theory of time in the sense of McTaggart. By the way, I need to note here that — as it seems to me — the choice of an A-theory or B-theory is irrelevant to my own account. The main problem I can see with reference to fragmentalism is that it assumes that reality (and thus the set of all true propositions) is contradictory. It seems to me that the reason why we remove antinomies (laboriously, as shown by our debate) is that we desire to avoid this disheartening thesis. If we agree in advance that reality is contradictory, it is difficult to give a reason for not simply accepting that God has foreknowledge while we have free will, end of story. Pseudo-Dionysius the Areopagite may have been right after all.

PHILOSOPHY AND ORTHODOXY

The problem of the acceptability of some theses on the grounds of Catholicism, Christianity, Judaism, Islam etc. returns in many debates — just like in the voices expressed in this volume. In the context of the work we are discussing we are mostly concerned with the acceptability of the thesis of God's universal foreknowledge (though analogical questions could equally arise with reference to the thesis of free will and of the existence of contingent events).

One needs to be conscious that every theory is based on some assumptions. With that in mind, let us ask whether the law of excluded middle is binding throughout reality, i.e. whether every proposition fulfilling the scheme "$(p \vee \neg p)$" is true. Many give the positive answer, even adding "obviously." Some others doubt it or even categorically defend the opposite thesis. Now let us ask whether the law of excluded middle is binding in the classical propositional calculus, i.e. whether the expression "$(p \vee \neg p)$" is a theorem of this theory. We answer that it is, and whoever says otherwise certainly errs. Whoever doubts that the law of excluded middle is binding, has the right to such doubt, but should accept its consequences — especially should not declare himself to be a proponent of the classical propositional calculus (unless he proves the erroneousness of the known proofs of the law of excluded middle on the grounds of that calculus). In my opinion this is required by methodics and — to use such daring expression — scientific

morality (I am not suggesting in the slightest that one of my current or earlier interlocutors violated methodics or morality, I am only trying to explain how I see the complex relations between different areas of knowledge).

Theology of every revealed religion is based, among other things, on the assumption that — at a particular place and time, once or many times, personally or via angels or prophets — God made himself partially known, revealing some, otherwise mysterious, information about himself. On the grounds of such theology such information has the status similar to that of the experiential data, and, to some degree, demarcate the border between the propositions considered to be true and those considered to be false. Truth and falsehood qualified in relation to the abovementioned act of revelation are called, correspondingly, orthodoxy and heresy. Particular religions ascribe different weight to this distinction and have at their disposal different (including the difference in exactness) means of distinguishing between orthodoxy and heresy. Nonetheless, I will venture the claim that every religion is based on such distinction.

The eminent mathematician and Jewish theologian, Prof. Israel Robert John Aumann from the Hebrew University, told me that Judaism is based on what one does rather than on what one believes (orthopraxy or even morality rather than orthodoxy). An analogical claim can be found in many works on Islam. Even in Christianity, unfortunately already divided into forty thousands of different denominations, it is increasingly difficult to determine the scope of the common foundation of orthodoxy. Nonetheless, I believe that the existence of orthodoxy and heresy on the one hand and their scope and importance on the other are two separate matters. As an analogy, it can be extremely difficult to establish which propositions are true and which are false, but that does not imply that there is no objective difference between truth and falsehood. As I found out numerous times, if an expert claims that in his religion there is no orthodoxy — no universally binding dogmas of faith — it is enough to give the right counterexample to show him that he is wrong. Let us stick to the example of Judaism. Someone may state that within Judaism there are no binding dogmas of faith, since, for instance, some scholars reject even the idea of the personal God, remaining — at least in their own opinion — adherents of Judaism. It is enough to ask them if one can remain an adherent of Judaism while believing that God is triune. According to me, this shows that in different religions, first, orthodoxy can be more or less defined or vague, and, second, there can, but does not have to, be some universal authority entitled to clarify what is orthodox. Nonetheless,

there has to be some orthodoxy in all revealed religions. What is debatable if not irreparably unclear is where exactly are its boundaries.

Now, let us ask if the thesis of divine foreknowledge belongs to the realm of orthodoxy. With reference to the Catholic religion, the answer is yes: the thesis in question is a dogma of faith, distinctly and repeatedly defined, and the theses which stand in opposition to it — even the weakest ones — have repeatedly been condemned as heresy by religious institutions entitled to settling such things. What is more, the institutions in question are entitled within Catholicism to making the ultimate verdict — and such is the verdict concerning foreknowledge. From the viewpoint of Catholic theology, the thesis that God has the knowledge about exactly all events, including future free acts of every subject, is a dogma of faith having the highest level of precision and certainty: *de fide divina et catholica definita.*

Let us consider the same problem in relation to Christianity in general and in relation to Judaism. Such considerations can be interesting also in connection to the Catholic religion, since it shows the reasons behind the abovementioned dogmatic declarations and the method of reaching such declarations.

Let us assume that adherents of some religion consider the events belonging to the set X to be a divine relation. Let us imagine that all the witnesses of the events from the set X, their disciples, the disciples of those disciples — and so on for forty generations — differing in views on many different matters, unanimously accept two theses: (a) the proposition φ is true; (b) the proposition φ has been revealed and it is a duty of every believer to assent to it. In such case, a good method will lead to acknowledging the proposition φ to be an element of the orthodoxy of that particular religion. An adherent of a revealed religion accepts particular truths of faith not because they appear to him to be obvious (it is often *au contraire*): the reason to accept the truths of faith is that they come, directly or indirectly, from God. Thus, from the viewpoint of a believer, accepting the truths of faith is in the deepest sense an act of obedience.

The situation described above concerns the thesis of God's universal foreknowledge on the grounds of Judaism and Christianity. What is more, in the 16th century Christians experienced a series of extremely deep divisions called Protestant Reformation. Representatives of different sections of Christianity held opposite views on many topics important to them. Moreover, to put it mildly, they did not burn with love towards each other. Nonetheless, they retained unanimity when it comes to foreknowledge.

Is it possible to come up with a theological theory in which foreknowledge will not be ascribed to God? As I repeatedly mentioned, I believe that it is. Can such theory be called Christian? In my opinion, it cannot. Such a theory should not be called Christian for the same reason that a logic without the law of excluded middle should not be called classical propositional calculus — and a goat should not be called a camel.

I stress that I do not advocate introducing the criterion of orthodoxy to philosophy. Pure metaphysics is not bound by the dogmas of any religion — but a metaphysics visibly contradicting the dogmas of Christian faith should not be called Christian.

I also do not believe that creating intermediate theories, called by some "moderate," is an efficient solution. A logic placed in the middle between the classical propositional calculus and the intuitionistic propositional calculus is neither the former nor the latter. It is similar with a theory positioned in the middle between Catholic theology and open theism. Such theory can come into being, and it can be very good. A philosopher — as such — can even accept it. Nonetheless, it will not be Catholic theology. To put it briefly, while I wholeheartedly support the peaceful coexistence of different religions, I also remain an opponent of conceptual chaos in every area of knowledge, including theology.

The fact that contemporary adherents of some religion debate about different topics does not have any bearing on orthodoxy. That is because, as I have already mentioned, the latter is determined by past events which constitute divine revelations and not by the worldview of current religious believers. One can jokingly say that in this respect the past is determined.

Translated by Sylwia Wilczewska

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THE ANTINOMY OF FUTURE CONTINGENT EVENTS — A REPLY

Summary

In this paper I account for some of the topics raised by the Authors of the papers included in the debate I focus mainly on the following topics: the concept of representation and reliability of my formal analysis of the future contingent antinomy, the concept of causation with an emphasis

put on backword causation, the idea of timeless eternity and the position of religious beliefs in philosophical theories. Furthermore I shortly address topics of Ockhamism, Molinism, soft and hard facts, fragmentism and the concept of necessity.

ANTYNOMIA PRZYSZŁYCH ZDARZEŃ PRZYGODNYCH — REPLIKA

Streszczenie

W artykule odnoszę się do wybranych uwag, zawartych w dyskusji nad moją wcześniejszą pracą, która otwiera niniejszy tom. Koncentruję się na następujących zagadnieniach: pojęcie reprezentacji stanu rzeczy, trafność mojej formalnej analizy antynomii przyszłych zdarzeń przygodnych, pojęcie przyczyny za szczególnym uwzględnieniem przyczyny działającej wstecz, koncepcja bezczasowej wieczności, relacja tez religijnych w teoriach filozoficznych. Ponadto odnoszę się krótko do zagadnień ockhamizmu, molinizmu, rozróżnienia miękkich i twardych faktów, fragmentalizmu i pojęcie konieczności.

Key words: time; cause; contingent; sea-battle tomorrow; foreknowledge; future contingents.

Słowa kluczowe: czas; przyczyna; przygodny; jutrzejsza bitwa morska; wiedza uprzednia; przyszłe zdarzenia przygodne.

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