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THE LOGICAL CHALLENGE OF NEGATIVE THEOLOGY

Abstract. In this paper I present four interpretations of so-called negative theology and provide a number of attempts to model this theory within a formal system. Unfortunately, all of them fail in some manner. Most of them are simply inconsistent, some contradict the usual religious praxis and discourse, and some do not correspond to the key theses of negative theology. I believe that this paper shows how challenging this theory is from a logical perspective.

Keywords: logic, negative theology, apophatic theology, negation, self-reference, paradoxes.

1. Introduction

The application of logic to the analysis of philosophical problems is rather uncontroversial and provides nowadays one of the commonly accepted ways of solving them. The case for utilizing such methods in the scope of theology is slightly different. It appears that modern theologians are very reluctant to use any contemporary logics in their works and – except for the very narrow field of analytic philosophy of God – it is a rarely seen paradigm. On the other hand, many scholars argue that theology is comparable with philosophy – at least with respect to their methods and status as academic disciplines. The consequence of this claim is that logical analysis in theological considerations could be performed analogously to those in philosophy.¹

Indeed, it is frequently emphasized that – despite the current state of affairs – the application of logic to theology has a long and rich tradition. It seems that in the Middle Ages this attitude was even mutually beneficial. It was often the case that some puzzling theological problem led to the development of a certain logical tool or even invention of a new

one. More recently logic was used most preferably in the formalization of Anselmian ontological argument for the existence of God. It is also worth mentioning that at the beginning of the 20th Century a group of Polish theologian-philosophers affiliated with the so-called Kraków Circle began a project of extensive utilizing of logic in theology. The members of that group used to claim that formal logical analyses are essential in order to modernize this discipline.² These attempts confirm that logic is applicable to theology.

In this paper, however, I will focus on a specific type of theology called negative or apophatic. It is a very peculiar kind of theological thinking, since it tries to describe God by negation, in terms of what may not be said about him. For the purpose of our future consideration it is reasonable to provide some definitions.

Definition 1.1. Apophatic theology is another name for “theology by way of negation,” according to which God is known by negating concepts that might be applied to him, stressing the inadequacy of human language and concepts used to describe God.³

Definition 1.2. Negative theology is a name given to a tradition within Christianity that confesses God to be so utterly transcendent, so beyond our concepts and names for God, that we must in fact “negate” them in order to free God from such cramped categories.⁴

Definition 1.3. Apophatic theology is the doctrine that no affirmative or *positive attributes of any kind* are predicable of God, that God is completely unknown and unknowable, that we can meaningfully say about God only *what He is not* (to speak of Him in *negative attributes*); the doctrine that man’s highest knowledge of God is to know that we are *unable to know Him*.⁵

In the western tradition apophatic theology was known also by the label of *via negativa* or *via negationis*. *Negativus*, as in the *via negativa*, is a Latin version of the Greek word ἀποφατικός that comes from ἀπόφασις – sometimes translated by “unsaying” or “denying”, but most often simply by “negation.”

Negative theology has always been underrepresented among theologians. Nevertheless, the group of those who adopted such doctrine consists of very important and influential thinkers. One can recognize the forerunners of this approach in Greek philosophy among Plato, Plotinus, and Proclus. Some apophatic ideas may be found in the writings of such Church Fathers as Origen, Cyril of Jerusalem, Cappadocian Fathers (Basil the Great, Gre-

gory the Theologian), John of Damascus, Maximus the Confessor or John Chrysostom. Full-blooded apophatic theologians include Clement of Alexandria, Gregory of Nyssa, Pseudo-Dionysius the Areopagite, Meister Eckhart, Nicholas of Cusa and last but not least Thomas Aquinas⁶. It is noteworthy that apophatic tradition is very strong among many modern theologians in Orthodox Christianity such as Vladimir Lossky, John Meyendorff, John S. Romanides or Georges Florovsky. It may be also found in Jewish tradition (Philo the Alexandrian, Bahya ibn Paquda, Moses Maimonides, Samuel ibn Tibbon), Islam (Ibn Arabi, Wasil ibn Ata, Avicbron), Buddhism and Hinduism.

Negative theology stands in contrast to “standard” theology, which in the context of this paper can be called “affirmative”, positive, or cataphatic. There are many discrepancies between them. Firstly, negative theology is more often (but not always) mystical, because its negations explicitly serve to allowing a unification with God. Secondly, it denies not only all assertions given by positive theology, but even – roughly speaking – denies its own denying, so at first glance it seems to be self-contradictory. To show how challenging it is from a logical perspective let me quote a passage from Pseudo-Dionysius.

It [the Cause of all beings] cannot be grasped by the understanding [...]. It is neither one nor oneness, divinity nor goodness. [...] It falls neither within the predicate of nonbeing nor of being. [...] There is no speaking of it, nor name nor knowledge of it.⁷

As Paweł Rojek⁸ points out, it seems that Dionysius rejects here not only the principles of positive theology, but also several basic principles of logic. First of all, since the Areopagite holds that God is neither being nor non being, he undermines the law of the excluded third. Obviously, this fact may be appreciated by the advocates of intuitionistic logic, but this is not the only logical law that he discards. Secondly, claiming that God is not divine he seems to deny the law of identity. Thirdly, he contradicts himself saying that there is no speaking of God, while doing so at the same time.

Indeed, it is not an exaggeration to say that negative theology seems to be the most illogical, inconsistent, unsound, and ambiguous theory of God ever made. For this reason one may argue that this kind of theology has no theoretical value – it is not a theory at all, but rather a report of mystical abandonment or a guide to encounter with transcendent God. In such cases, formal logic occurs to be useless in its clarification and any attempts to discover its logical structure shall end as failure. For example, Jan Woleński explicitly claims that

This [negative] theology says that we cannot say anything positive about God and His attributes. We should abstain from positive assertions and limit ourselves to statements like ‘I do not know what God is like or God is not...’. According to this kind of theology, the cognitive gap stemming from such assertions is sufficiently filled by belief as faith. If we believe, we do not need to be bothered by apparent inconsistencies in the body of theological statements. [...] Clearly, logic plays no essential role in negative theology, which is not particularly interested in arguments.⁹

In this paper I adopt a different view. I believe that negative theology can and demands to be investigated with the use of formal tools, and the outcome of such study can be fruitful and philosophically interesting. In order to demonstrate it, I will analyze four different interpretations of apophatic doctrine and the attempts to uncover the logical structure that lie underneath them.

2. Negative theology as theology of silence

One of the most popular interpretations of negative theology emphasizes the transcendence of God. It originates from the fact that for many apophatic theologians denials as much as assertions are inappropriate means for describing God. According to this reading God is so transcendent, so “beyond” our imperfect human concepts, that in fact we cannot attribute any of them to him. This statement has far-reaching consequences, because if we cannot ascribe any property to God, we should abandon speaking of him and remain silent.

It should be noted that emphasizing the transcendence of God is very common among theologians and philosophers of religion, for instance Rudolf Otto, Karl Barth or Karl Rahner. According to the former the experience underlying any religion is *numinous*. Deity is a *mysterium* (*fascinans* and *tremendum*). Or – in other words – “wholly Other” (*ganz Andere*), which means it is completely different from anything we can experience in our everyday life. Otto also indicates that the proper reaction that *numinous* evokes is silence¹⁰.

In the context of negative theology a similar idea is shared *inter alia* by Paul Rorem and John N. Jones. Both of them analyse the writings of Pseudo-Dionysius. Jones claims that the main task of the Areopagite is to circumscribe God from beings. Since God is not a particular being, he cannot be spoken of in the same way as we speak of any other thing. This is guaranteed by prohibiting the use of language that serves to speak

of beings, when one speaks theologically.¹¹ Similarly, Rorem argues that Dionysius denies all conceptual attributes of God to such an extent that he abandons any speech of him, even negations. “Negation is negated, and the human mind, befuddled, falls silent.”¹²

One may consider two reasons for this state of affairs. Firstly, it could be the limitations of our language and our finite mental capacities that make us unable to describe God correctly. Secondly, it may be grounded by God and his transcendence. It seems that the latter is the case (or – strictly speaking – both), at least within this interpretation of negative theology. It means that God is unspeakable, inexpressible, and ineffable by his nature. Therefore, the interpretation in question is sometimes called the “theory of the Unspeakable” or even the “theology of silence”.¹³

The theory of the Unspeakable is often accused of being self-contradictory. As Michel Durrant puts it:

On this account in saying that God’s nature is fundamentally inexpressible we have already described God’s nature – namely that it is fundamentally inexpressible. In other words those who advocate this position cannot do so without contradicting themselves.¹⁴

One of the philosophers who struggles with this problem is Peter Kügler.¹⁵ He recognizes the metaphor of “darkness” as fundamental in apophatic thinking. The literal basis of this metaphor is that God cannot be spoken of. Kügler tries to express it in semi-formal fashion as

(UNT) For all properties Q , God neither has nor does not have Q .

UNT stands for the “universal principle of negative theology”. Unhappily, this principle raises the same objection as mentioned in the quotation above. Since UNT is an expression utilizing universal quantification over the set of properties, it allows the instantiation of any property whatsoever. Consider the property B of being blue. Let us now formulate a more complex property of neither being nor not being blue and denote it by B^* . Now, we are forced to admit that God has property B^* , while – at the same time – according to UNT God neither has nor does not have B^* . Since this argument does not depend on what predicate is denoted by B and the principle can produce as many contradictions as there are properties, Kügler is inclined to replace UNT by

(ENT) There is no property Q such that either God has or does not have Q .

ENT is an abbreviation for “existential principle of negative theology”.

Before we go further, let us try to formulate these principles in a more formal manner. In order to do so we need to apply second-order logic. UNT should now take the form of

$$(UNT') \quad \forall_Q \neg(Q(g) \vee \neg Q(g)),$$

where Q is a symbol for predicate and g is an individual constant that denotes God. In this formulation the inconsistency is more apparent:¹⁶

- (1) $\forall_Q \neg(Q(g) \vee \neg Q(g))$ (UNT')
 - (2) $\neg(B(g) \vee \neg B(g))$ (1, \forall elim.)
 - (3) $\neg B(g) \wedge B(g)$ (2, De Morgan's law, $\neg\neg$ elim.)
 - (4) $B(g)$ (3, \wedge elim.)
 - (5) $\neg B(g)$ (3, \wedge elim.)
- contr.*

One crucial remark is in order here. There is an on-going controversy, whether “God” is a proper name or a description. If one is inclined to think that “God” is a name, he would formalize it using a constant as it is done in the example above. In the other case, the term “God” should be expressed by a predicate $G(x)$, which is understood as “ x is God,” “ x is a deity,” “ x is godlike,” “ x is divine,” *etc.* I personally think that the latter is more eligible. Within this framework UNT will look in the following way:

$$(UNT'') \quad G(x) \rightarrow \forall_Q \neg(Q(x) \vee \neg Q(x))$$

Nevertheless, in this particular case assuming that “God” is a predicate causes even more problems. The consequence UNT'' is the proposition that something is God, if it is not God:

- (6) $G(x) \rightarrow \forall_Q \neg(Q(x) \vee \neg Q(x))$ (UNT'')
- (7) $G(x) \rightarrow \neg(G(x) \vee \neg G(x))$ (6, \forall elim., hyp. syl.)
- (8) $G(x) \rightarrow \neg G(x) \wedge G(x)$ (7, De Morgan's law, $\neg\neg$ elim., hyp. syl.)
- (9) $G(x) \rightarrow \neg G(x)$ (8, \wedge elim.)

For this reason, I would rather formalize this principle with the use of an individual constant. On this account the corresponding formulation of ENT is

$$(ENT') \quad \neg\exists_Q (Q(g) \vee \neg Q(g)).$$

Note that ENT' takes the certain form of the negated law of the excluded middle. Taking this into account, we need to resign from classical logic, at least for two reasons. Firstly, in classical cases *tertium non datur* is valid. Secondly, in the context of classical logic, replacing UNT' by ENT' does not make sense, since these formulas are equivalent. K  gler is aware of this fact and suggests changing the logic of the discourse of negative theology to a non-classical one. Unfortunately, he does not propose any particular logic, which would constitute the most suitable framework for his considerations.¹⁷

The reason for replacing UNT by ENT was that the universal principle produces as many contradictions as there are properties. There is, however, one property that causes the same problem in the case of ENT, namely the (complex) property of being such that there is no property which applies or does not apply to God. Let us denote it by G^* . Again, we have to admit that God has property G^* , which in turn contradicts ENT. The strategy that K  gler adopts to deal with this problem is self-exclusion. The elimination of paradoxical self-reference is obtained simply by excluding the property G^* from the range of ENT. It is difficult not to accuse this manoeuvre of being an *ad hoc* solution.

Analogous objections concern the understanding of negative theology provided by Jerome I. Gellman¹⁸. Similarly to K  gler, he argues that on the ground of negative theology those who attribute to God any predicate whatsoever are categorically mistaken. In other words, on this theory, for any predicate Q , it cannot be predicated of God. It does not mean, however, that we can attribute to him negations of all predicates. To eliminate this possibility Gellman introduces the definition of *sortal range*.

Definition 2.1. The sortal range of a predicate Q is the domain of objects of which Q or $\neg Q$ can be significantly predicated.

Given this definition he formulates another version of the principle of negative theology:

(SNT) God is not in the sortal range of any of the predicates of our language.

The motivation that stands behind this thesis is obvious. It is meant to allow the denial that God has the property Q without thereby implying that he has $\neg Q$ and *vice versa*. According to Gellman, when an apophatic thinker says that God is, *e.g.*, omniscient, he just means that God does not have the property of being ignorant. Generally speaking, all assertions of religious language serve to deny of God all the properties they mention.

Formalization of SNT can be a little bit tricky, since it has some semantic component. Before I attempt to do this let me notice that its syntactic version would take the form of UNT'. Thus, all objections raised above are still the question here, *e.g.*, the problem of inconsistency. Similarly, if we want to avoid additional difficulties, we cannot represent the term "God" by the predicate $G(x)$, since – as stated by SNT – God is outside the sortal range of any predicate, G in particular. Finally, remaining on the semi-formal level we can obtain the same paradox of self-reference. Eventually, SNT is a statement about God expressed in a literal language. It says that God is not in the sortal range of any property whatsoever. Let B be such property. Now, consider the property of being outside the sortal range of property B and denote it by B^{**} . We are forced to say that God has the property B^{**} , while according to SNT he is not in its sortal range.

The semantic version of SNT also shares these difficulties. Let $M = \langle U, \Delta \rangle$ be an interpretation of a language, such as U is a non-empty set (our universum) and Δ is a function on the set of individual constants. For the purpose of our analysis let me just note that within an interpretation we identify properties with sets of objects in our universum that satisfy corresponding unary relation and for any individual constant a , $\Delta(a) \in U$. Let $\Delta(B)$ be the sets of objects that have property B . Obviously, $\Delta(B)$ is a subset of the universum U ($\Delta(B) \subset U$, in an extreme case $\Delta(B)$ can be empty). Now, observe that the set of objects that have property $\neg B$ is identified with the complement of $\Delta(B)$ ($\overline{\Delta(B)} = U - \Delta(B)$). Let SR_B stand for the sortal range of a predicate B . According to the definition,

$$(10) \quad SR_B = \Delta(B) \cup \overline{\Delta(B)}.$$

Now, we can formulate

$$(SNT') \quad \Delta(g) \notin SR_B = \Delta(B) \cup \overline{\Delta(B)} = U.$$

From the definition of the interpretation we know that $\Delta(g) \in U$. Hence, if we are inclined to maintain this understanding of negative theology, we need to move beyond the scope of classical logic again. Nevertheless, in this case we do not have many alternatives, since the metalogic of any logic is classical.

Jonathan D. Jacobs¹⁹ represents a slightly different approach to the problems of the theology of silence. He also admits that negative theologians take a strong view of God's ineffability, *i.e.* according to apophatic theology our imperfect language and finite concepts are not the reasons for God's ineffability. God is inexpressible "as He is in Himself", intrinsically.

To save negative theology from paradoxes Jacobs introduces a new modal operator \Box that can be applied to any proposition. $\Box A$ is read as “Fundamentally, A ” or even “ A carves nature at its joints”. Unfortunately, he is not explicit about how this operator works in the system. All we know is that negation does not distribute over \Box

$$(11) \quad \not\vdash \neg \Box A \rightarrow \Box \neg A$$

and that the operator is factive

$$(12) \quad \vdash \Box A \rightarrow A.$$

Jacobs distinguishes between *fundamental* truth ($\Box A$) and *derivative* truth ($A \wedge \neg \Box A$). Using this distinction he tries to formulate another version of the principle of negative theology. Let \mathcal{G} be the set of all true propositions about how God is intrinsically, then

$$(FNT) \quad \forall_{A \in \mathcal{G}} \neg \Box A \wedge \neg \Box \neg A.$$

The consequence of such a thesis is that there are no true fundamental propositions about how God is intrinsically, and all such propositions are merely derivative. If we limit our speech just to fundamental truth about God, we cannot say anything. Jacobs explains this condition by introducing the metaphor of “theology room”:

If the Ineffability Thesis [FNT – P. U.] is true, and we enter the theology room, we can do nothing but remain silent. We could say nothing whatsoever. If we wished to describe God in any way, as loving, merciful, long-suffering, we would have to leave the theology room.²⁰

Nevertheless, the problem of self-reference still remains. According to Jacobs, God is unspeakable in his nature, intrinsically. Hence, given the proposition “God is ineffable” is true, it is only derivative. If we limit ourselves to speak just the fundamental truths, we cannot hold FNT. We have to remain silent about the fact that God is inexpressible as well. Using Jacobs’ metaphor, to enter the theology room we have to stay outside.

An interesting and simple solution to these problems was given by Joseph M. Bocheński.²¹ He argues that the theory of Unspeakable can be saved from paradoxes, if usual conventions commonly accepted in logic are adhered to. Let $Un(x, l)$ stand for binary relation “ x is an unspeakable object in the language l ”. It is easy to find an object x and a language l that satisfies the formula

$$(13) \quad \exists_x \exists_l Un(x, l),$$

For instance, Nicolas Copernicus and the language of algebra or a cow and the language of chess. Hence, the formula is true and we can accept it without inconsistency. Now, consider the more general formula

$$(MNT) \quad \forall_l Un(g, l),$$

where g is an individual constant (and denotes God). This case is more serious, since we concede that g is unspeakable in all languages, which seems to evoke the paradox of self-reference. Nevertheless, we can avoid this by applying usual conventions established in order to eliminate semantic antinomies. It seems reasonable to admit that MNT is not formulated in any of languages l within the range of the universal quantifier it involves, but in their metalanguage. We can consider the domain of languages that are referred in MNT as the class of object languages and the language in which MNT is articulated as a first-grade metalanguage. This way we eliminate self-reference and contradiction. Even so, Bocheński still rejects the theory of the Unspeakable. Since we cannot ascribe to God any object-linguistic property, the theology of silence is not satisfactory for religious discourse in any way.

3. Negative theology as theological skepticism

Another interpretation of negative theology shifts emphasis from speech to thoughts and from language to knowledge. Its central claim is the thesis that God is utterly unknowable, inconceivable and incomprehensible (instead of unspeakable, inexpressible or ineffable). For this reason, this interpretation can be called the “theory of the Unknowable”. In the literature it can be also found under the label of “agnostic negative theology”²², but I prefer to call it “theological skepticism”, since it questions the possibility of acquiring any kind of knowledge about God. Of course, by skepticism I do not mean any form of disbelief or incredulity. Negative theologians who stressed the incomprehensibility of God were – as they seem – deeply believing religious thinkers.

Proponents of theological skepticism usually refer to the writings of Rambam, *i.e.* Moses Maimonides. This arguably most prominent Jewish philosopher is surely one of the best known negative theologians. According to Maimonides we cannot understand any concept when it is used to describe God. Any name given to him in the Bible, any predicate ascribed

to him is not used literally, metaphorically, or analogously, but equivocally. Since they are homonyms, we do not know what they really mean. In fact, we have to negate all of them to protect our unknowing mind from the dangerous fallacy of idolatry. But even negation “does not give knowledge in any respect of the true reality of the thing with regard to which the particular matter in question is negated”²³. Hence, God remains totally beyond our comprehension.

At first glance theological skepticism appears to be the same as (or very similar to) the theory of the Unspeakable. There are some reasons to believe that at least one of them implies the other. I argue, however, that they cannot be equivalent. First of all, the latter makes the discourse of religion meaningless, while the former does not. Taking the theory of the Unspeakable for granted, we cannot meaningfully say anything about God. We are not allowed either to affirm or deny any property of God. Within the theory of the Unknowable the discourse of religion has a meaning, yet limited. We can at least state what we do not know about Him. The second remark is more general and concerns the difference between knowledge and the use of language. It is not the goal of this article to clarify this distinction in detail. Nevertheless, it seems reasonable to claim that we can think and speak of things that we do not know on one hand and understand more than we can express in words on the other.

Such a distinction is consonant with many commentaries on Maimonides’ negative theology. For instance, Ehud Z. Benor²⁴ argues that the medieval philosopher rejects the thesis of ineffability, developing the theory of the Unknowable without its linguistic component. We would “underestimate the problem Maimonides faced if we locate it in the inability of language to express difficult metaphysical ideas”²⁵. Hilary Putnam articulates this idea in the following way:

[...] it is not just that one feels (if one is religious) that one cannot express properly what one *means* by using the words our language provides to describe God; it is that one feels one cannot *mean* what one should mean.²⁶

Despite all differences between the theology of silence and theological skepticism, they share the same burden of self-reference. The argument in favor of the inconsistency of the theory of the Unknowable expressed in ordinary language is roughly the following: the theory states that nothing can be known about God; thus, we know something about God, namely that He is unknowable; consequently, it entails contradiction.

To formulate the above argument in a more formal way it would be convenient to involve epistemic modal logic. It seems reasonable to accept

that according to this interpretation of negative theology all true propositions about God are unknown to us. Let again \mathcal{G} be the set of all true propositions about God, let K be the epistemic operator “it is known (by someone at some time) that,” then the epistemic principle of negative theology would be:

$$(KNT) \quad \forall_{A \in \mathcal{G}} \neg KA.^{27}$$

If we assume that \mathcal{G} is nonempty and $p \in \mathcal{G}$, we obtain

$$(14) \quad p \wedge \neg Kp.$$

This way we are approaching well-known epistemic paradoxes. Firstly, note that KNT entails the so-called Moore’s problem. Since it is not a paradox *sensu stricto* being rather an epistemic puzzle and requires first-person perspective in the interpretation of K , I will not discuss it in detail.²⁸ Secondly, KNT involves the Church-Fitch knowability paradox. Roughly speaking, the paradox says that if we know that p is a truth that is never known then it is unknowable that p is a truth that is never known.²⁹ To prove that we would need to assume two very modest epistemic principles:

$$(M) \quad K(A \wedge B) \rightarrow KA \wedge KB,$$

i.e. the distribution of knowledge over conjunction and

$$(T) \quad KA \rightarrow A,$$

i.e. that knowledge entails truth. These formulas are, respectively, theorem and axiom in the fundamental for modal logic system K . They are in accordance to the classical definition of knowledge as well. Having them at our disposal we can complete the proof³⁰:

- | | | |
|------|-------------------------------------|--------------------------------------|
| (15) | $K(A \wedge \neg KA)$ | (assumption, the consequence of KNT) |
| (16) | $KA \wedge K\neg KA$ | (15, M) |
| (17) | KA | (16, \wedge elem.) |
| (18) | $K\neg KA$ | ($- -$) |
| (19) | $\neg KA$ | (18, T) |
| (20) | $\neg K(A \wedge \neg KA)$ | (15, 17, 19, reductio ad absurdum) |
| (21) | $\neg \Diamond K(A \wedge \neg KA)$ | (20, necessitation) |

Finally, we can reduce the self-referential nature of KNT to the so-called knower’s paradox. It consists of the sentence

(k) (*k*) is unknown.

In order to show the self-reference of (k) assume first that (k) is known. Then – presuming that (T) is valid – (k) is true. But it says that (k) is unknown. Hence, (k) is unknown and we have proven that our first assumption is false. Then, taking for granted that the proven falsehood is known to be false, it is known that (k) is unknown, i.e. it is known that (k). This way we return to our first assumption and obtain a vicious circle.

To formalize theological skepticism Paweł Rojek³¹ adopts a considerably different formal system than epistemic modal logic. He utilizes the logic of indeterminacy developed by Russian logician, Alexander Zinov'ev³². This particular calculus was established for the purposes of philosophy of science to grasp the proper logical status of indeterminate propositions within scientific theories and reports of experiments.

Zinov'ev introduces two unary connectives that operate solely on the atomic formulas: \neg and $?$. These symbols are operators of negation and indeterminacy, respectively. Formula

$$\neg Q(a)$$

should be read as “*a* does not have the property *Q*,” “*a* is not such, that *Q*,” while

$$?Q(a)$$

means “it is impossible to establish whether or not object *a* has property *Q*”. This can happen, for instance, in the case of an object in change or an electron, whose position or momentum cannot be measured with sufficient accuracy. Of course, ordinary assertions, $Q(a)$, are also allowed.³³

Besides the concept of indeterminacy, Zinov'ev's logic involves also another notion of negation. It is called extrinsic, because – in contrast to intrinsic \neg – it operates on any formula, not necessarily the atomic one. Let \sim be the symbol for extrinsic negation, then it can be defined with the following assertions:

$$(Z1) \quad \sim Q(x) \equiv ?Q(x) \vee \neg Q(x),$$

$$(Z2) \quad \sim \neg Q(x) \equiv Q(x) \vee ?Q(x),$$

$$(Z3) \quad \sim ?Q(x) \equiv Q(x) \vee \neg Q(x).$$

From Z3 we can derive a definition for the symbol indeterminacy

$$(22) \quad ?Q(x) \equiv \sim Q(x) \wedge \sim \neg Q(x)$$

The “classical” case is defined with the fourth assertion

$$(Z4) \quad \sim?Q(x) \rightarrow (\sim Q(x) \equiv \neg Q(x)),$$

which means that if there is no indeterminacy, intrinsic and extrinsic negations are equivalent.³⁴

Rojek is inclined to consider this logic as underlying theological skepticism. The principle of negative theology explicated by him in the manner of Zinov’ev’s system looks as follows:

$$(ZNT) \quad G(x) \equiv \forall Q(P(Q) \rightarrow ?Q(x)).$$

The motivation for formulating such a thesis is obvious. Since God is unknowable, it is impossible to determine whether or not He has any property. Nevertheless, Rojek introduces one new condition here. The properties that cannot be determinated in the case of God should be primarily *positive*. Thus, the appropriate reading of ZNT is “ x is God iff for any property if it is positive, it cannot be stated whether x has or does not have it.”

From ZNT and (22) we obtain

$$(23) \quad G(x) \rightarrow \forall Q(P(Q) \rightarrow (\sim Q(x) \wedge \sim \neg Q(x)))$$

$$(24) \quad G(x) \rightarrow \forall Q(P(Q) \rightarrow \sim Q(x))$$

$$(25) \quad G(x) \rightarrow \forall Q(P(Q) \rightarrow \sim \neg Q(x))$$

According to Rojek’s formula, (24) corresponds to all denials present in negative theology, whereas (25) is analogous to some claims of apophatic theologians who seem to believe that God is *negatio negationis*, *i.e.* they deny also all denials about God. It contains some kind of double negation schema. Nonetheless, the first negation is extrinsic, while the second is intrinsic. Finally, formula (23) can be considered as a formal interpretation of the Dionysian claim that God is “beyond every assertion and every denial”.

This model, however, arouses a lot of objection. The first cause for concern is the condition imposed on the set of properties in ZNT. It involves the notion of positivity (of a property). Whereas, Rojek does not provide any satisfactory definition of being a positive property – and he does it deliberately! This is very surprising, since – according to him – “the difference between Positive and Negative Theology consists in predicating negative or positive properties of God”³⁵. As he points out, syntactic criterion is insufficient, because there are privations, *e.g.* blindness, that do not contain negation, yet seem to be negative properties at the same time. Bocheński³⁶ addresses this problem trying to define a positive property recursively:

1. A directly perceived property is a positive property.
 2. A property defined by a formula containing only symbols of positive properties and terms of a positive logic is a positive property.
- Nonetheless, Bocheński and Rojek both reject such criterion as insufficiently strict.

For one thing, it restricts the class of positive properties far beyond what is meant by the partisans of Negative Theology. Then, it may be argued, the notion of a directly perceived property is vague; why could one, for example, not directly perceive that a cow is not blue?³⁷

Rojek argues that in the worst case, a collection of positive properties can be given by enumeration. In this case, however, the model he provided would have very limited scope. Anyway, if someone is trying to limit the theory to the class of positive properties, such properties need to be defined. Without a doubt the lack of such definition is the weak point of Rojek's analysis.

Secondly, this account is also problematic with respect to the predicate $G(x)$. It seems reasonable to assume that the property of being God is positive. But this assumption is contradictory – combining it with (24) entails that something is God iff it is not God. To avoid inconsistency, we need to remove predicate G from the range of positive predicates.

Similarly, we need to assume that such predicates as “is unknown” as well as “is known” are negative properties. The instantiations of ZNT can take any form except the claim that God is neither unknowable nor knowable, neither indeterminate nor determinate. We cannot count these predicates as positive. Otherwise we encounter inconsistency again. Consequently, this approach does not avoid the problem of self-reference as well.

Finally, ZNT does not say anything about negative properties. May they be ascribed to God? Within the framework of Zinov'ev's system there are at least four options: they can be asserted, negated, they can be impossible to determine, or it might be the case that there is no general rule concerning this type of predicate. In the first case we obtain contradiction $G(x) \equiv \sim G(x)$. In the second case the thesis of God's unknowability entails that God is known. The third case makes the condition of positivity pointless. In the fourth case, there are some (negative) properties that can be ascribed to God. Thus, God is not unknown at all. All four options turn the model into nonsense.

Eventually, Rojek rejects theological skepticism, but not due to the the objections mentioned above. He accuses it of being incompatible with everyday religious discourse and praxis.

4. Positive negative theology

Rejecting the theology of silence and theological skepticism Rojek proposes his original interpretation of negative theology.³⁸ The basis for his consideration is *Mystical Theology* of Pseudo-Dionysius. Rojek observes that the Areopagite is aware of the fact that negations in apophatic theology cannot be understood classically. According to Dionysius holding that negations are simply the opposites of affirmations is wrong. They cannot be usual deprivations as well. For this reason one needs to find an alternative, non-Aristotelian reading of negation that would be in consonance with apophatic denials. The second observation is that Dionysius often stresses the transcendence of God. God is “beyond” and “superior” to beings. This way Rojek comes up with the idea of *positive negation*. He claims that negative theologians use negations in a *positive* way. When they negate something about God, they mean that He includes the negated thing, but still he is beyond it at the same time. In other words, when they say that God does not have property Q , they mean that he has Q in a specific, greater way.

To illustrate this concept Rojek provides an example of its occurrence in ordinary language.

Suppose that there are 100,000 dollars in cash on the table (it is not easy to imagine at this time of crisis). Suppose then that somebody asks if there are 10 cents. The answer “Yes” would be obviously right, but somehow misleading. It is in some sense acceptable to say “No.” “No, since there are much more than 10 cents on the table.” The word “No” does not stand for a classical negation, but expresses inadequacy between the supposition of this question on the one side, and the involved states of affairs on the other. The answer “Yes” for this question would imply that the sum on the table is comparable to 10 cents.³⁹

Rojek argues that a similar concept of negation can be found in the realm of great philosophical systems. For example, the term *aufhebung* from Hegelian dialectics is intentionally ambiguous. It is usually translated as “sublation” or “negation,” but in ordinary language *aufheben* means also “to keep” or “to preserve”. This double meaning was appreciated by Hegel himself. Thesis and antithesis are not erased in synthesis. They are kept and preserved in a better form.⁴⁰

In order to incorporate this peculiar positive negation into the formal system Rojek introduces a new unary functor $!$ that operates on atomic formulas. $!O(x)$ is interpreted as “ x positively has not Q ,” or “ x has a positive negation of Q .” The meaning of $!$ is given by the following axioms:

$$(R1) \quad !Q(x) \rightarrow Q(x),$$

$$(R2) \quad \neg(Q(x) \rightarrow !Q(x)),$$

$$(R3) \quad !!Q(x) \rightarrow !Q(x).$$

According to positive negative theology – as Rojek calls it – God has positive negations of all positive properties.

$$(PNT) \quad G(x) \equiv \forall Q(P(Q) \rightarrow !Q(x)).$$

From this thesis and (R1) we obtain

$$(26) \quad G(x) \rightarrow \forall Q(P(Q) \rightarrow Q(x)),$$

which corresponds to those parts of the Dionysian treatise where he claims that since God is the cause of all beings, we should ascribe to him all the affirmations we make in regard to beings. Usually after such a declaration immediately follows the statement that God is beyond beings, so more appropriately we should negate all such affirmations. The analogous form of such claims is PNT itself. Nevertheless, the Areopagite often insists that God is not *e.g.*, nonbeing or not immovable – he seems to deny the denials as well. Within this interpretation it is possible to hold

$$(PNT+) \quad G(x) \rightarrow \forall Q(P(Q) \rightarrow !!Q(x)).$$

This way we admit that God has positive negation of all positive negations of positive properties. PNT+ together with (R1) entail PNT.

Rojek claims that his interpretation formulated with the use of the axioms he provides is free from contradictions. Nevertheless, it not difficult to show that it is not true. The system itself is inconsistent. The troublesome axiom is (R2).

$$(27) \quad \neg(Q(x) \rightarrow !Q(x)) \quad (R2)$$

$$(28) \quad \neg(Q(x) \rightarrow !Q(x)) \rightarrow Q(x) \wedge \neg!Q(x) \quad (Th)$$

$$(29) \quad Q(x) \wedge \neg!Q(x) \quad (MP\ 28, 27)$$

$$(30) \quad Q(x) \wedge \neg!Q(x) \rightarrow Q(x) \quad (Ax)$$

$$(31) \quad Q(x) \wedge \neg!Q(x) \rightarrow \neg!Q(x) \quad (Ax)$$

$$(32) \quad Q(x) \quad (MP\ 30, 29)$$

$$(33) \quad \neg!Q(x) \quad (MP\ 31, 29)$$

This shows that we can ascribe any property to anything, which means that the calculus provided by Rojek is Post-inconsistent. Another unwelcome

conclusion derived from the above deduction is that we cannot ascribe positive negation of any property to anything. In particular, we cannot ascribe such positive negations to God. Having R2 among the axioms of Rojek's system, we have to admit that PNT (as well as PNT+) is not valid. For this reason, R2 should be removed. Moreover, R1 and R2 – without any additional axiom or rule – are uninformative. All we can do with them is to reduce any formula containing ! to the formula of classical quantifier calculus. Indeed, Rojek admits that his proposal is tentative and needs some further clarification, but it is clear that it cannot be the logic underlying positive negative theology.

Furthermore, most of the objections raised in the previous section concern these interpretations of negative theology as well. The condition of positivity imposed on properties that are positively negated with regard to God may be more plausible in the case of PNT. After all, we would like to avoid situations in which God is described as ignorant or infirm, especially in a higher and more eminent way. Nevertheless, this does not change the fact that positive properties need to be properly defined. Similarly, to eliminate the conclusion that something is God iff it is positively not God (i.e. is God in a greater way) we have to consider the property *G* of being God as a negative one.

Finally, it is easy to notice that positive negative theology is very close to the theory of analogy developed by St. Thomas Aquinas and his successors. This is an interesting feature in favor of Rojek's interpretation, since there are some authors who claim that the philosophy of Aquinas is also some kind of negative theology.⁴¹ But one can easily turn upside-down this argument claiming that apophatic theology interpreted in this manner loses its negative character and takes the form of a positive, "kataphatic" theory of God.⁴²

5. Negative theology as Neo-Platonically inspired mysticism

It is often emphasized that negative theology is a legacy of Platonic and Neo-Platonic philosophy, at least in the western tradition. In fact, we can extract a large number of excerpts from the writings of Plato and Proclus, which – by putting "God" in place of "the One" – are indistinguishable from Christian apophatic doctrine. This thought is the basis for interpretation of the negative theology provided by Uwe Meixner.⁴³

Traditionally, logicians (as well as metaphysicists) adopt the Aristotelian distinction between properties and individuals. Properties do not

exist independently; they can only be exemplified by individuals. Individuals, in turn, are not properties and cannot be ascribed to anything. Meixner argues that in the philosophy of Plato this distinction is blurred – properties are ideal forms, mind-independent timeless entities. They can exist on their own and are as real as individuals. Thus, within Platonic tradition it is eligible to call them “individuo-properties”.

Moreover, Meixner suggests that in the second part of *Parmenides* Plato considers the possibility of analyzing predicates by the part-whole relations. This observation leads Meixner to an *intensional* theory of properties.

Properties are in a straightforward manner parts of other properties: the content of one property is contained in the content of another. Thus, for example, the property *Not-being-married-during-1991* is, in the mentioned way, part, that is, an *intensional part* of the property *Being-bachelor-during-1991*.

Taking this for granted we can order the set of properties by the relation of inclusion. This way we obtain a structure isomorphic to power set algebra. It can be expressed with the following axioms:

- (34) For all properties X, Y, Z: if X is part of Y and Y is part of Z, then X is part of Z.
- (35) For all properties X: X is part of X.
- (36) For all properties X, Y: if X is part of Y and Y is part of X, then X is identical to Y.
- (37) For all X: if X is a property, then non-X (the negation of X) is also a property.
- (38) There is a property that is part of every property.
- (39) There is a property of which all properties are parts.

The following two theorems are essential for further consideration:

- (40) There is precisely one property that is part of every property.
(by 38 and 36)
- (41) There is precisely one property of which all properties are parts.
(by 39 and 36)

Meixner enriches this theory with some metaphysically loaded component by adding special meaning to the *extrema* of the order.

Definition 5.1. Being $:=$ the property that is part of every property, *i.e.* the least element of order.

Definition 5.2. The One $:=$ the property of which all properties all parts, *i.e.* the greatest element of order.

Definition 5.3. X is predicatively Y $:=$ X is a property and Y is a property, and Y is a part of X.

Having this definition we can obtain a new principle of negative theology

(ONT) The One is predicatively every property.
(by 41, def. 5.1, 5.2 and 5.3)

and

(42) For every property X, the One is predicatively both X and non-X.
(by ONT and 37)

Meixner makes further adjustment to definition 5.3 to improve his formal ontology and match it better to Neo-Platonic philosophy and negative theology. Its core, however, remains the same. Even though it is a very interesting and original approach, it is not devoid of problems. First of all, the intensional theory of properties seems to be inadequate in real cases of predication. There might be some part-relations among properties themselves, but surely not between properties and individuals. Claiming that the statement “Elisabeth is beautiful” in fact means “Beauty is a part of Elisabeth” seems to be distinctly odd or at least metaphorical.

Secondly, taking the intensional theory of properties for granted, it is not clear why the order among them should be total. It is easy to imagine the lattice of properties without absolute *extrema*. In this case the order is just partial and theorems 40 and 41 are not valid. Generally speaking, any other kind of order imposed on the set of properties turns this model into nonsense.

Pseudo-Dionysius claims that “we should posit and ascribe to it [the Cause of all beings – PU] all the affirmations we make in regard to beings.”⁴⁴ The problem is, however, that on the ground of Meixner’s interpretation we cannot do so. In this model, being is the least element of the order, and there is no property that is a part of this property. We cannot ascribe any property to being except itself. It means that we are only able to articulate a tautological statement that being is (predicatively) being.

Another troublesome feature of this interpretation is that it identifies God with a property. Note that it must not be confused with the problem of two methods for expressing the term “God” within a formal system (it can be done by a predicate and by a constant).⁴⁵ Moreover, this is a very special kind of property – it intensionally contains all other properties, which contradicts the thesis that God (or the One) is utterly simple. Such a thesis is common for Neo-Platonic philosophy and theology, even apophatic theology. It is also inconsistent with one of the central theses of negative theology, namely that God is “beyond” and “superior to” the realm of properties. Finally, it is not hard to notice that the formal system proposed by Meixner shares the same burden of “circularity” characteristic of Russell’s Simple Type Theory.⁴⁶

6. Conclusion

All four interpretations of negative theology I have presented above share the same idea, namely that God is totally transcendent and beyond anything else. They express it, however, in a number of different ways. The theology of silence emphasizes that God is ineffable and we cannot ascribe to him any property whatsoever. Theological skepticism says that we cannot acquire any knowledge of Him; He is utterly incomprehensible in his nature. According to positive negative theology, whatever properties God has, He does it in such an eminent way, that in fact it is more appropriate to say that He has not any of these properties at all. In the fourth interpretation the One *viz.* God is Himself a property, yet a special one – the greatest property in the order of properties.

Among these interpretations I have provided a number of attempts to model negative theology within a formal system. Unfortunately, it is hard to indicate a best one – all of them fail in some manner. Some of them are simply inconsistent, some contradict the usual religious praxis and discourse, some do not cover all crucial theses of negative theology. I believe that this shows how challenging the theory is from a logical point of view.

Nevertheless, this does not mean that formal logic cannot be useful in clarifying apophatic doctrine. Moreover, I believe that reconstruction of negative theology in terms of formal logical systems can be mutually beneficial. On the one hand, (despite the failures of the attempts presented above) it can save negative theology from the accusation of being paradoxical. Furthermore, a consistent model that covers all essential theses of negative theology can help to choose its preferable interpretation. On the

other hand, studying apophatic theology with the use of formal tools may shed a new light on epistemic paradoxes, help to improve semiotic theory of meaning and reference, or provide some formal *fundamenta divisionis* for various notions of negation, which may be advantageous for logic and its philosophy. At any rate, this is an endeavor that still needs to be undertaken.

NOTES

¹ Cf. J. Woleński, "Theology and Logic", (in:) *Logic in Theology*, B. Brożek, A. Olaszewski, M. Hohol (eds.), Copernicus Center Press, Kraków 2013, p. 13.

² See J. Woleński, "Polish Attempts to Modernize Thomism by Logic (Bocheński and Salamucha)", *Studies in East European Thought*, vol. 55 (2003), pp. 299–313.

³ J. Bowker, *The Oxford Dictionary of World Religions*, Oxford University Press, Oxford 1997. Note that according to this definition we can have some knowledge about God, even though it is given by negating our concepts.

⁴ C. M. Stang, "Negative Theology from Gregory of Nyssa to Dionysius the Areopagite", (in:) *The Wiley-Blackwell Companion to Christian Mysticism*, J. A. Lamm (ed.), Wiley-Blackwell, Oxford 2012, p. 161. Note that this definition narrows the scope of negative theology to Christian tradition, which I find incorrect.

⁵ I. Franck, "Maimonides and Aquinas on Man's Knowledge of God: A Twentieth Century Perspective", *The Review of Metaphysics*, vol. 38 (1985), p. 593.

⁶ See P. Sikora, *Logos niepojęty*, Universitas, Kraków 2010.

⁷ Pseudo-Dionysius the Areopagite, *Mystical Theology*, chapter V, 1048A.

⁸ P. Rojek, "Towards Logic of Negative Theology", (in:) *Logic in Religious Discourse*, A. Schumann (ed.), Ontos Verlag, Frankfurt 2010, pp. 192–215.

⁹ J. Woleński, "Theology and Logic", *op. cit.*, pp. 11–12 (my underlining).

¹⁰ See R. Otto, *The Idea of the Holy. An Inquiry into the Non-Rational Factor in the Idea of the Divine and Its Relation to the Rational*, transl. John W. Harvey, Oxford University Press, London 1923, pp. 216–220.

¹¹ See J. N. Jones, "Sculpting God: The Logic of Dionysian Negative Theology", *Harvard Theological Review*, vol. 89 (1996), pp. 355–371.

¹² See P. Rorem, *Pseudo-Dionysius. A Commentary on the Texts and an Introduction to Their Influence*, Oxford University Press, New York – Oxford 1993, p. 213.

¹³ The first name was given by Joseph M. Bocheński, see J. M. Bocheński, *The Logic of Region*, New York University Press, New Yourk 1965, pp. 31–36. The proponent of the second name is George Englebreetsen, see G. Englebreetsen, "The Logic of Negative Theology", *New Scholasticism*, vol. 47 (1973), p. 232.

¹⁴ M. Durrant, "The Meaning of 'God' (I)" (in:) *Religion and Philosophy*, M. Warner (ed.), Cambridge University Press, Cambridge 1992, p. 74. I quote this passage after P. Rojek, *op. cit.*, p. 202.

¹⁵ See P. Kügler, "The meaning of mystical darkness", *Religious Studies*, vol. 41 (2005), pp. 95–105.

¹⁶ For the sake of this article most proofs that I provide are simplified.

¹⁷ At first glance it seems reasonable to choose intuitionistic logic for the one that underlies Kügler's theory of Unspeakable, since it is a well-established calculus that rejects the

law of the excluded third. Intuitionistic logic, however, fails to fulfill the second criterion, namely to block the equivalence of UNT and ENT. In fact in intuitionistic logic “one quarter” of De Morgan’s laws do not hold, i.e.

$$\nVdash_{INT} \exists \neg A \rightarrow \neg \forall A.$$

Nevertheless, three other laws (including the one that is involved in the UNT-ENT equivalence) are valid

$$\vdash_{INT} \neg \forall A \rightarrow \exists \neg A$$

$$\vdash_{INT} \neg \exists A \rightarrow \forall \neg A$$

$$\vdash_{INT} \forall \neg A \rightarrow \neg \exists A.$$

Unfortunately, this is the case also for Johansson’s or (sub)minimal logic with the weakest intuitionistic negation. Cf. J. M. Dunn, *Generalized Ortho Negation*, (in:) *Negation: A Notion in Focus*, H. Wansing (ed.), Walter de Gruyter, Berlin – New York 1996, pp. 3–26; S. P. Odintsov, *Constructive Negations and Paraconsistency*, Trends in Logic vol. 26, Springer-Verlag, New York 2008; S. P. Odintsov, “On the structure of paraconsistent extensions of Johansson’s logic”, *Journal of Applied Logic*, vol. 3 (2005), pp. 43–65; Y. Shramko, “Dual Intuitionistic Logic and a Variety of Negations: The Logic of Scientific Research”, *Studia Logica: An International Journal for Symbolic Logic*, Vol. 80 (2005), pp. 347–367; A. Colacito et. al., “Subminimal negation”, *Soft Computing*, vol. 21 (2016), pp. 165–174. Probably some other paraconsistent logic that bulks both De Morgan’s laws as well as *tertium non datur* could fit into Kügler’s theory, but this needs further consideration.

¹⁸ See J. I. Gellman, “The meta-philosophy of religious language”, *Nous*, vol. 11 (1971), pp. 158–159.

¹⁹ See J. D. Jacobs, “The Ineffable, Inconceivable, and Incomprehensible God. Fundamentality and Apophatic Theology”, (in:) *Oxford Studies in Philosophy of Religion VI*, R. Audi et. al (eds.), Oxford University Press, New York 2015, pp. 158–175.

²⁰ *Ibidem*, p. 166.

²¹ See J. M. Bocheński, *op. cit.*, pp. 31–36.

²² This name was coined by P. Rojek. Actually, he uses it for both – the theory of the Unknowable and the theory of the Unspeakable. See his taxonomy of negative theologies in “Towards logic”, *op. cit.*, p. 199.

²³ M. Maimonides, *The Guide of the Perplexed*, vol. I, Shlomo Pines (trans.), University of Chicago Press, Chicago – London 1963, p. 139.

²⁴ E. Z. Benor, “Meaning and Reference in Maimonides’ Negative Theology”, *The Harvard Theological Review*, vol. 88 (1995), pp. 339–360.

²⁵ *Ibidem*, pp. 352–353.

²⁶ H. Putnam, “On negative theology”, *Faith and Philosophy*, vol. 14 (1997), p. 410. Emphasis are Putnam’s.

²⁷ Note the similarity to FNT.

²⁸ Note also that full-blooded Moore’s problem (or “paradox”) involves the notion of belief rather than knowledge and reads $p \wedge \neg Bp$. Cf. R. Sorensen, “Epistemic Paradoxes”, *The Stanford Encyclopedia of Philosophy* (Fall 2017 Edition), Edward N. Zalta (ed.), URL = <https://plato.stanford.edu/archives/fall2017/entries/epistemic-paradoxes/>

²⁹ Actually, the paradox of knowability is usually referred to the contrapositive theorem, namely that if all truths are knowable in principle, then all truths are in fact known. See F. B. Fitch, “A Logical Analysis of Some Value Concepts”, *The Journal of Symbolic Logic*, vol. 28 (1963), pp. 135–142. For the discussion see B. Brogaard, J. Salerno, “Fitch’s Paradox of Knowability”, *The Stanford Encyclopedia of Philosophy* (Winter 2013 Edition), Edward N. Zalta (ed.), URL = <http://plato.stanford.edu/archives/win2013/entries/fitch-paradox/>.

³⁰ Cf. H. Wansing, “Diamonds Are a Philosopher’s Best Friends: The Knowability Paradox and Modal Epistemic Relevance Logic”, *Journal of Philosophical Logic*, vol. 31 (2002), p. 593.

³¹ P. Rojek, “Towards logic...”, *op. cit.*, pp. 202–205.

³² A. A. Zinov’ev, *Foundations of the Logical Theory of Scientific Knowledge (Complex Logic)*, T. J. Blakeley (transl.), D. Reidel Publishing Company, Dordrecht 1973.

³³ Zinov’ev uses somewhat odd and unusual notation and writes $a \leftarrow Q$, $a \neg \leftarrow Q$, and $a? \leftarrow Q$ for assertions, negations and cases of indeterminacy, respectively. Nevertheless, he permits “normal” notation as well. Cf. A. A. Zinov’ev, *Foundations...*, *op. cit.*, p. 92.

³⁴ *Ibidem*, pp. 91–95.

³⁵ P. Rojek, “Towards logic...”, *op. cit.*, p. 199.

³⁶ J. M. Bocheński, *op. cit.*, p. 112.

³⁷ *Ibidem*.

³⁸ P. Rojek, “Towards logic...”, *op. cit.*, p. 208–212.

³⁹ *Ibidem*, pp. 209–210.

⁴⁰ Cf. G. W. F. Hegel, W. Wallace, J. N. Findlay, *Hegel’s Logic. Being Part One of The Encyclopaedia of the Philosophical Sciences (1830)*, Clarendon Press, Oxford 1975, p. 142.

⁴¹ Cf. P. Sikora, *Logos niepojęty*, Universitas, Kraków 2010, pp. 79–87.

⁴² Cf. S. Ruczaj, “Analogia i apofatyczny pazur”, *Pressje*, vol. 30/31 (2012), pp. 280–282.

⁴³ See U. Meixner, “Negative Theology, *Coincidentia Oppositorum*, and Boolean Algebra”, *Logical Analysis and History of Philosophy*, vol. 1 (1998), pp. 75–89.

⁴⁴ Pseudo-Dionysius the Areopagite, *Mystical Theology*, chapter I, 2.

⁴⁵ See section 2.

⁴⁶ Cf. T. Coquand, “Type Theory”, *The Stanford Encyclopedia of Philosophy* (Summer 2015 Edition), Edward N. Zalta (ed.), URL=<https://plato.stanford.edu/archives/sum2015/entries/type-theory/>.

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