The Logic of God: A Pluralistic Representational Theory of Concepts[1]

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Abstract: In this paper I present a formalization of the theory of ideal concepts applied to the concept of God. It is done within a version of the Simplest Quantified Modal Logic (SQML) and attempts to solve three meta-problems related to the concept of God: the unicity of extension problem, the homogeneity/heterogeneity problem and the problem of conceptual unity.

Mathematical Subject Classification: Primary 03A05; Secondary 03B44, 03B45, 03B80, 03C55, 03C98.

Keywords. Concept of God, SQML, religious pluralism, theory of concepts.

1. Introduction

From a general viewpoint, a theory of concepts aims at saying what a concept is, or filling in the x in the schema below:

(T) Concepts are x.

Many kinds of structures have been proposed to play the role of x: definitions, prototypes, sets of exemplars, theory-like structures of some sort, perceptual 'proxytypes', etc. (see [12] and [9]). Although theories of concepts usually aim at T, they can be also thought as aiming at filling in the x in the schema below:

(R) Concepts are to be represented as x.

When a theory primarily aims at R, I say it is a representational theory of concepts, or an *R-theory of concepts* for short; if it aims primarily at T, I call it is a *T-theory of concepts*.

T and R can also be thought of as applying to specific types of concepts (such as abstract concepts, or scientific concepts), or to individual concepts (such as the concept of God, or the concept of beauty). If a theory does not aim at T or R, but at special versions of them, then I say it is a *special theory of concepts* (as opposed to a general theory of concepts). Most, if not all, theories of concepts are general T-theories of concepts.

If a theory of concepts is described within a formal logical framework, I call it a *logical theory of concepts*. Due to its representational nature, a logical theory of concepts

[1] Work partially supported by CNPq (National Counsel of Technological and Scientific Development of Brazil), public notice CNPq N◦ 04/2021 and public notice CNPq/MCTI/FNDCT Nº 18/2021.

will also be an R-theory of concepts. A logical theory of concepts can be either a general theory or a special theory.[2]

An important aspect of theories of concepts has to do with how they deal with the *singularity assumption* [18, p. 150]:

(SA) For anything that can be conceptually represented, there is a unique concept of that thing.

A theory of concepts that rejects SA is called a *pluralistic theory of concepts*. Most theories of concepts are non-pluralistic (see [18] and [9]).[3]

SA seems particularly relevant for specific concepts like the concept of God. Different monotheistic religious traditions—and sometimes schools within traditions—seem to have different concepts of God. According to orthodox Christianity, God is a trinitarian entity. Islam, on the other hand, emphasizes that God is strictly singular (tawḥīd), unique (wāḥid) and inherently One (aḥad). The so-called "Hindu bible", the Bhagavad-gītā, while holding that God is one, claims that He is identical with everything. There is plurality even within traditions: when dealing with the problem of the Trinity, for example, Christian scholars have proposed different and many times conflicting concepts of God. Similarly, philosophers have proposed and defended different concepts of God. There is a huge variety within different (categories of) models of God such as classical and neoclassical theism, pantheism, panentheism, process theism, open theism, etc. Thus, the claim below seems to be true:

(PG) There is a plurality of concepts of God.

As expected, PG contradicts SA, or, more specifically, SA's corollary that there is a unique concept of God. PG also conflicts with a monotheistic view of God, or with what we might call the *assumption of monotheism*:

(AM) There is at most one God; otherwise said, there is at most one object that falls under some concept of God.

Since PG states that there are several concepts of God, it is possible that more than one is instantiated, that is to say, that there is more than one object that falls under some concept of God. In the case this possibility is actualized, there would be more than one God, which goes against AM. I call this the *unicity of extension problem*.[4]

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2 Examples of general logical theories of concepts are [19] and [4]; [2] is an example of a special logical theory of concepts.

3 For a survey on theories of concepts see [6], [12] and [9].

4 This problem might be solved by distinguishing between the concept of God and conceptions of God. Graham Oppy [13, p. 1] for example, claims that "While I think that there is just one concept of God, I hold that there are many different conceptions of God." Oppy takes the following reference-fixing description to be the concept of God: to be God is to be the one and only god, where to be a god is to be a superhuman being or entity who has and exercises power over the natural world and is not, in turn, under the power of any higher ranking or more powerful category of beings [13, p. 1]. A conception of God is any way people might conceive God. According to Oppy, despite the enormous disagreement among defenders of different conceptions of God, all of them agree (or should agree) that God is the one and only god [13, p. 14]. The problem with this account is, first, that there seems to be 'conceptions of God' that conflict with Oppy's view of the concept of God as the one and only God. For example, while a deist God might not exercise power over the natural world, in some Vedānta traditions God is not conceived as a

Moreover, PG has also some problems of its own. Is there a homogeneity in terms of philosophical tenability among all concepts of God? Or is there a best or most defensible concept of God? Is it possible to take a neutral stance on these issues, as perhaps a genuinely plural approach would require? I call this the *homogeneity/heterogeneity problem*. Perhaps more important than that, how to guarantee that all these so-called concepts of God are in fact concepts *of* God? In other words, if these concepts are so different, in many cases incompatible with each other, what sense is there in the claim that they are concepts-of-the-same-thing? What bonds them all as concepts of God? This is the *problem of conceptual unity*.

It seems clear that these problems have to be addressed within a special theory of concepts which seriously takes into account the pluralistic aspect of the concept of God. It also seems clear these problems are representational problems; in an important sense, they concern the way we represent the concept of God. As a logical theory of concepts address R in a much more detailed way than a non-logical theory, it seems that the best way to address these problems it through a logical pluralistic special R-theory of concepts. This involves addressing the following questions: (i) How can the concept of God be formally represented? (ii) Are there any logical principles governing it? (iii) If so, what kind of logic lies behind them? (iv) Can there be a logic of the concept of God after all?

In [17] I presented a pluralistic special R-theory of concepts. I called it the *theory of ideal concepts.* It is special because it deals with a special kind of concepts—*ideal concepts*—to which the concept of God belongs. It is not however a logical theory of concepts. My goal in this paper is to formalize the theory of ideal concepts applied to the concept of God. More specifically, I want to provide a logical pluralistic special R-theory of concepts applied to the concept of God able to deal with the above-described issues.[5] The formalization is done within a version of the Simplest Quantified Modal Logic (SQML), the modality being necessary to take the pluralistic side of the issues into consideration.[6] I take it as a methodological *desideratum* that such a formalization should be done within the simplest existing logical formalism.[7]

The structure of the paper is as follows. In the following two sections I introduce the theory of ideal concepts and show how it can be applied to the concept of God. In Section 4 I introduce the version of the SQML that I will use. In Sections 5 and 6 I introduce the general semantic and proof-theoretical postulates to be used in the formalization. In Section

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"superhuman being" in any sense of the term. Second, it seems safe to say that most views about concepts would see Oppy's conceptions of God as concepts. Thus, in the lack of a satisfactory distinction between concept and conception, it is reasonable to follow what seems to be the standard in contemporary philosophy of religion and take the words "concept" and "conception" as synonymous.

5 Although the theory of ideal concepts is able to deal with polytheistic concepts of God, my focus here is exclusively on the monotheistic concept of God. The reason for that is very simple. This is the kind of concept that is at the center of the philosophical debate on the rationality of theism. When contemporary philosophers argue for and against the existence of God, or for and against the consistency of the concept of God, they generally assume a monotheistic approach.

6 [16] contains an early version of the formalism presented here, without reference however to this idealistic theory of concepts.

7 The rationale behind this is: only if existing logical systems are unable to satisfactorily deal with these issues should we introduce a new formalism specifically aimed at this. To see why first-order logic alone cannot take this pluralistic view of the concept of God into account see [16, p. 230-240].

7 I introduce the formalization *per se*, which I call the SQML theory of the concept of God, or the *Logic of God*, for short. Finally, in Section 8 I lay down some few concluding remarks.

2. The Theory of Ideal Concepts

Most of the currently discussed theories of concepts have emerged as alternatives to the so-called classical theory of concepts, the view that definitions are the proper way to characterize concepts [12, pp. 11-28]. According to this view, the x in T and R would be something like this: definitions based on lists of property conditions; an object falls under the concept if and only if it possesses all properties of the list [17, pp. 732-733].

One of the most powerful criticisms against the classical theory of concepts was made in the 1970's by Eleanor Rosch ([14] and [15]). Rosch's criticisms also provided the basis for several early alternatives to the classical theory under the rubric of *prototype theory*. According to prototype theorists, most concepts are complex representations whose structure encodes a statistical analysis of the properties their members tend to have—a list of properties that are found to greater or lesser degrees in the category, for example. From a representational viewpoint, a prototype can be seen as a list of statistically significant properties.

Many readers, however, have interpreted Rosch's early writings as suggesting that a concept is characterized by a single prototype or best exemplar of the category [12, p. 41]. According to this idea, the category of dogs is represented by a single dog that best embodies the attributes normally found in dogs. A prototype in this case would be a special exemplar of the category. From the point of view of T and R, the basis of the structure kind x would then be a singular individual.

Something similar happens with another alternative to the classical theory, first proposed by Douglas Medin and Marguerite Schaffer [10] in the late 1970s: *exemplar theory*. According to exemplar theory, the concept of dog is neither a definition nor a list of properties found to greater or lesser degrees in dogs, but (the psychological representation of) a specific set of exemplars of dogs, the dogs that had the strongest effect on someone's memory, for example [12, p. 49]. Here also the basis of x in T and R is a singular individual.

Notice that in these two approaches—prototype theory and exemplar theory—there is no longer a list of conditions whose satisfaction would be sufficient to classify something as an instance of a concept. How then, we might ask, do these theories work in relation to conceptual categorization? The keyword here is "similarity." The fact that a single entity is similar enough to the prototype (or set of exemplars) entitles one to classify it as belonging to the category at hand. A particular object is classified as a chair if it is similar enough to the chair prototype (or chair exemplars, in the case of exemplar theory).

But not all similarity-based processing involves prototypes or sets of exemplars. Barsalou [1] showed that many concepts are organized around similarity to ideals. An ideal is an exemplar that has the best characteristics of a category [18, pp. 152-153]: the ideal diet, the ideal husband, the ideal trip, the ideal job, etc. While prototypes represent statistically significant properties, ideals involve superlatively desirable (or ideal) properties for a category. As a result, they are not statistically prominent; in many cases, they are properties that are relevant to the purpose of the category (which is often culturally determined) [5, p. 76].

The view that an ideal is an exemplar of a category cannot be underestimated. It implies that the ideal diet, for example, is an exemplar of the diet category in the same way as a vegan diet and a diet for high-performance athletes are. An ideal is a particular instance of a concept, in the case the category can be conceptually represented, of course. Although the term "ideal" is used with other meanings, this is a meaning that is clearly found in the relevant literature.[8]

Although ideals are individual exemplars of a category, they are not ordinary exemplars. In general, ideals are not found in the concrete world [18, p. 152]. The ideal diet for example has probably something close to zero calories, although no real diet that many calories (the prototypical diet certainly has well over zero calories) [18, p. 152]. Most likely, no real, concrete husband has all the attributes, to the right degree, of the ideal husband: perfect provider, perfectly faithful, strong, respectful, attractive, sensitive, understandable, empathic, and so on.

This point is crucial. First, because it implies the existence of exemplars of categories that do not exist in the concrete world (the ideal diet, the ideal husband, the ideal job, etc.). Second because it suggests that, like sets, propositions, the number 2 and Dante's Inferno, ideals are abstract objects. Third because it indicates the reason why ideals are not found in the concrete world: ideals embody a view too perfect or excellent of things we find in the world. Among all the members of the category of husbands, there is a special one—the ideal husband—that possesses the best characteristics of that category, which are those resulting from a process of perfecting the relevant properties of the actual exemplars of the category.

It is important to remark that the expression "ideal husband" is ambiguous. It might refer to an abstract object, the ideal member of the category of husbands, but also to a concept, *the concept of* ideal husband (and the corresponding category.) I call this this kind of concept an *ideal concept*. The concept of God is an ideal concept. Thus, while "ideal concept" refers to a specific type of concept, "ideal" refers to an abstract object, a special, idealized member of a category.

Just as ideals are abstract (objects), so are ideal concepts. Ideal concepts are abstract concepts. Take the concept of God, for example. Like the concepts of ideal gas and perfect circle, the concept of God is an idealization in the sense of a view too perfect or excellent of things we find in the world; so perfect that it cannot exist in the world. Even if God as a whole cannot be seen in this idealized, maximally perfect way, some aspects of it certainly can. Most divine properties, for example, can be seen as idealizations in this sense. Omnipotence, omniscience, wholly goodness, eternity and simplicity can all be seen as

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8 George Lakoff, for example, writes as follows [5, p. 76]: "Many categories are understood in terms of *abstract ideal cases*—which may be neither typical nor stereotypical. […] Naomi Quinn (personal communication) has observed, based on extensive research on American conceptions of marriage, that there are many kinds of ideal models for a marriage: successful marriages, good marriages, strong marriages, and so on. Successful marriages are those where the goals of the spouses are fulfilled. Good marriages are those where both partners find the marriage beneficial. Strong marriages are those likely to last." The emphasis is mine.

maximally perfect views of properties we find in the world. Because of that, there cannot be concrete entities—in the sense of having a spatiotemporal location—that instantiate them. It is this abstraction based on an idealization in the sense of maximal perfection that I have in mind when I say that ideal concepts, and ideals, are abstract. I call it idealization-maximal-perfection (IMP) abstractedness; the concept of God, for example, is an IMP abstract concept, or an ideal concept, for short.

The kind of possibility present in the claim that there cannot be concrete instances of abstract concepts depends on the concept at stake. For example, in the case of the concept of prime number, we might say that it is metaphysically impossible for there to be concrete instances of it in the world. But the fact that there cannot be an ideal gas in the world seems to follow from the laws of nature that operate in our world; it is a kind of physical possibility. This is in fact a consequence of the IMP abstractedness of the concept of ideal gas. Since it maximally perfects something we find in the physical world, it goes beyond physical possibility. As far as the concept of God is concerned, it is certainly not absurd to follow the first path and say that it is metaphysically impossible for there to be concrete instances of it. However, since I am favoring this IMP abstractedness, it is enough for me to understand the claim that there cannot be a concrete instance of the concept of God in the weaker sense of physical possibility.

Given what I said above, the connection between abstract concepts and abstract objects seems obvious: if an object *o* falls under an abstract concept, then *o* is abstract. This is not the path I will follow here. First because the connection I have made between abstract concepts and the objects that fall under them was in terms of non-concreteness, not abstractedness: I argued that that there cannot be concrete instances of abstract concepts. Second because I will follow what David Lewis [7, p. 83] calls the negative path and take abstract objects simply as objects that are causally ineffective. (As I have said, concrete objects are objects that have a spatiotemporal location, which involves causal effectiveness.) Since a non-abstract object is one that is causally effective, non-abstractedness and concreteness are not equivalent: non-abstract non-concrete objects, that is, causally effective objects without spaciotemporal location are logically possible. This is of course needed if we want to cope with the idea that God, the object that falls under the (abstract) concept of God, although non-concrete, can interact causally with the world.

Given all this, one might wonder: can the category of ideal husbands, for example, have nonabstract members? Considering the abstractedness of both ideals and ideal concepts, might some actual husband be an ideal husband? The answer is yes. Let us call *h* the abstract object, ideal member of the category of husbands, and *o* a (ordinary) member of the category of husbands. Following the categorization process behind prototype theory and exemplar theory, it seems reasonable to say that *o* is a member of the category of ideal husbands if and only if *o* is similar to *h*. Therefore, depending on the criterion of similarity at stake, an actual husband *o* can be seen as an ideal husband.

Building upon this suggestion, as well as upon the idea behind exemplar theory and the initial interpretation of prototype theory I mentioned at the beginning of this section, I propose what I call the *theory of ideal concepts*. The expression has a double meaning. It is a theory of ideal concepts in the sense that it aims to deal with ideal concepts; it is therefore a special theory of concepts, since it applies only to a specific kind of concept. But it is also a theory of ideal concepts in the sense that it aims to follow the aforementioned idea behind exemplar theory and the initial interpretation of prototype theory and take ideals, that is, specific exemplars of a category, as the basis of the *x* in T and R. Seen as a T-theory, the theory of ideal concepts claims that the *x* in T and R is these abstract objects we call ideals.

Suppose *c* is the ideal that characterizes concept C. Whether an object *o* is an instance of C depends on how similar *o* is to *c*. But similarity between objects is assessed through the properties they possess. To find out whether *o* is similar to *c* we need a description of both *o* and *c* containing the properties they possess. The theory of ideal concepts therefore needs a list with the properties attributed to *c*. Although from the viewpoint of a T-theory the concept is the ideal *c*, in terms of an intelligible representational structure, which is required by an R-theory, a representation of *c* in terms of properties is needed. Therefore, in the R-theory of ideal concepts the *x* of R is best seen as a pair $<c, \Delta_c>$, where *c* is an ideal and Δ_c is a list with the definitional properties of *c*. I call Δ_c the *D-concept* of C (D standing for definitional) and *c* the *I-concept* of C (I standing for ideal).

This R-theory of ideal concepts is pluralistic. As any other object, the ideal *c* might be described in different, sometimes conflicting ways. There might be several Δ_c's, with different lists of property conditions. C might then be represented as different pairs: $<c, \Delta_c>$, $<c, \Delta'_c>$, $<c, \Delta''_c>$, and so on. While there is only one I-concept of C, that is, one ideal *c*, there might be several D-concepts of C.

3. A Representational Theory of the Concept of God

Let us now see how this R-theory of ideal concepts might be applied to the concept of God. First of all, besides meaning the possible (unique) instance of the concept of God, the word "God" also means an ideal, an abstract object. Let us call this abstract object *g*. In the same way that the ideal husband is an (abstract) exemplar of the category of husbands, *g* might be seen, for example, as the ideal exemplar of the category of beings: it has, in a maximally idealized way, desirable properties found in the members of this category, which guarantee *g* an ultimate value for believers. In this R-theory of ideal concepts applied to God, which I call the *idealistic R-theory of the concept of God*, *g* plays the role of the I-concept of God. The list of properties which *g* supposedly possesses—Δ_g—plays the role of the D-concept of God. But as we have seen, different philosophers, traditions, and schools within traditions, disagree about which properties *g* possesses. Therefore, there are several D-concepts of God.

As an ideal exemplar of a category (the category of beings, for example), *g* exists. It exists in the same way that abstract objects such as sets, propositions and the number 2 do. On the other hand, we do not know whether God exists, that is to say, whether there is an object that falls under the (or some) concept of God. But if there is, it exists in a different way, as a non-abstract, causally efficacious object. Notice that this does not imply that God is concrete. As I am using the term, a concrete object is one that has spaciotemporal location; a non-abstract object is one that is causally efficacious. And as I have pointed out earlier, the latter does not entail the former: non-abstract non-concrete objects, that is, causally efficacious objects without spaciotemporal location are logically possible.[9]

Now, how this theory stands in relation to SA—the claim that there is a unique concept of God—and PG—the claim that there is a plurality of concepts of God? There are two perspectives that we can look from to answer this question. Looking from the perspective of the ideal *g*, the theory accepts SA and rejects PG. There is only one ideal *g*; since the concept of God might be understood in terms of *g*, there is a unique concept of God. But looking from the perspective of Δ_g, the theory allows for a plurality of ways of defining *g*. *g* is one, but there might be different, conflicting attempts to characterize it in terms of the properties it supposedly possesses. Therefore, there might be different Δ_g's and consequently different D-concepts of God. From this perspective, the theory is pluralistic: it rejects SA and, consequently, accepts PG. Putting it in terms of D-concept and I-concept, while the following versions of PG and SA are true:

(PG^D) There is a plurality of D-concepts of God.
(SA^{GI}) There is such a thing as the unique I-concept of God.

the ones below are false:

(PG^I) There is a plurality of I-concepts of God.
(SA^{GD}) There is such a thing as the unique D-concept of God.

The fact that these different Δ_g's are *attempts* to characterize the *same* object—the ideal *g*—guarantees that they are all concepts of the same thing, namely God. In other words, *g* bonds all Δ_g's together as concepts of God. Thus, the *problem of conceptual unity* is solved. But since there is only one concept of God—recall that despite the name (D-concept), Δ_g is an attempt to characterize this ideal *g*, which from the perspective of an idealistic T-theory of the concept of God, is the actual concept of God—there will be at most one instance of the concept of God. Thus, the *unicity of extension problem* is solved.

See that a situation where two different non-abstract objects *o*' and *o*" satisfy the conditions of Δ'_g and Δ''_g, respectively, does not threaten my solution to the unicity of extension problem. The fact that the several Δ_g's are attempts to characterize this one object *g* allows us to talk about *the* successful attempt to characterize the concept of God, or the proper, correct or best D-concept of God. If objects *o*' and *o*" are different, then either Δ'_g, Δ''_g or none of them is the correct D-concept of God.

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[9] The question of what those desirable properties possessed by g (in a maximally idealized way) are is answered by specific D-concepts of God. For example, while possessing intellect and will are in the list of properties of the concept of God linked to most monotheistic views, they are not in the list of a pantheistic concept of God (assuming that pantheism can be included in the class of monotheistic views on God). A more fundamental issue comes from the following objection. Most exemplars of beings we know of possess the properties of corporeality and complexity. These properties obviously conflict with incorporeality and simplicity, which are often attributed to God. Therefore, it seems false that God is an exemplar of the category of beings. In reply to this, I would say that the result of maximally perfecting a property P might be something quite different from P; it might even be something incompatible with P. For example, considering the perishable nature of material bodies, the result of maximally perfecting the property of corporeality might be its very opposite, that is to say, incorporeality, which of course does not exclude the possibility that God has an imperishable non-material body.

Concerning the functioning of the similarity-based categorization process of this idealistic R-theory of the concept of God, it can be thought of in at least two different ways: in a strong way, according to which for a non-abstract object *o* to be similar to *g* it must have all *g*'s properties (with the exception of the property of abstractedness, of course), in the proper degree, or in a weaker way, according to which *o* might be similar to *g* even if it does not possess all *g*'s properties. While the first case produces an orthodox theistic view according to which *g*'s properties function as necessary and sufficient conditions for instantiation, the second results in a heterodox approach (albeit more traditional, from the perspective of prototype and exemplar theories) with some interesting consequences.

Suppose that *g* is omniscient, omnipotent, wholly good and has created the world. Suppose in addition that *o* is a non-abstract object who we know (through compelling arguments, for example) has created the world. It seems reasonable to conclude from that that *o* has an astonishing amount of power and knowledge, and perhaps some degree of benevolence. It thus makes sense to say that *o* is similar to *g*, similar enough for it to be taken as an (or the) instance of the concept of God. If we agree on this, we will have to concede that an argument that arrives at the conclusion that *o* exists is to be considered a successful argument for the existence of God, even though *o* does not possess all divine properties. Despite all the problems that design arguments have, at least one of the criticisms made against them, that the argument does not arrive at the God of religion, would lose much of its strength. This seem to be an interesting application of this approach. Of course, as in prototype theory and exemplar theory, the challenge is to provide a satisfactory characterization of similarity.

At this point one might object to the number of non-concrete entities postulated by this theory of ideal concepts. Besides postulating the existence of a platonic realm containing the abstract objects I am calling ideals, it also postulates the existence of non-concrete causally efficacious objects which might be the instances of these abstract concepts. Although I believe that a tenable philosophical defense against such criticism can be built up, I will not try to do that here. The reason for that it that an R-theory of ideal concepts, which is my focus, is not threatened by such objection as much as a T-theory is.

As a representational theory, all this idealistic R-theory of the concept of God postulates is that concepts be represented as objects. This is not new. In his logical attempt to integrate Leibniz's metaphysics of individual concepts and logic of concepts, Edward Zalta [19] represents concepts as abstract objects. Although Zalta does not claim to be following a mere representational approach—he seems to defend the claim that, for Leibniz, concepts are in fact abstract objects—, his logic of concepts and, as matter of fact, any logic of concepts, is more than anything a theory of representation (as well as a theory of inference). Sketching how my R-theory of the concept of God would look like when expanded into a logical theory can thus help me to highlight its representational feature. This is done in the next sections.

4. The Simplest Quantified Modal Logic (SQML)

The idealistic R-theory of the concept of God can be formalized within the *simplest quantified modal logic* (SQML), which is the system resulting from “combining the laws of classical quantification theory with the modal propositional logic K in the most direct manner.” [8, p. 431]. From the point of view of the logical language, SQML requires us to extend the language of first-order logic (FOL) so that the necessity modal operator $\Box$ is added: if α is a formula, then $\Box\alpha$ is also a formula. The possibility operator $\Diamond$ is introduced derivatively: $\Diamond\alpha =_{def} \neg\Box\neg\alpha$. From a semantic point of view, SQML is a modal framework where constants denote the same object in all possible worlds (rigid designators), the objects of the domain exist in all possible worlds (constant domain) and the set of possible worlds W is not the same as the set of all logically possible worlds (K-semantics).

Following the standard modal logic semantic notation, a frame F is a pair <W,R> where W is a set of possible worlds and R an accessibility relation between worlds. In SQML, a model is a quadruple <W,R,D,V>, where <W, R> is a frame F. We say that M is based on F. If F belongs to a specific class of frames $\mathscr{F}$, we say that M is an $\mathscr{F}$-model. D is a non-empty domain of objects to be used in connection with all worlds (it is a constant domain) and V is a pair of valuation functions $<V_C,V_P>$ such that V_C maps each constant symbol to an object of the domain D, and V_P maps each *n*-ary predicate symbol and world $w \in W$ to a n-tuple drawn from D. While the denotation of constants is the same for all worlds—they are rigid designators—, the denotation of predicates might change from world to world.

Unlike some formulations of SQML ([8] and [11], for example), in my formulation model M does not contain a distinguished member of W meant to represent the actual world. The philosophical reasons for that will become clear in the next section.[10]

An assignment in M is a function *s* that assigns each variable symbol to an object of D. $s[x|o]$ is the assignment that is exactly like *s*, except for variable *x*, which is assigned to $o \in D$. Given a model M = <W,R,D,V> and an assignment *s* in M, the denotation function $d_{M,s}(x)$ is defined as follows: if *x* is a constant symbol then $d_{M,s}(x)=V_C(x)$; if *x* is a variable then $d_{M,s}(x)=s(x)$.

Let M be a model <W,R,D,V>, $w \in W$ a world of W, *s* an assignment in M, α and β formulas, *p* an *n*-ary predicate symbol, *x* a variable symbol, *t* and *t'* two terms, and $t_1,\dots,t_n$ a *n*-tuple of terms. The validity relation $\Vdash$, having as parameters M, *w* and *s* on one hand, and a formula φ on the other ($M \Vdash_{w,s} \varphi$ means that φ is valid in M and *w* given *s*) is defined as follows:

- $M \Vdash_{w,s} p(t_1,\dots,t_n)$ iff $<d_{M,s}(t_1), \dots, d_{M,s}(t_1)> \in V_P(p,w)$;
- $M \Vdash_{w,s} t'=t''$ iff $d_{M,s}(t')=d_{M,s}(t'')$;
- $M \Vdash_{w,s} \neg\alpha$ iff $M \nVdash_{w,s} \neg\alpha$;
- $M \Vdash_{w,s} \alpha\wedge\beta$ iff $M \Vdash_{w,s} \alpha$ and $M \Vdash_{w,s} \beta$;
- $M \Vdash_{w,s} \alpha\vee\beta$ iff $M \Vdash_{w,s} \alpha$ or $M \Vdash_{w,s} \beta$;
- $M \Vdash_{w,s} \alpha\rightarrow\beta$ iff $M \nVdash_{w,s} \alpha$ or $M \Vdash_{w,s} \beta$;

[10] It might be argued that having a meeker model structure where there is no such distinguished world strengths the term “simplest” in the expression “simplest quantified modal logic”.

- $M \Vdash_{w,s} \forall x\alpha$ iff for any $o \in D$, $M \Vdash_{w,s[x|o]} \alpha$;
- $M \Vdash_{w,s} \Box\alpha$ iff for any $w' \in W$ such that wRw', $M \Vdash_{w',s} \alpha$.

Let φ be a formula and M a model. Two more general validity relations are defined as follows ($M \Vdash_w \varphi$ means that φ is valid in M and *w*; $M \Vdash \varphi$ that φ is valid in M):

- $M \Vdash_w \varphi$ iff for any assignment *s* in M, $M \Vdash_{w,s} \varphi$;
- $M \Vdash \varphi$ iff for any world $w \in W$, $M \Vdash_w \varphi$;

Let Γ be a set of formulas, α a formula and $\mathscr{F}$ a class of frames. The relation of logical consequence $\vDash$ is defined as usual: α is an $\mathscr{F}$-logical consequence of Γ (in symbols: $\Gamma \vDash \alpha$) iff for every $\mathscr{F}$-model M such that $M \Vdash \beta$ for every $\beta \in \Gamma$, $M \Vdash \alpha$. Mention to $\mathscr{F}$ might me omitted in the case $\mathscr{F}$ is identical to the set of all frames.

As far as axiomatization of SQML is concerned, there are different paths that can be followed. I will use any standard axiomatization of FOL with identity (which includes modus ponens and some version of the rule of generalization Gen: from α conclude $\forall x\alpha$) plus K, the Barcan formula (BF) and the rule of necessitation:

(K) $\Box(\alpha\to\beta)\to(\Box\alpha\to\Box\beta)$
(BF) $\forall x\Box\alpha\to\Box\forall x\alpha$
(N) from α conclude $\Box\alpha$.

The notions of derivation and deduction ($\vdash$) are defined in the usual way.[11] This axiomatics is sound and complete with respect to the set of all frames (that is to say, when $\vDash$ is constructed with $\mathscr{F}$ as the set of all frames).

If we add axiom T

(T) $\Box\alpha\to\alpha$

to this axiomatization, we obtain a version of the SQML that Hughes and Cresswell [3, p. 141-169] call the *modal lower predicate calculus*[12], which is sound and complete with respect to the set of all reflexive frames (that is to say, frames <W,R> such that R is reflexive: for every $w \in W$, wRw). If we further add axiom B

(B) $\alpha\to\Box\Diamond\alpha$

, we obtain an axiomatics that is sound and complete with respect to the set of all reflexive and symmetric frames (a relation R is symmetric iff, for every $w,w' \in W$, if wRw' then w'Rw).

If in addition R is transitive (for every $w,w',w'' \in W$, if wRw' and w'Rw'' then wRw'') we get an equivalence frame. Despite its apparent universality, equivalence frames can have *world gaps*, that is to say, pairs of worlds that are not related in any way to each other. One way to avoid that is to require a frame to be universal: that every $w,w' \in W$ be such that wRw''. All universal frames are equivalence frames, but not all equivalence frames

[11] The axiom of necessary existence (NE) and the converse Barcan formula (CBF)
(NE) $\forall x\Box\exists y(y=x)$
(CBF) $\Box\forall x\alpha\to\forall x\Box\alpha$
are theorems in this axiomatization.

[12] They do not use the expression "simplest quantified modal logic".

are universal frames. A weaker way to prevent world gaps is through what I call pseudo-universal frames. Let F = <W,R> be a frame and w,w'∈W. There is a path from *w* to *w'* (in symbols: wPw') iff (i) wRw' or (ii) there is w"∈W such that wPw" and w"Pw'. F is a *pseudo-universal frame* iff, for every w,w'∈W, wPw". Pseudo-universal frames are neither reflexive, nor symmetric nor transitive. However, in a pseudo-universal frame every world is at least indirectly related to each other.

The version of SQML I will use is based on K, BF, T and B on the proof-theoretical side, and on reflexive, symmetric and pseudo-universal frames, on the semantical side.[13] The reasons behind these theoretical choices will be explained in the following section.

5. The Semantic Foundations of the Concept of God

Let us see now how the idealistic R-theory of the concept of God can be represented within SQML, and why the version of the SQML just introduced is suitable for that.

The idealistic R-theory of the concept of God presupposes two kinds of objects: abstract objects on one hand, and non-abstract objects on the other. The domain D therefore will have two kinds of objects: abstract objects and non-abstract objects. From the point of view of SQML language, abstract objects are represented in the same way as nonabstract objects: through variables and constants. The idealistic R-theory of the concept of God also presupposes the existence of ideals, a special subcategory of abstract objects, as well as a distinguished ideal: the ideal exemplar of the category of beings that plays the role of our I-concept of God. This will be represented straightforwardly, through a special logical constant *g* meant to represent this distinguished ideal.

According to the idealistic R-theory of the concept of God, D-concepts of God are attempts to characterize the one and same I-concept of God. From a logical point of view, they are thus attempts to characterize the non-abstract object referred to by constant *g*. From a semantic point of view, they are exhaustively characterized by possible worlds.

A possible world *w* offers us a complete description of all objects, in the sense of all properties, be them relational or not, that they possess. In one sense, *w* is a complete description of the part of reality that can be represented with the help of the logical language. Since our logical language contains a constant representing the I-concept of God (*g*), *w* offers us a complete view on God, or a complete *theological worldview* if you will. More specifically, *w* provides us a complete characterization of the I-concept of God or, equivalently, a complete semantic D-concept of God. Since there is a plurality of D-concepts of God, there must be a plurality of worlds, or *theological worlds*, as I will call them. Thus, the need of a modal framework.

As far as the specific features of our SQML framework are concerned, we have as follows. Let M = <W,R,D,V> be a SQML model. From a general viewpoint, M should encompass the pertinent theological aspects of the social reality we live in. It should not cover all logically possible theological worldviews and concepts of God, but only those to which we attach some social, philosophical or religious relevance. The set of worlds W

[13] Although this logic is sound, it cannot be shown to be complete, for as it happens with universal frames, no modal formula is valid in all and only pseudo-universal frames.

therefore must be a proper set of the set of all possible worlds. Thus, the use of a K-semantics.

For the domain D, since constant symbol *g* is part of our logical vocabulary, there is an abstract object $o \in D$ that is the denotation of *g*. But since each theological world $w \in W$ is a complete description of *o*, *o* should exist in every theological world *w*. That is to say, D should be constant; it should be the same for every world $w \in W$. Moreover, *g* should denote the same object in all worlds. From a general point of view, constant symbols should be rigid designators.

For the accessibility relation R, there is an extent to which a theological worldview can be said to accept another theological worldview. For example, a Lutheran worldview would accept most protestant worldviews, and perhaps even most Christian worldviews. It could even be said to accept a Jewish worldview (although not perhaps a monist Vedānta worldview, for example). Even though these worldviews do not picture God in the exact same way as the Lutheran worldview, they are such that an ideally rational Lutheran would accept that God *could* be like depicted by them. It is a kind of conceptual acceptance that has to do with religious tolerance. To accept a theological world *w* does not mean to accept it, partially or as a whole, as true; instead, it means to accept that God could be like depicted by *w*.

This notion of theological-conceptual acceptance between worlds can be understood in terms of similarity: if *w* accepts *w*', then from a theological viewpoint, specially from the viewpoint of the concepts of God involved, *w* is similar to *w*'. It is this similarity-based relation of theological acceptance that I want to capture with the accessibility relation R. wRw' will thus be read as: *w* theologically accepts *w*'. As a similarity relation, R is reflexive and symmetric: for every $w,w' \in W$, wRw and if wRw' then w'Rw. But it is neither euclidean nor transitive: it might be that wRw' and w'Rw'' but not wRw'', and it might be that wRw' and wRw'' but not w'Rw''.

As far as not having a distinguished world to represent the actual world, this has to do with the *homogeneity/heterogeneity problem*. As I said, since I am taking the I-concept of God as an abstract object and allowing it to be characterized through properties (this is what D-concepts of God do), at least in principle there is legitimacy in talking about *the best* D-concept of God, or *the correct* D-concept of God. The best D-concept of God is the one which properly describes the object denoted to by *g*. So, my answer to the question of whether there is a best concept of God is, provisionally, yes. There is a heterogeneity in the existing D-concepts of God in the sense that, at the very least, one of them might be the best D-concept of God, or the correct D-concept of God.

But this is only half the story. While my approach accepts that there might be a best D-concept of God, it is silent as to which of the existing D-concepts of God is the best one. Putting it in semantic terms, there is no distinguishing theological world which might be said to be the semantical counterpart of the best D-concept of God. Consequently, there is no distinguished world meant to represent the actual world; if there were, its corresponding D-concept of God would naturally be taken as the actual or correct D-concept of God.

But I want to adopt an even more neutral approach regarding the homogeneity/heterogeneity problem. At least epistemologically, I want to take all concepts of God on an equal footing. In other words, I want to endorse the following principle:

(AA_C) We do not know what concept of God is the correct one.

This is what I call the *conceptual agnostic assumption*. There is of course another, more standard agnostic assumption:

(AA_E) We do not know whether GOD exists.

I call this the *extensional agnostic assumption*. In a sense, both AA_C and AA_E are general *desiderata* of a genuine pluralistic approach. While AA_C takes all concepts of God on an equal footing, AA_C allows for atheistic and agnostic worldviews.

Here one might object that AA_E cannot be satisfied in my modal approach. It seems that any theological world and theological worldview include the assumption that God exists. A Christian worldview seems to include the assumption that there is an entity that falls under the Christian concept of God, for example. As I have said, a theological world *w* might be seen as a complete theological worldview. Therefore, the Christian theological world *w* obviously includes the assumption that God exists. In other words, there is a nonabstract object $o \in D$ such that *o* is an instance of *g*.

In order to address this, I first point out that not every theological world and theological worldview is theistic. A theological worldview is a worldview that includes a view on God. As such, it might be either positive or negative regarding God's existence. This implies that there are atheistic worldviews and atheistic worlds. Even an atheistic worldview includes a specific concept of God. The difference is that an atheistic worldview denies that there is an object that falls under its specific concept of God. A theological world *w* is atheistic when there is no object *o* in *w* that is an instance of *g* (as characterized in *w*).

Second, if we are to have an extended atheistic worldview according to which there is no object that falls under any concept of God, we could see it not as a single theological world *w*, but as a set of theological worlds, or a model $M = \langle W,R,D,V \rangle$ in which, for all $w \in W$, there is no object *o* that is an instance of *g* in *w*. But if M is such that W contains both theistic and atheistic worlds, then M is agnostic. This, plus the fact that M does not choose one of W's theological worlds to be the actual world, makes M silent about the existence of God, as well as about which D-concept of God is the correct one. In this case, M satisfies both AA_C and AA_E. Since our set of worlds W is supposed to contain a plurality of views on God, which include both theistic and atheistic views, a general model M provides a neutral response to the homogeneity/heterogeneity problem.

6. Postulates of the Logic of the Concept of God

Besides constant *g*, there will be a few more special symbols with the help of which the formal postulates of the R-theory of the concept of God might be laid down.

Let C and A be two special predicate symbols representing, respectively, the property of being a I-concept and the property of abstractedness; C(x) means that *x* is a I-concept and A(x) that *x* is abstract. Since I-concepts are abstract objects and *g* is a I-concept, we have the two postulates below:

(C1) $\forall x(C(x)\rightarrow A(x))$
(C2) $C(g)$

There are also postulates about instantiation. As I said earlier, in the theory of ideal concepts instantiation is seen in terms of similarity: an object *o* is an instance of I-concept *c* if *o* is similar (enough) to *c*. This similarity relation can be represented with the help of the special (binary) predicate symbol $\cong$. $x\cong y$ means that *x* is similar to *y*. $\cong$ might be formalized with the help of the following postulates, which set $\cong$ as an equivalence relation:

(M1) $\forall x(x\cong x)$
(M2) $\forall x\forall y(x\cong y\rightarrow y\cong x)$
(M3) $\forall x\forall y\forall z(x\cong y\rightarrow(y\cong z\rightarrow x\cong z))$

The two additional postulates of $\cong$ require a more precise characterization of the notion of D-concept of God. From the point of view of the logical language, a D-concept of God is a positive description of *g* containing predicates that can be possessed by nonabstract objects. It can thus be of any logical form, provided it does not contain either C or A and entails a positive atomic formula about *g*. The positiveness requirement is important, for an exclusively negative description does not really characterize what God is, only what it is not. Formally we have as follows.

A formula α is *SP-free* iff it does not contain any special symbols; a *set* of formulas Γ is *SP-free* iff it contains only SP-free formulas. Let δ be a SP-free formula. δ is a *D-concept of God* iff $\{\delta\} \vdash D(g)$[14], where D is an arbitrary predicate symbol.

Here are the two remaining postulates of $\cong$, which are schemas for formulas:

(M4) $\forall x\forall y(x\cong y\rightarrow(\alpha\leftrightarrow\alpha[y/x]))$, where α is a SP-free formula
(M5) $\forall x((\alpha\leftrightarrow\alpha[g/x])\rightarrow x\cong g)$, where α is a D-concept of God

$\alpha[y/x]$ is the result of substituting *x* for some, but not necessarily all, occurrences of *y* in α. Given a specific D-concept of God δ, $\forall x((\delta\leftrightarrow\delta[g/x])\rightarrow x\cong g)$ is called an *δ-instance of M5*.

I am interpreting $\cong$ in the strongest possible way, in terms of an identity-like relation[15]. M4 is a general similarity-conceptual version of the law of indiscernible of identicals. In its turn, M5 is a similarity-conceptual version of the law of identity of indiscernibles restricted to God. M5 is the basis of our categorization process; it allows us to say whether a nonabstract object is an instance of the concept of God. The use of these postulates will be clear in the next section.

Instantiation is made clear with the help of I, our last special predicate symbol:

(C3) $\forall x\forall y(I(x,y)\leftrightarrow(x\cong y)\wedge\neg C(x)\wedge C(y))$

I(x,y) means that *x* is an instance of I-concept *y*. See that C3 allows for abstract instances of I-concepts[16]. But we know that if God exists, it is a nonabstract entity. Therefore, we need a postulate requiring that for *x* to be an instance of *g*, it must be nonabstract:

[14] The semantic version of the inference relation $\vDash$ could have been used here as well.
[15] A weaker interpretation of $\cong$ would require a second order language.
[16] Although an abstract object, the number 2 is an instance of the concept of number.

(C4) $\forall x(I(x,g)\rightarrow\neg A(x))$

C3 also allows an I-concept to have more than one instance, which goes against AM. We therefore need an additional postulate to guarantee that the I-concept of God *g* is in fact monotheistic:

(C5) $\forall x\forall y(I(x,g)\rightarrow(I(y,g)\rightarrow x=y))$

C5 says that if *x* and *y* are both instances of *g*, then *x* is identical to *y* (or to be more precise, *x* and *y* denote to the same object).

There are two remaining postulates:

(C6) $\forall x(C(x)\rightarrow\Box C(x))$
(C7) $\forall x(\Diamond I(x,g)\rightarrow I(x,g))$

C6 states that an I-concept is necessarily an I-concept. Recall that *g* is supposed to represent the (same) I-concept of God in all theological worlds. A consequence of C6 is that I-concepts are necessarily abstract. Thus, we have our first theorem:

(T1) $\forall x(C(x)\rightarrow\Box A(x))$[17]

Since this restriction applies only to I-concepts, abstract objects that are not I-concepts might be said to be abstract only contingently. The same holds for nonabstract objects and concrete objects (as I explained earlier, concreteness is a subcategory of nonabstractness)[18].

C7 states that if it is possible that *x* is an instance of the I-concept of God, then *x* is an instance of the I-concept of God. C7 is also required by AM: if for example I(a,g) is true at world *w*', then I(a,g) not being true at the world of reference *w* opens the door for a situation where I(b,g) and a≠b are true at *w*, which would imply the I-concept of God *g* having two instances.

C7 entails that if it is possible that there is an instance of God, then there is an instance of God:

(T2) $\Diamond\exists x(I(x,g))\rightarrow\exists x(I(x,g))$

It also entails that if *x* is an instance of God, necessarily it is an instance of God:

(T3) $\forall x(I(x,g)\rightarrow\Box I(x,g))$

Other consequence of C7 is that if *x* is an instance of God, then it is necessarily a nonabstract object:

(T4) $\forall x(I(x,g)\rightarrow\Box\neg A(x))$

There still an important consequence of C7 that comes along when we take C5 into account. C5 guarantees an intraworld monotheism, as we might call it: if *x* and *y* are both instances of God, then *x* is identical to *y*. But C7 guarantees that if *x* is an instance of God in a world *w*', then it is also an instance of God in the world of reference *w*. We therefore have a transworld monotheism according to which if *x* is an instance of God in some world *w*', then if *y* is an instance of God in the world of reference *w*, then *x* is identical to *y*:

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17 The derivation of this and the other theorems is in Section 9.

18 In special, this implies that there might an object *o* that in world *w* is abstract, but in world *w*' is concrete. This allows us to respond to several actualist objections that are usually raised against SQML. See [8].

(T5) $\forall x\forall y(\Diamond I(x,g)\rightarrow(I(y,g)\rightarrow x=y))$

But this works only if there are no world gaps, that is to say, worlds that in no way are related to each other. Formally a world gap could be defined as follows. Let F = <W,R> be a frame. F has world gaps iff there are w,w'∈W such that there is no path from *w* to *w*" (in symbols: wPw"). If F has world gaps, then it might be that, for w,w'∈W, $M \Vdash_{w,s} I(x,g)$ and $M \nVdash_{w',s} I(x,g)$, which opens the door for the possibility that $M \Vdash_{w',s} I(y,g)$ with $M \nVdash_{w',s} x=y$, which violates AM. So, the need of having only pseudo-universal frames.

A final and trivial consequence (of C2) is that *g* is necessarily an I-concept:

(T6) $\Box C(g)$

7. A SQML Theory of the Concept of God, or the Logic of God

What I call an *SQML theory of the concept of God*, or the *Logic of God*, for short, is a theory in the logical sense of a set of formulas of the logical language (in this case, modal first-order language with identity) to be used along with the logical inferential machinery (in this case, the version of SQML described in Section 4.) It is built upon the postulates introduced in the previous section, and has two parameters: a set of D-concepts of God and what I call a theological background. Besides, it also uses the operator $\wp$ that produces the modal version of a given set of formulas. Below are the definitions.

A *theological background* is an SP-free set of SQML formulas representing known facts about the world as well as formulas setting the relations between the pertinent (non-special) predicate symbols. Let Σ be a set of formulas of SQML. $\wp(\Sigma)$ is defined as follows: (i) if $\alpha\in\Sigma$, then $\Diamond\alpha\in\wp(\Sigma)$; (ii) nothing else belongs to $\wp(\Sigma)$.

Let Γ be a theological background and Λ a SP-free set of SQML formulas containing only D-concepts of God. Let also Π_4 be the set containing all, and only all, instances of M4, and Π_5 the set containing all, and only all, δ-instances of M5, for all $\delta\in\Lambda$. The Λ-*SQML theory of the concept of God* applied to Γ is the set of SQML formulas Γ_Λ defined as follows: (i) $\Gamma\subset\Gamma_\Lambda$; (ii) $\wp(\Lambda)\subset\Gamma_\Lambda$; (iii) $\{C1, \ldots, C7\}\subset\Gamma_\Lambda$, (iv) $\{M1, \ldots, M3\}\subset\Gamma_\Lambda$; (v) $\Pi_4\subset\Gamma_\Lambda$; (vi) $\wp(\Pi_5)\subset\Gamma_\Lambda$; (viii) nothing else belongs to Γ_Λ.

Let me explain this definition with the help of an example. Let the predicate symbols P, K, B and R be such that P(x) means that *x* is omnipotent, K(x) that *x* is omniscient, B(x) that *x* is wholly good and R(x) that *x* is the creator and sustainer of the world. The formula below represents what we might call the triple-O D-concept of GOD:

(P_1) $P(g)\wedge K(g)\wedge B(g)\wedge R(g)$

From it, other D-concepts of God can be obtained. If 3O(x) is an abbreviation for $P(x)\wedge K(x)\wedge B(x)\wedge R(x)$, and F and T are such that F(x) means that *x* incarnates in the world and T(x) that *x* is transcendental to the world, in the sense of being outside space and time, we have the following additional D-concepts of God:

(P_2) $3O(g)\wedge F(g)$

(P_3) $3O(g)\wedge T(g)$

Let Λ be an SP-free set of SQML formulas containing only D-concepts of God such that $P_1,P_2,P_3 \in \Lambda$. Let also Γ be a theological background such that $\Gamma \vdash P_4$, where P_4 is as follows:

(P_4) $\forall x(T(x) \rightarrow \neg F(x))$

First, the formulas of Γ belong to Γ_Λ. But $\Gamma \cup \Lambda$ is an inconsistent set; given Γ, P_2 and P_3 are contradictory D-concepts of God. So, adding Λ to Γ_Λ turns Γ_Λ into an inconsistent set. Therefore, due to this, or more generally to the possibility of contradictory D-concepts of God, D-concepts of God should be kept apart from each other. They should be in different theological worlds, which is the very idea behind the semantic association between D-concepts of God and theological worlds. Thus, Γ_Λ considers $\wp(\Lambda)$ instead of Λ. P_2 and P_3 do not belong to Γ_Λ. Instead, it is their modal versions that do:

(P_5) $\Diamond(3O(g) \wedge F(g))$
(P_6) $\Diamond(3O(g) \wedge T(g))$

Third, postulates C1 to C7 belong to Γ_Λ, as well as M1 to M3. Since M4 and M5 are schemas of formulas, they require a special treatment. All instances of M4 are members of Γ_Λ. For M5, the situation is a bit more complex.

M5 only works if a D-concept of God δ is a *purportedly complete* D-concept of God, so to speak. According to my definition of D-concept of God, $P(g) \wedge K(g)$ is a D-concept of God: it is a SP-free formula such that $\{P(g) \wedge K(g)\} \vdash P(g)$. Its instance of M5 is: $\forall x((P(g) \wedge K(g) \leftrightarrow P(x) \wedge K(x)) \rightarrow x \cong g)$. Now, suppose that there is a nonabstract object *b* such that $P(b) \wedge K(b)$ and $\neg B(b) \wedge \neg R(b)$. From that, we would get the conclusion that $b \cong g$, and from C3 that an entity that is omnipotent and omniscient, but not wholly good nor the creator and sustainer of the world, is God. To prevent this, M5 should be applied only to those formulas we previously set as D-concepts of God. Thus, the restriction of considering only δ-instances of M5, for all $\delta \in \Lambda$.[19] But there is a further restriction. It is not the δ-instances of M5

(P_7) $\forall x((3O(g) \wedge F(g) \leftrightarrow 3O(x) \wedge F(x)) \rightarrow x \cong g)$
(P_8) $\forall x((3O(g) \wedge T(g) \leftrightarrow 3O(x) \wedge T(x)) \rightarrow x \cong g)$

that belong to Γ_Λ, but their modal versions:

(P_9) $\Diamond \forall x((3O(g) \wedge F(g) \leftrightarrow 3O(x) \wedge F(x)) \rightarrow x \cong g)$
(P_{10}) $\Diamond \forall x((3O(g) \wedge T(g) \leftrightarrow 3O(x) \wedge T(x)) \rightarrow x \cong g)$

The reason for that is the same as the one why we consider $\wp(\Lambda)$ instead of Λ: the possible contradictory plurality of D-concepts of God. We want to keep not only the D-concepts of God apart from each other, in different theological worlds, but also the postulates that say when one object falls into a given D-concept of God.

Two last comments are in order. First, in the same way that there might be contradictory D-concepts of God, that is to say, conflicting descriptions of *g*, there also might be conflicting descriptions of an eventual object that falls under *g*. Let me explain this from a semantical viewpoint. Let $M = \langle W,R,D,V \rangle$ be a model such that $M \Vdash \alpha$ for all

[19] Or course, if we were using second order logic, we could represent M5 so that this maneuver would not be necessary.

$\alpha\in\Gamma_{\Lambda}$. Let also w,w'$\in$W be such that wRw', M $\Vdash_w P_2$, M $\Vdash_w P_7$, M $\Vdash_{w'} P_3$ and M $\Vdash_{w'} P_8$. Suppose now that M $\Vdash_w 3O(a)\wedge F(a)$ and M $\Vdash_{w'} 3O(b)\wedge T(b)$. Then we will have that M $\Vdash_w$ I(a,g) and M $\Vdash_{w'}$ I(b,g). But through C7 we have that M $\Vdash_w$ I(b,g) and M $\Vdash_{w'}$ I(a,g), and through C5 that M $\Vdash_w$ a=b and M $\Vdash_{w'}$ a=b. But since P_7 is valid in both w and w', we have that M $\Vdash_w F(a)$ and M $\Vdash_{w'} \neg F(b)$, and M $\Vdash_{w'} T(b)$ and M $\Vdash_w \neg T(a)$. Thus, GOD—the object that falls under the concept of God—is described in contradictory ways in *w* and *w*'. This is further evidence that my framework properly deals with the plurality of views on GOD.

Second, it should be pointed out that if Λ is such that there are no contradictory D-concepts of God, it might happen that there is a core D-concept of God, which is the description of God that is shared by all D-concepts of God. If, for example, $\Lambda = \{P_1,P_2\}$ then P_1 will be the core D-concept of God. We would thus have that $\Gamma_{\Lambda} \vDash \Box P_1$.

8. Conclusion

In this paper I presented a formalization of the theory of ideal concepts applied to the concept of God, or more specifically: a logical pluralistic special R-theory of concepts applied to the concept of God. It was done within a version of the Simplest Quantified Modal Logic (SQML), and was meant to solve the three following problems: the unicity of extension problem, the homogeneity/heterogeneity problem and the problem of conceptual unity. From a more general viewpoint, the formalization addressed the following questions: (i) How can the concept of God be formally represented? (ii) Are there any logical principles governing it? (iii) If so, what kind of logic lies behind them? (iv) Can there be a logic of the concept of God after all?

9. Annex: Derivations

Here are the derivations of the theorems. A1 is FOL axiom/theorem $\alpha(t)\rightarrow\exists x\alpha[t/x]$; R1 and R2 are FOL derived rules $\forall x\alpha(x)\vdash\alpha[x/t]$ and $\alpha\rightarrow\beta,\beta\rightarrow\varphi\vdash\alpha\rightarrow\varphi$, respectively; R3 is FOL derived rule $\alpha[x/c]\rightarrow\beta\vdash\exists x\alpha\rightarrow\beta$, where c is a constant that does not appear either in α or β (it can be obtained from rule El (Enderton 1972, p. 117) along with theorem of deduction)

(T1) $\forall x(C(x)\rightarrow\Box A(x))$

1. $\forall x(C(x)\rightarrow\Box C(x))$	C5
2. $C(x)\rightarrow\Box C(x)$	R1 1
3. $\forall x(C(x)\rightarrow A(x))$	C1
4. $C(x)\rightarrow A(x)$	R1 3
5. $\Box(C(x)\rightarrow A(x))$	N 4
6. $\Box(C(x)\rightarrow A(x))\rightarrow(\Box C(x)\rightarrow\Box A(x))$	K
7. $\Box C(x)\rightarrow\Box A(x)$	MP 5,6
8. $C(x)\rightarrow\Box A(x)$	R2 2,7
9. $\forall x(C(x)\rightarrow\Box A(x))$	Gen 8

(T2) $\Diamond\exists x(I(x,g))\rightarrow\exists x(I(x,g))$

1. $\Diamond\exists x(I(x,g))\rightarrow\exists x\Diamond I(x,g)$ BF

2. $\forall x(\Diamond I(x,g)\rightarrow I(x,g))$ C6
3. $\Diamond I(a,g)\rightarrow I(a,g)$ R1 2
4. $I(a,g)\rightarrow\exists x(I(x,g))$ A1
5. $\Diamond I(a,g)\rightarrow\exists x(I(x,g))$ R2 3,4
6. $\exists x\Diamond I(x,g)\rightarrow\exists x(I(x,g))$ R3 5
7. $\Diamond\exists x(I(x,g))\rightarrow\exists x(I(x,g))$R2 1,6

(T3) $\forall x(I(x,g)\rightarrow\Box I(x,g))$

1. $\forall x(\Diamond I(x,g)\rightarrow I(x,g))$ C6
2. $\Diamond I(x,g)\rightarrow I(x,g)$ R1 1
3. $\Box(\Diamond I(x,g)\rightarrow I(x,g))$ N 2
4. $\Box(\Diamond I(x,g)\rightarrow I(x,g))\rightarrow(\Box\Diamond I(x,g)\rightarrow\Box I(x,g))$ K
5. $\Box\Diamond I(x,g)\rightarrow\Box I(x,g)$ MP 4,3
6. $I(x,g)\rightarrow\Box\Diamond I(x,g)$ B
7. $I(x,g)\rightarrow\Box I(x,g)$ R2 6,5
8. $\forall x(I(x,g)\rightarrow\Box I(x,g))$ Gen 7

(T4) $\forall x(I(x,g)\rightarrow\Box\neg A(x))$

1. $\forall x(I(x,g)\rightarrow\neg A(x))$ C3
2. $I(x,g)\rightarrow\neg A(x)$ R1 1
3. $\Box(I(x,g)\rightarrow\neg A(x))$ N 2
4. $\Box(I(x,g)\rightarrow\neg A(x))\rightarrow(\Box I(x,g)\rightarrow\Box\neg A(x))$ K
5. $\Box I(x,g)\rightarrow\Box\neg A(x)$ MP 3,4
6. $\forall x(I(x,g)\rightarrow\Box I(x,g))$ T3
7. $I(x,g)\rightarrow\Box I(x,g)$ R1 6
8. $I(x,g)\rightarrow\Box\neg A(x)$ R2 7,5
9. $\forall x(I(x,g)\rightarrow\Box\neg A(x))$ Gen 8

(T5) $\forall x\forall y(\Diamond I(x,g)\rightarrow(I(y,g)\rightarrow x=y))$

1. $\forall x\forall y(I(x,g)\rightarrow(I(y,g)\rightarrow x=y))$ C4
2. $I(x,g)\rightarrow(I(y,g)\rightarrow x=y)$ R1 1 (2x)
3. $\forall x(\Diamond I(x,g)\rightarrow I(x,g))$ C6
4. $\Diamond I(x,g)\rightarrow I(x,g)$ R1 3
5. $\Diamond I(x,g)\rightarrow(I(y,g)\rightarrow x=y)$ R2 4,2
6. $\forall x\forall y(\Diamond I(x,g)\rightarrow(I(y,g)\rightarrow x=y))$ Gen 5 (2x)

(T6) $\Box C(g)$

1. $C(g)$ C2
2. $\Box C(g)$ N 1

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