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Actualistic Foundation of Possibilism

Abstract: In this article I defend a form of classical possibilism with an actualist foundation. As a matter of fact, I believe that this position is more in keeping with the classical metaphysical tradition. According to this form of possibilism, I construe possible objects as possible non-existing objects of an existing producing power. Consequently, they are nothing *vis-à-vis* the modality of their own actual being, although they do exist with regard to the modality of the producing power's being. The actualist requirement prescribed by the Frege-Quinean criterion of the quantification domain is thus fulfilled; indeed, really possible objects are not actual objects, but their possibility is actual.

Keywords: actualism, existence predicate, possibilism, possible worlds semantics

1 Introduction

Actualism adheres the ontological modalities of being to actuality: there is no object that is not actual. This is its strength, since being actual means not being nothing and if something is nothing, you cannot say it can be. This, moreover, is the challenge that actualism poses to possibilism. Possibilism states that alongside actual objects there are also possible objects. However, how is this possible if being actual means to not be nothing? What is *stricto sensu* possible, in fact, is not actual. Thus, something that is possible should be nothing – something that is a non-existent. This is the paradox of non-existing possible objects, creating the anti-nomicity problem of possibilism. How can the possibilist respond to the actualistic challenge? In my opinion, the possibilist can escape from the corner that the actualist has pinned him to only by assuming that there is a relation-bridge between the existence of a possible *x* and the actuality of the fact that *x* is possible. In other words, the possibilist must assume the principle – in the form of an axiom-bridge – that if something is possible then its possibility is actual and vice versa. My intention is to show how this principle can be justified within a modal structure capable of characterising the notion of an actual object as a possible existing. The

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Section 2 of this article is dedicated to the presentation of the essential lines of this structure (Ontolological Frame F).[1] In the Section 3, the theory of possibility as producibility is grafted onto the F structure, which provides tools from which the possibilist can respond to the challenge of the actualist. In the Section 4 I attempt to draw comparisons to other conceptions of the possibilismus. The section makes some remarks on Planting's possibilismus and on Zalta and Williamson's actualism.

2 Ontological Frame F

A ontological frame F is a tuple (W, R, D, P, e, Π), where
1. W is a non-empty set of worlds;
2. R is a non-empty set of objects
3. D is a total relation to W
4. P is a non-empty set of attributes
5. e is a function from W to Pot(D)
6. Π is a partition of D

Let us illustrate each of the principles introduced above.

2.1 Possible Worlds and Accessibility Relation

W is a set of possible worlds. u, v, w, and so on are variables ranging over W. W is made up of ontologically possible worlds. Relation R of accessibility between worlds is a total relation. This establishes that every world is a possible alternative to every other. Relation R expresses the metaphysical and hence unconditional nature of the notion of possibility inherent in the structure.

2.2 Definition of D and of Real Possibility.

First, we presuppose the distinction – of Kantian origin – between non-existential predicates,[2] which are real in Kant's terminology, and the existence predicate, a non-real predicate. A real predicate defines how an object is determined (order of

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1 The F structure is the basic structure of the CML modal system. See Galvan and Giordani (2020) where the structure provides the model to demonstrate correctness and completeness of the system CML.

2 The distinction predicate/attribute is not important in this context. We use the terms "predicate" and "attribute" synonymously.

sosein). Conversely, the existence predicate states if an object is actual in one world or another (order of *dasein*).

Second, D is a set of possible objects characterised by attributes from set P. These objects are analytically possible objects, which necessarily satisfies the only requirement of coherence. In any possible world, all analytically possible entities are present[3] within it since all the consistently definable objects are analytically possible in every possible world. Nevertheless, in such worlds there are possibles characterised, not just by the non-existential properties that they – invariably – have in all other worlds, but also by existence. These are, therefore, the possibles that exist or that are actual in a world, i.e., the entities that would really exist if the world in which they exist were actualised. Really (and not just analytically) possible entities are the possibles that exist in at least some possible worlds. In this way, the possibles are divided into two types: really possible entities (real possibles) and entities that are only analytically possible (pure possibles). The former are actualised objects (i.e., endowed with existence) at least in a possible world while the latter are non-actualised objects (i.e., not endowed with existence) in no possible world.

Third, the objects of the domain are conceived as complete objects, i.e. as objects determined for every attribute (property or relation). The completeness requirement of possible objects can be expressed as follows: for any individual x and for any attribute P, it is true that Px is true or false. We assume that the individual variables, when not quantified, act as individual names. In this way, the individuals of the domain can be denoted by the signs x, y, z, … which stand for specific objects in the individual domain. Moreover, as we shall see below, the individual names are taken to be rigid designators.

Fourth, it does not matter how the worlds are conceived. They can be conceived as both story worlds or section worlds. What is important is that the domain of possibles is constant in every world. Only an existing possible can vary from world to world.

2.3 Definition of P.

P is a set of attributes (properties and relations) defined on D. In a modal context, attributes can be understood either intensionally or extensionally. An intension is given as a function that establishes the extension of the attribute for every world. In our semantic apparatus, however, it is important to establish that for all non-

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3 Note: we use the term "present" – not "existent" – since existence does not necessarily pertain to all analytically possible entities.

existential attributes, the intension of the attribute fixes the same extension in each world, as non-existential attributes are conceived in a rigid manner. This is the case because individuals of D are possible objects, and possible objects do not vary with respect to non-existential attributes, but do so solely because they exist or otherwise in a world, i.e., because they are actualized or otherwise in that world.

Of particular importance in set P are attributes corresponding to the predicates of identity and ontological coincidence. The attribute of existence is the only attribute understood in a non-rigid manner.

2.3.1 The Identity Predicate

Identity $x = y$ declares, as usual, that the individual denoted by x and the individual denoted by y are the same individual within a world. The identity relation divides the domain of the language into equivalence classes that include only one element.

2.3.2 The Coincidence Predicate

We begin with an example. Let x be the name for Socrates seated and let y be the name for Socrates standing. However, a relation of identity cannot be predicated between x and y, as this notion obeys the law of substitution with identity (Leibniz's law of the indiscernibility of identicals) stating that all attributes of x must also pertain to y, which is impossible in our case. It is true that Socrates standing is the same Socrates who in another world is seated. However, this is precisely so in another world. In the first world, Socrates standing is the same Socrates who will be seated in the second, but this is not identical to Socrates standing. However, x is not unrelated to y. Between x and y there is a relation of identity *mediated* by the notion of possible worlds. Socrates seated is the same Socrates who is standing in a world alternative to the actual one. This mediated relation of identity we shall call *ontological coincidence* relation (between possibles), and we shall denote it with $\approx$. Thus $x \approx y$ means that x is a possible actualizable in some other world like y. Henceforth we shall also say that x and y represent two different *individuations* of the same individual. Unlike $=$, coincidence relation $\approx$ partitions the domain D of the frame F into equivalence classes including several elements. Every class contains all and only ontologically coincident possibles. $\prod$ is the class of equivalence classes of D *modulo* the relation of ontological coincidence. These two types of numerical identity relations are connected in that since an individual is always identical to itself, it coincides with itself in every world such that $x = y$ entails $x \approx y$.

2.3.3 Existence Predicate

The basic premise of the ontological structure is that possible objects are the same in all worlds: what varies from world to world is only the extension of the existence predicate. Consequently, while domain D of possible objects does not vary from world to world in such a way that these objects are identical with respect to real predicates in all worlds, they can be actual in one world and non-actual in an alternative world. The possibles actualised in a world are only the possibles that exist in that world, i.e., the possibles that the property of existence E includes. Thus, the possible denoted by x is actualised in world u if and only if Ex is true in u. The variation of the extension of E from world to world is expressed by the function e: W $\mapsto$ Pot(D). The function e meets three requirements.

1. Existence condition: $\forall u(\emptyset \neq e(u) \subset D)$

The existence condition ensures that the extension of the predicate of existence is not empty in every possible worlds. This means that in every world, at least one possible must be actualised. The rationale of this condition is obvious. A world in which at least one possible does not exist, is really impossible, since in it nothing would exist, which is impossible. In other words, the real possibility of a world can only be founded on individuals who are really possible and therefore existent within it; conversely, a world founded on purely thinkable individuals is an imaginary world.

2. Coherence condition: $e(u) \subseteq S(\prod)$, where: (i) $\prod$ is the set of equivalence classes determined by coincidence relation $\approx$ on D and (ii) $S(\prod)$ is a selection set with respect to $\prod$, i.e., a set that includes only one element for each of the equivalence classes induced by coincidence relation $\approx$.

The coherence condition establishes that every possible world only includes a single existent individual of each equivalence class. This is reflected by the definition of the existence predicate and of the identity and coincidence relations. In fact, the property of existing in a world cannot be predicated by distinct, i.e., not identical, and yet coincident possible objects. If it could, a contradiction would immediately arise, as the same individual would exist in the same world in two different individuations and would therefore be determined by two different sets of attributes: Socrates would be both seated and standing in the same possible world. Consequently, an individual can possess different individuations, but only in different worlds. Two different individuations of the same individual cannot be actual in the same world.

3. Limited condition of exhaustiveness: not necessarily $\forall x \exists u(x \in e(u))$

$e(u)$ satisfies the limited – not general – condition of exhaustiveness because it is not necessarily true that for every element x of D, there exists a possible world in which x is actual. Included in D, in fact, are also purely possible individuals who are not actual in any possible world. In other words, the exhaustiveness condition is not generally satisfied because possible existence coincides with real possibility and not with pure analytical possibility. If possible existence coincided with analytical possibility, one could correctly assume, for every possible (= non-contradictory) object, a possible (= non-contradictory) world in which the object is actualised. Instead, once it has been posited that possible existence coincides with real possibility – not with purely analytical possibility – and that possible worlds are ontologically (really) possible worlds, we may not exclude the possibility that a non-contradictory object may not be actualised in any world.

REMARK: This approach relies on constant domain models with a existence predicate. However, it is not a standard approach[4] insofar as its quantified language does not satisfy the condition of existence relativization for each formula. Quantification can concern variables not restricted by the existence predicate given the assumption that the truths concerning the essential structure (expressed by real Kantian predicates) of objects hold for non-existent objects as well. Thus our approach rejects the so-called serious actualism ($\varphi(x)$ implies $E(x)$, where $\varphi(x)$ is a real predicate), according to which an object cannot possess a property without existing. In fact, the existence predicate is conceived of as a genuine predicate, and not as an existence determinator, which determines referents of variables as members of particular domains.

3 The Actuality of a Possible

Structure F forms the basis of a possibilistic theory equipped with the resources to meet the challenge of the actualist. The first part of this theory consists of a distinction between purely possible objects and really possible objects. All possible objects are indiscriminately present in all possible worlds, but not all possible objects are really possible. Now, possible objects whose existence is legitimately attributed in an actualistic sense – and therefore those for which it makes sense to quantify – are the only really possible ones. Why? Because only the really possible exist in some possible world, and this means that in that world they are actual. The actualist can however reiterate his objection by saying that, until that world is actualized, even possible existing ones are not actual. How is it possible, then, to say that their possibility is actual? The answer to this question

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4 For a standard approach see Fitting and Mendelsohn (1998), p. 95 ff.

comes from the second part of the theory, which is constructed from the conception of real possibility as producibility. According to this concept, the possibility of x originates in the capacity to have x exist – on the part of the producer – and be received – on the part of the product x. Existence predicate E, introduced above, is the key concept in the formulation of the possibilistic thesis. The existence predicate expresses the idea of the actualisation of a possible and at the same time the idea that what can produce the possible must itself be actual, i.e., possess existence.

3.1 The Concept of a Possible

The notion of real possibility as producibility is an extension of the Aristotelian notion of potentiality. Similar to the latter notion, the notion of real possibility implies that potentials or powers[5] exist, though no constraint is applicable to their nature and origin. These powers may be grounded in individual substance, or may be powers that come from without. The notion is abstract to the point of allowing the producing power to be external from the produced object. What is characteristic of the notion of possibility is the dualism between power on one hand and the object of this power on the other. The relation between power and the object of power is analogous to the relation between a mental attitude and the object of that attitude. In the sentences "I wish my son had passed his exam", "I can complete this project come true" and "I think you speak sincerely", the verbs all express mental attitudes directed at objects. Producing powers, too, are directed at their objects.[6] Thus, possible objects are ontologically determined by:
1. the producing power, which is the foundation of the possible object;
2. the content or object of that power, which is the possible object itself.

Let us consider a possible object such as the possible Socrates. Let S be the predicate which, being the name of the property as "being-Socrates", identifies Socrates.[7] The possible Socrates must be understood as that x which is Socrates where it is possible that it exists. The first conjunct – x, which is Socrates – of the description can be easily translated into the expression Sx. For the second conjunct – x, denoting that it is possible that it exists – we must make use of the possibility operator $\Diamond$ followed by the formula that states that x exists. Then, the possible Socrates can be formalised through the following iota-term: $\iota_x(Sx \land \Diamond Ex)$,

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5 See Molnar (2003).

6 For a further analysis of the intentional character of the powers, see Molnar (2003, pp. 60–81).

7 Please note that S denotes a particular attributive variant of Socrates's essence.

that is, the only *x* that is Socrates and possibly exists. Please note that the "reality-directed" qualifier of possibility is expressed in the functional term by the existence predicate. This means that the possible is an object that has certain specific characteristics and, as a consequence, can exist. However, *how* can its existence be possible? Well, it is possible because the power to produce it *actually exists*. Now, let us indicate as PROD(*y*, *x*) the production relation that the object *y* has with *x*. From an Aristotelian standpoint, *y* is considered to be an agent, though in abstract semantics it does not really matter what *y* is considered to be. What does matter is that *y* brings the producing power to *x* and that *y* exists. If *y* did not exist, it could not produce *x*, since producing involves bringing into existence or conferring existence. With this in mind, principle:

$$\exists y\,(Ey \wedge \Diamond \mathrm{PROD}\,(y,\, \iota_x Sx))$$

states that the possibility of $\iota_x Sx$ is founded in the reality of *y*. In addition, from:

$$\forall y\,(Ey \rightarrow \forall x\,\Box\,(\mathrm{PROD}\,(y,\,x) \rightarrow Ex))$$

it follows that

$$\exists x\,(Sx \wedge \Diamond Ex)$$

which confirms the real possibility of $\iota_x Sx$.

　　The above reasoning may be briefly summarised by stating that the possible Socrates is made up of its essence, which consists of "being Socrates" and its modality of being (as possible). This modality consists of "being the subject of a producing power". Briefly put:

$$\text{The possible Socrates}\;\; = \iota_x\,(Sx \wedge \exists y\,(Ey \wedge \Diamond \mathrm{PROD}\,(y,\,x)))$$

3.2 Resolution of a Challenge

Some may argue that in the formulation of the notion of a real possible as $\iota_x(Sx \wedge \exists y(Ey \wedge \Diamond \mathrm{PROD}(y,x)))$ the use of a ι-operator is not entirely justified. As is known, the use of a ι-operator is legitimate only when the conditions of existence and unicity are satisfied. Now, the condition of existence depends on the existence of the production force and is therefore justified on a case-by-case basis. The condition of uniqueness, on the other hand, must be ensured a priori based on the pain of the same possibility of defining the notion of real possibility. However, in this regard there are no difficulties. Uniqueness is guaranteed by particularity of attributive variant *S* of Socrates and by the condition of coherence of the predicate of existence. If a particular attributive variant of Socrates exists in a world *u*, e.g.,

Socrates the baseball player, in the same world, the husband of Santippe, could not exist. There is, therefore, only one individual who is actual in a certain world and who is Socrates in a specific attributive variant.

3.3 Actualistic Grounding of Possibilismus

At this point we are able to show that there is a relation-bridge between the existence of a possible x and the actuality of the fact that x is possible. Let us use A as a actuality operator and [ ] as a factualization operator. Then the formalisation of the bridge-principle should be $A([Sx \wedge \Diamond Ex]) \leftrightarrow A([\exists y(Ey \wedge \Diamond PROD(y,x))])$ and this is immediately true. In fact, how would it be possible for the possibility of x to be actual – or rooted in the actual world – if there were no power in the actual world to produce precisely x, i.e., if x were not, in the actual world, the object of the power of production even in another world? Therefore, the actual possibility of producing x *coincides* with the actual existence of the possible x. In other words, the being of a possible object consists of being the object of a power, where such an object, in itself (that is, stripped of its relation to the producing power), is actually nothing, though it is not nothing when the actuality of power of which it is the object is considered. The different viewpoints from which one can regard possible objects tell us in what sense a possible object is and in what sense it is not. Moreover, the duplicity of ways in which we can consider possible objects legitimates the extension of quantifiers to possible objects. Indeed, one of these aspects is the producing power; the producing power, though, is actual, and consequently, possible objects are also actual by virtue of being objects thereof.

3.4 A Historical Nod to Classical Possibilism

The kind of possibilism I uphold in this paper is deeply rooted in the classical tradition from Aristotle to Leibniz, although it cannot be identified from any of the historic theories that can be traced back to the authors of that tradition. The proposed position is meant to challenge the positions found within the contemporary debate. In any case, to stress how deeply possibility by producing power is rooted in classical ideas, I shall refer to my position as *classical possibilism*.

Classical possibilism distances itself from all forms of Platonism, including the one that historically supported some medieval possibilist positions and the one that gave Plantinga the opportunity to support a rather singular possibilist theory of possible objects, which was neither concretist nor Meinongian. Platonism is known to affirm the actual existence of ideas. In the language of medieval

ontology, this means that the *essentiae* are real beings. For example, being a man is as much really existing as this particular man. Moreover, a particular man originates from the combination of many universal ideas, and its being derives from the being of those ideas. Since *essentiae* are possibility matrixes, attributing existence to *essentiae* is *ipso facto* the reification of possible objects. Possible objects, like ideas, exist. Platonism can also be expressed in the language of modern ontology. The property of being a man can be named by the term $\lambda_x Ux$ (where Ux means "x is a man" and λ is the λ-operator turning expression Ux into a term for the property of being a man). Platonism involves of affirming that the said entities can be quantified over just like concrete objects. The difference between the former and the latter lies in the fact that abstract entities necessarily exist because their existence coincides with their *Sosein*.

Classical possibilism has nothing in common with Platonism. A possible object does not exist because its idea or the corresponding combination of ideas (its essence) exists, but rather because it is the object of an actually existing power.[8]

3.5 Mathematical Constructivism and Possibilism

There is an analogy between ontological possibilism and mathematical constructivism. Similarly, there is an analogy between actualism and Platonist realism in mathematics. The match is a natural one in both cases. In Platonist semantics, quantification concerns an actual infinity of abstract entities. In constructivist semantics, quantification concerns a merely potential infinity of

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8 Suarez masterfully clarified the meaning of the relation between the actuality of the possibility of content and this content's non-actuality. Referring to passages of this author's work serves to elucidate certain aspects of the convergence of the position here defended with classical theories on possible objects but also to stress the difference to other positions developed in the scholastic and modern periods. For example, in DM VI, 4.9, Suarez says: «Aptitudo obiectiva rerum possibilium ad existendum non est ex parte illarum, nisi non repugnantia quaedam, et ex parte causae denotat potentiam ad illas producendas» or: "The objective attitude of possible objects to exist stems from themselves only in terms of consistency, while for the causal element, it signifies the power to produce them". In another passage, DM XXX, 17.10, Suarez writes:«Nam possibile dupliciter dici potest. Primo, positive, et sic denominatur a potentia […] Secundo, per non repugnantiam; […] ergo omne illud quod repugnantiam non involvit, est possibile respectu omnipotentiae Dei» or "Indeed, possible may be defined in two ways: first, it can be positive, and in this regard it derives its name from the term power [...] second, it can by defined as non-repugnance; [...] therefore anything that does not imply repugnance is possible before divine omnipotence". These citations clearly show that Suarez's concept includes the two essential components of possibility: the formal component, which is attributable to the consistency of the content of the possible, and the real component, which is attributable to the cause of the possible.

objects. Similarly, in possibilist ontology, the objects of quantification are potential, and in the actualist counterpart, they are actual. In this subsection, I will use this analogy to confirm the thesis – in a manner typical of classical possibilism – that it would make sense actualistically to quantify the totality of possible objects.

Let us consider the construction of a sequence of inductive objects, e.g., some sort of bar-numeral.[9] Let $E(n)$ by the result of the construction of the n-th object, or the existence of the n-th object, and let $\Diamond E(n)$ denote the possibility of constructing the n-th object. Now, according to the potential concept of infinity, the set of all n does not exist as an actual set, but only as an indefinitely increasable set. In other words, bar-numerals are not actual objects but rather possible objects. Nevertheless, to say that they are possible objects is to say that $\forall n \Diamond E(n)$ is actually true or that the conjunction $\Diamond E(1) \wedge \Diamond E(2) \wedge \Diamond E(3) \wedge \ldots$ is true. Now, this requires, according to minimal truthmaker theory,[10] that there should be an (abstract) state of affairs involving an actually infinite set of atomic states of affairs (one for each numeral) acting as a truthmaker for the infinite conjunction above.

The objection to which constructivists (intuitionists) are prone to resort in order to counter the previous argument – which makes use of the truth of an infinite conjunction – is as follows. To give meaning to the statement that bar-numerals are possible objects (all and only those objects that are attainable through a finite use of the concatenation operation, using a single bar in each case of its application), one need not assume the infinite conjunction of states of affair $\forall n \Diamond E(n)$ as given. This is not necessary – they claim – because to affirm $\forall n \Diamond E(n)$ is precisely to affirm the existence of a procedure that generates every bar-numeral over time. Now, the actual fact is the procedure itself, and not the possibility of its results. Consequently, there is no such thing as an infinite set of actual entities (states of affairs).

How might a realist reply to this? I believe that a realist might respond that the argument is not conclusive, as it is impossible to conceive of a procedure capable of generating an infinite set of entities without assuming the truth of the actual infinite conjunction $\forall n \Diamond E(n)$. In other words, the truth of $\forall n \Diamond E(n)$ and the existence of the procedure are precisely *equivalent*. The first truth cannot be without the second, although the states of affairs expressed by each of them are not the same. Naturally, the truth of the conjunction maintaining the *actual* existence of all numerals is not assumed – and in denying this, constructivists may be thought to

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9 Bar-numerals are natural numbers represented as successions of vertical lines: |,||,|||,||||,….
10 By minimal truthmaker theory I refer to a theory according to which the role of the truthmaker of a true sentence is performed based on the fact it describes.

be correct. Instead, the assumed truth is that stating the *possibility* of the existence of bar-numerals.[11]

In conclusion, the actual existence of a procedure capable of generating the elements of a potentially infinite sequence ensures that each and every one of those elements is actual. Similarly, the fact that there actually is the power to produce a possible guarantees that the possibility of the possible is actual. Thus, the actuality of the possibility of possible objects proves the legitimacy of quantifying over possible objects, even if they are not actual. Moreover, the equivalence between the truth of $\forall n \Diamond E(n)$ and the actual existence of the generating procedure prevents us from thinking that the truth of there being possible objects should be ruled out in favour of the existence of the producing power.

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11 It is quite natural to think that the constructivist should not give up the fight. He may reply by acknowledging the relevance of the equivalence reported in the text, though at the same time, he may argue that the infinite expression can be made finite by resorting to a finite formula. Indeed, the meaning of $\forall n \Diamond E(n)$ may be made finite using the following instance of the induction principle:$\Diamond E(0) \wedge \forall x (\Diamond E(x) \rightarrow \Diamond E(x')) \rightarrow \forall x \Diamond E(x)$. Nevertheless, however, this move is not effective for at least two reasons. First, the instance of the induction principle contains the universal quantifier. Now, Platonists would immediately reply that the use of such a quantifier is equivalent to the use of infinite conjunction $\forall n \Diamond E(n)$. How may the constructivist reply? In our understanding, he may reply only as follows: $\forall x E(x)$ has the same meaning as the scheme $\Diamond E(x)$, where x is the free place for a random numeral. In light of this view, the axiom's instance should also be regarded as a scheme that yields, one after another, $\Diamond E(1), \Diamond E(2), \Diamond E(3),\dots$ This means that the truth of $\Diamond E(1), \Diamond E(2), \Diamond E(3),\dots$ is not actually given, but rather the truth of the formulae that stand as the iterated possibilitations of, $\Diamond \Diamond E(1), \Diamond \Diamond E(2), \Diamond \Diamond E(3),\dots$ or the conjunction $\Diamond \Diamond E(1) \wedge \Diamond \Diamond E(2) \wedge \Diamond \Diamond E(3) \wedge \dots$. Nevertheless, we are now back to square one in terms of the truth of an infinite conjunction. The constructivist is always forced to make the same move, i.e. finding a finite formula generating one after the other the various members of the previous conjunction and, thus, transforming the true infinite conjunction into a new procedure generating such elements. Once again, though, this means that the infinite conjunction of further iterated possibilitations $\Diamond \Diamond \Diamond E(1), \Diamond \Diamond \Diamond E(2),\dots$ is true. One may easily understand that the constructivist has worked himself into an infinite regression. At every stage accomplished to give a legitimate interpretation to certain true infinite conjunctions, the constructivist is confronted with yet another infinite assertion of the same kind, though modally more complex. Getting rid of the infinitary nature of all universal assertions would then be impossible, in that it would imply the completion of infinite regression. The second reason lies in the fact that the instance mentioned in the induction axiom has an infinitary content. It is a Σ_1-instance of the principle, and every form of Σ_1-induction is known to imply the actual existence of the objects being quantified. In this case, the objects being quantified are the possible worlds, i.e. the situations generating all numerals.

4 A Brief Comparison with Plantinga's, Zalta and Williamson's Theories

4.1 Some Remarks on Plantinga's Possibilism

Plantinga's[12] conception is a singular form of actualistic possibilism. He is an actualist, in as much as he thinks that there are only actual objects. However, since for him, there are no non-actual objects, there are still actual entities that ground the possibility of non-actual possibles. To Plantinga, these entities are not actual objects that have switched modality; for him, possible objects do not exist and cannot become actual, either. Entities capable of becoming actual are abstract and include states of affairs, worlds (that is, maximal sets of states of affairs) and individual essences (more specifically, the sets of essential properties that individuals singularly instantiate if they exist). The thesis of abstract entities existence is important in that it allows Plantinga to solve the paradox of the non-existing possible objects. The solution to this paradox consists of putting the ontological burden of non-existing possible objects on existing essences, that is, on existing abstract entities that act as substitutes for non-existing possible objects: these *existing* surrogates of non-existent possibles are the *non-exemplified* individual essences. In the aforementioned works,[13] Plantinga maintains that, when we affirm that non-actual possibles exist or may have existed, we mean to say that there are some particular properties, namely the individual essences, which are not exemplified but are essentially exemplifiable, hence, are exemplified in some possible world. To state the existence of a domain of essences corresponding to possible objects is a Platonist exercise; hence, Plantinga's possibilism essentially rests on the Platonist assumption of the existence of individual essences.

Natural is then to ask the question of what does it mean for a Platonist to assume the existence of essences. It means affirming that essences exist *ante res* – though not exemplified – and that their form of being is univocally the same as that of existing particular concrete objects (individual objects). These are abstract essences (understood as universal and separate, as they are not instantiated). Nevertheless, they exist. Now, even for those who oppose Platonism (e.g., neo-Aristotelians), essences (i.e., properties) do exist. For an Aristotelian, though, if

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12 Plantinga is quite a prolific writer. His post interesting writings include, besides *The Nature of necessity*, 1974, Plantinga (1970, 1976, 1979, 1983, 1985b, 1985a, 1987). Plantinga's idea of possible objects was formalised by Jager (1982).

13 More specifically, see Plantinga 1974.

they exist, they do so only *in re* or as essences (or properties) of existing individual objects. In this way, properties (or essences) do not exist *in se*, but are only modalities of being of individuals (substances) upon which they can be predicated, that is, as determinations thereof. Conversely, Platonists believe that ideas (essences), individual or universal (hence, incomplete) as they may be, have an existence of their own, i.e., they are not mediated as the determinations of something else that in turn exists *in se*, but rather they are immediately *in se*.

Now, the problems with Platonism are well known, but it is worth briefly considering them.

First, Platonism triggers a sort of uncontrollable dialectic of essences. To admit that essences exist implies accepting the existence of universal essences. Universals, though, are incomplete entities. To assume the existence of universal entities then means to assume the existence of incomplete objects, inevitably engendering contradictions. For instance, let us suppose the existence of a general triangle. It is undetermined, meaning that it is not acute, right or obtuse. On the other hand, geometry axioms follow that triangles must be acute, right or obtuse. Consequently, a triangle in general is at once not acute, right or obtuse and, therefore, neither (acute, right or obtuse). This is a contradiction. The contradiction runs even deeper in regard to position on the existence of universals having any extension. Obviously, to admit the existence of universals does not prevent one from restricting this definition to a given level of generality. Universals of any level exist indistinctly. There is also the universal of maximum generality, which stands out for not being determined, even in the face of its opposite. This is Hegel's absolutely indeterminate being which, precisely because of its indeterminateness, cannot stand firm in front of its negation and therefore it turns into its opposite. The identification of a concept with its negation is clearly a contradictory outcome. In sum: the more universals increase their extension, the more they decrease in terms of intension. In the end, they become absolutely indeterminate and, therefore, turn into their opposite. To reify them means to reify the contradiction.

Plantinga's Platonism faces other problems. One of these is engrained in the very concept of exemplification – or instantiation – which is pivotal to the Plantinga's ontology. What does he mean by exemplification? For a property to be exemplified means that it is determined to such an extent – i.e., concretised – that it characterises a possible object and, *moreover*, that such an object is somehow realised. In Plantinga, then, exemplification does not end with concretisation. Exemplification also implies existence, and thus Plantinga's analysis of possible objects works only when one can provide a satisfactory explanation of the difference between individual essence (concrete in the sense of being exhaustively determined) and individual essence actuated in a world. To resort to a world in which essence *S* (the *potentia* of being Socrates) is actuated (such *potentia* being

realised) – i.e., that Socrates exists – is not enough to make Socrates exists. Indeed, such a world is only possible. It may be actual, but as long as it is purely possible, even the possible Socrates whose essence is exemplified therein will not be actual. The real difference between a non-actual possible object and an actual possible object (that exists in the actual world) is given only if the difference between the world w, in which the possible object is exemplified and the world of the actuation thereof is also given, i.e., $w \neq w^*$ (where w^* is the actual world).

Thus, to explain how a possible such as Socrates comes into existence, we must first semanticise the difference between a possible world and actual possible world. Now, concerning the relation between a merely possible world and the actual one, it is insufficient merely to claim that the possible world is abstract, similar to an abstract entity is an individual essence. Indeed, the move that we resort to for the possible object does not apply to a possible world; hence, we cannot say that the possibility of world w lies in the existence of a possible world v, in which world w is exemplified. An exemplified world is nothing but an actuated world. Again, in what world could world w be actuated? It could not be different from w, since worlds are maximal entities. In truth, it should be the same world. A very simple tautology would follow:

– w is a possible world $\Leftrightarrow$ (there is a possible world v) (such that w is actual in v and therefore $w = v$)

Schematically, let S be "being-Socrates" (the essence of Socrates), let *Inst S* denote that "the essence of Socrates is exemplified" and let W be "being-the-world-w" (the macro-essence of w). Then:

$$\textit{Socrates} \text{ is a possible object } = \begin{cases} \exists w\,(Inst\,S \quad \text{in} \quad w) \\ \exists w\,\exists x\,(w \quad \vDash \quad Sx) \end{cases}$$

$$w \text{ is a possible world } = \begin{cases} \exists v\,(Inst\,W \ \text{in}\,v) \\ \exists v\,(w = v) \end{cases}$$

In conclusion, to say that worlds are *possible*, one must say that they are *actuable* macroessences where, however, macroessences are coincident with the possible world. In such a way one must, finally, quantify on possible worlds. In any case, quantification must shift to possible objects rather than to purely actual objects. Ergo, one must be in a position to state the existence of non-actual and hence non-existing, possible worlds. At this point it is clear that Plantinga's whole system, which intended to remove possible objects, as it considered them non-existing entities but exemplifiable in some possible world, fails in regard to terms for non-existing possible worlds.

Another problem with Plantinga's Platonism relates to the existential component of exemplification. As previously mentioned, exemplification, according to Plantinga means also "position into being". What comes into being, though, when a property is exemplified? The most obvious answer is that an object with that property comes into being. Naturally, if that property is an individual essence, such as *S*, what comes into being is Socrates. Nevertheless, in this case, the being coming into being may not be understood as being actuated. Indeed, essence cannot be actuated, because, being a platonic essence, it already exists. What can indeed be actuated is solely the possible Socrates. What is, then, the connection between exemplification and existence, considering that existing means actual?

4.2 Some Remarks on Zalta and Williamson's Actualism

Perhaps the most robust actualistic conception supported recently is that of Zalta and Williamson.[14] In particular, Nelson and Zalta (2009) state that "actualism is the conjunctive thesis that everything exists and is actual".[15] The quantification involves all entities, which are deemed existing or, to an equivalent extent, actual. Within the totality of existents (which necessarily exist and, therefore, may not be divided into possible or actual), there is an ontologically relevant difference, namely the difference between concrete and abstract. A possible, which common sense deems to have come into existence, is nothing but an abstract object that has become concrete. Hence, the difference between any objects and objects deemed to exist is not the product of existence but of their concreteness. Zalta and Williamson's concept of difference between abstract and concrete objects stems from a theory, whereby concreteness involves being situated in space-time. For these philosophers, being situated in space-time means existing, in that everything that exist does so in space-time. Being in existence then means being a concrete object, and coming into being means becoming a concrete objects. *Mutatis mutandis*, Zalta's actualism and Williamson's actualism may be attacked for their fundamental assumption that concreteness is a placement in space-time.

Now, to tackle this problem with Zalta and Williamson's actualism thoroughly, an in-depth analysis of concreteness and abstractness would be required. To even merely to scrape the surface of this would require an analysis of the relation between principles of individuation and concreteness, which we do not have the space to properly undertake here. Nevertheless, we can attempt to address some essential and particularly troublesome points.

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14 See Zalta (1983, 1988); Williamson (1998, 2002); Nelson and Zalta (2009)
15 See Nelson and Zalta (2009, p. 4, note).

First, defining concreteness in terms of space and time is debatable. Why can there not be concrete objects that do not stand in space and time? From a logical standpoint, there is no argument against this assumption given that concreteness may also be defined as maximal determination. Second, it is not necessarily the case that an object, comprehensively defined in its time-space elements, should be denied the status of a mere possible, fictional object. Think of the many literary characters that live in a given time and have a very specific place of residence. What about them? They are concrete yet non-existing.[16] Again, Zalta and Williamson believe that abstract objects replace possible objects. Possible objects, however, have a determined nature, in that only determined objects can exist.[17] How, then, can abstract entities be possible objects?[18]

5 Conclusions

The current debate about possible objects gives rise to several problems. In this article I have focused on the issue of the reality of possible objects and have sided with the possibilist position. As a matter of fact, I believe this position is more in keeping with the classical metaphysical tradition. The classical possibilism defended in above, however, has realist foundations that are essentially different from Lewis' concretist possibilism and from Plantinga's platonist possibilism. According to this form of classical possibilism, I construe possible objects as possible non-existing objects of an existing producing power. Consequently, they are nothing *vis-à-vis* the modality of their own actual being, although they do exist with regard to the modality of the producing power's being. The actualist requirement prescribed by the Frege-Quinean criterion of the quantification domain is thus fulfilled; indeed, really possible objects are not actual objects, but their possibility is actual.

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16 The Neomeinongians (such as Parsons (1980) and Zalta (1983)) believe that fictional entities are not fully determined by their properties. However, I agree with the theory of the possibilists (as Priest (2005) and Berto (2011)), according to which fictional objects do not exist as actual in the actual world. However, they exist completely determined to the last detail in some world and then, as possibles, also in the actual world. For more on this topic see Kroon and Voltolini (2018).

17 Suarez, for instance, maintains that: "Petrus et Paulus, ut abstrahunt ab actuali existentia, seu ut possibiles, intrinsece includunt suas rationes individuas, quibus distinguuntur" (DM V, s. 5, 3).

18 Naturally, a more thorough review of Zalta and Williamson's concepts would benefit from an exhaustive analysis of the abstract/concrete distinction. Nevertheless, the issue is far too complex to be discussed in this paper. If interested, see Bonino (2008); Lowe (1995) and Rodriguez-Pereyra (2014).

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