

World Stories and Maximality

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Abstract

According to many actualist conceptions of modality, talk about possible worlds should be reduced to talk about world stories. Intuitively, a world story is a complete description of how things could be. In this paper, I will claim that the world story approach not only suffers from the well-known, expressive problem of representing the thesis of the possible existence of non-actual objects, but it has troubles in representing, in an actualistically acceptable way, the apparently more tractable thesis of the possible non-existence of actual objects. To solve this problem, I will propose a refinement of the approach by the introduction of a novel notion of maximality, local maximality.

Keywords: modality, world stories, actualism, possibilism, maximality.

1. Introduction

According to many *actualist* conceptions of modality, talk about possible worlds should be reduced to talk about *world stories*.¹ Intuitively, a world story is a *complete description of how things could be*. Formally, a world story is a certain set of (actually existing) propositions that is *consistent* and *maximal*.

Consistency and maximality for sets of propositions are usually defined in the following way:

Consistency: a set Γ of propositions is consistent if and only if it is possible that all members of Γ be true together.²

¹ “Actualism” is often characterized as the thesis that the only objects that exist are those *actually* existing or, in other terms, that to exist is to be actual (Menzel 2016, Divers 2002). World stories were first introduced in Adams 1974 and further discussed, in a much more detailed way, in Adams 1981.

² This way of defining consistency of a set of propositions presupposes a certain notion of possibility as primitive. There is at least one way to define consistency in a *non-modal* way, but the definition would work for (uninterpreted) sentences, not propositions: a set Γ of sentences is consistent iff it is satisfiable, where a set Γ of sentences is satisfiable iff there is a propositional interpretation that makes all members of Γ true.

Maximality: a set Γ of propositions is maximal if and only if, for every pair of mutually inconsistent propositions p_1 and p_2 , either $\Gamma \in p_1$ or $\Gamma \in p_2$.

The paradigmatic pair of mutual inconsistent propositions is the one formed by a proposition p and its sentential negation $\neg p$. If one believes that the only kind of mutual inconsistency between pairs of propositions is the one expressed by sentential negation, the definition of maximality above amounts to the following: a set Γ of propositions is maximal if and only if, for every proposition p , either $p \in \Gamma$ or $\neg p \in \Gamma$. The idea is that maximality accounts for the fact that a world story is a *complete* description of how (all) things could be—a possible world is a “total history” as Kripke writes³—while consistency accounts for the fact that a world story is a description of a *possible* way things could be and whatever is true within (even a non-total) possibility should be compatible with whatever else is true within that very same possibility.

A *Russellian conception of propositions* is often associated with this view. According to such a conception, propositions are *structured* entities and there are some propositions, called *singular propositions*, that are about a certain object by having that object as a *direct* constituent of the proposition itself. The view that propositions are structured entities is sometimes called *structuralism*, the view that propositions may have objects as their direct constituents is sometimes called *objectualism*. The Russellian conception of propositions is then the result of combining objectualism and structuralism about propositions. World stories are then typically conceived as maximal and consistent sets of Russellian propositions. Notice that, from what I have claimed so far, world stories could be taken as maximal and consistent sets of both singular and non-singular, i.e., general, Russellian propositions.

The Russellian conception of propositions *plus* actualism implies that the objectual components of the propositions belonging to a world story will be actual objects. If the world stories theorist believes that not every actual object exists necessarily, or in a stronger way, that every actual object exists contingently, then she will also be committed to the view that some of her propositions (some or all of those having actual objects as direct constituents) will be contingent existents and thus that her world stories will be contingent existents too.⁴

The association between the world stories approach and the Russellian conception of propositions is probably the most philosophically sensible one to have, but it is not a forced one. The world stories approach is compatible with non-objectual conceptions of propositions. For example, it is compatible with a Fregean conception of propositions, according to which propositions are structured entities whose immediate components are intensional entities of one sort or another, and not individuals.

³ Cf. Kripke 1980: 15.

⁴ On the contingency of structural and objectual propositions, see Fine 1980: 161. For a world story to be contingent it is enough that at least one of its members be contingent; for a proposition to be contingent it is enough that at least one of its components be contingent. One might, of course, deny that from the contingency of the constituents of a structure S something follows about the modal status of S . In order to do that, however, one should deny that S ontologically depends on its constituents (or deny that the relation of ontological dependence between components a_1, \dots, a_n and a structure S does not transfer the modal status of a_1, \dots, a_n to S).

In this paper, I will claim that the world stories approach not only suffers from the well-known, expressive problem of representing, in an actualistically acceptable way, the thesis of the *possible existence of non-actual objects*, but it has troubles in representing the apparently more tractable thesis of the *possible non-existence of actual objects*. If an actualist approach has problems in representing both theses, then it could only be associated with a form of *necessitism*, namely the claim that, necessarily, every actual object necessarily exists (Williamson 2013). However, many actualists, and many world stories theorists among them, are not necessitists.

Unfortunately, I do not think that the world stories approach has the resources to represent, in an actualistically acceptable way, the thesis of the possible existence of non-actual objects, but there is at least some hope to make the approach able to represent the thesis of the possible non-existence of actual objects. I will propose a solution to this latter problem based on a refined conception of maximality that I will call “local maximality”.

2. Two Ways of Building World Stories

In order to give a reductive analysis of possible worlds, two things need to be done: one has to specify what kinds of entities should go proxy for possible worlds and one has to explain what it is for something to be true “according to” (if not even “into”) such entities. The fundamental move in possible worlds semantics is the relativization of truth to possible worlds, so, whatever be the kind X of entities to which possible worlds are to be reduced, a corresponding, and plausible, notion of “truth in X ” needs to be defined.

There are, however, two slightly different ways in which the world stories theorist may define the notion of “truth in/according to a world story”, each corresponding to a slightly different conception of what a world story ultimately is.

The first is to define the notion of “true in a world story S ” in terms of the notion of “belonging to a world story S ”: on this approach, a proposition Γ is true in a world story S if and only if Γ belongs to the world story S . In such a case, the notion of “truth in a world story S ” is reduced to the notion of “belonging to a world story S ”. This latter notion could then be defined in the following way:

- for any atomic singular proposition $\Phi^n(a_1, \dots, a_n)$ either $\Phi^n(a_1, \dots, a_n) \in S$ or $\neg\Phi^n(a_1, \dots, a_n) \in S$;
- $\neg\Gamma \in S$ if and only if $\Gamma \notin S$;
- $(\Gamma \vee \Delta) \in S$ if and only if $\Gamma \in S$ or $\Delta \in S$;
- $\forall x_1, \dots, x_n \Phi^n(x_1, \dots, x_n) \in S$ if and only if, for any actual objects a_1, \dots, a_n , $\Phi^n(a_1, \dots, a_n) \in S$;
- $\Box \Gamma \in S$ if and only if, for any world story S_i , $\Gamma \in S_i$;
- for any other proposition Ψ , $\Psi \notin S$.⁵

The other way consists in recursively defining the notion of “truth in a world story”. According to this latter method, however, not everything true in a world story needs to belong to a world story. On this approach, world stories are then

⁵ It should be noted that the first three conditions of this definition, while essential to give a working recursive definition of “belonging to a world story S ” are really superfluous because they are direct consequences of maximality (the first) and, jointly, of maximality and consistency (the second and the third).

to be conceived as maximal and consistent sets of a *special* class of propositions and a proposition is true in a world story, if it follows from or it belongs to this special class. The special class of propositions by which the notion of truth in a world story is defined is the class of *atomic singular propositions*. As a result, the notions of maximality and consistency need to be tailored for atomic singular propositions:

Consistency*: A set Γ of atomic singular propositions is consistent, if and only if it is possible that all members of Γ be true together.

Maximality*: A set Γ of atomic singular propositions is maximal* if and only if, for every pair of mutually inconsistent atomic propositions p_1 and p_2 , either $p_1 \in \Gamma$ or $p_2 \in \Gamma$.

Again, if one believes that mutual inconsistency is exclusively expressed by sentential negation, then the definition of maximality* amounts to the following: a set Γ of atomic singular propositions is maximal* if and only if, for every atomic proposition p , either p or $\neg p$ belongs to Γ . A world story thus contains either atomic propositions or their negations.

The notion of “truth in a world story S ” could be now recursively defined as follows:

- any atomic singular proposition $\Phi^n(a_1, \dots, a_n)$ is true in S if and only if $\Phi^n(a_1, \dots, a_n) \in S$;
- $\neg\Gamma$ is true in S if and only if Γ is not true in S ;
- $(\Gamma \vee \Delta)$ is true in S if and only if Γ is true in S or Δ is true in S ;
- $\forall x_1, \dots, x_n \Phi^n(x_1, \dots, x_n)$ is true in S if and only if for any (actual) objects a_1, \dots, a_n , $\Phi^n(a_1, \dots, a_n)$ is true in S ;
- $\Box\Gamma$ is true in S if and only if for any world story S_i , Γ is true in S_i ;
- for any other proposition Ψ , Ψ is not true in S .

The relation between the two methods of characterising world stories is a typical case of trade off between ontology and ideology: the latter method gives us a much more “austere” version of world stories, but it has to take as primitive the notion of “truth in a world story S ”, the former method reduces the notion of “truth in a world story S ” to the notion of “belonging to a world story S ”, but it has a much more “inflated” version of world stories. The inflated version of world stories is the one actually used by Robert Adams, while a counterpart of the austere version was the one used by Rudolf Carnap (1947) in *Meaning and Necessity*: state descriptions (roughly, linguistic counterparts of world stories) were conceived as maximal sets of *atomic* sentences of a language L .

3. The Problem of the Possible Existence of Non-Actuals

Like any other actualist conception of modality, the main problem for the world stories approach is that of representing, in an actualistically acceptable way, the *possible existence of non-actual objects*. As I said in the introduction, it is not my intention, in this paper, to solve this problem for the world stories theorist. Actually, I happen to think that the prospects for a solution are quite dim. Nonetheless, I think it is useful to shortly present the problem.

Take a sentence like:

- (1) There could have been a non-actual object;

or something like:

(2) There could have been more objects than there actually are.

Few actualists would be brave enough to deny that such sentences are true.⁶ The problem for the actualist is precisely how to accept their truth without accepting also the existence of possible and non-actual objects. For those actualists accepting already the idea that (at least some) actually existing individuals are contingent existents, the possible existence of non-actual objects seems to be a natural thesis to accept.⁷

The view according to which we have possible non-existence of the actuals without the possible existence of the non-actuals corresponds to the view that objects could only fail to exist, while it is not possible for “new” objects to come into existence. Actuality could thus only be different “by subtraction”: it is only possible that there exist fewer objects than those that there actually are. This ontological asymmetry would sound quite suspect and it would correspond to an implausible metaphysical view.

The problem for actualists is thus not the mere acceptance of (1) or (2). If one accepts *contingentism* (the view that at least some actual object exists contingently) it would be difficult to deny either of them. The problem is rather that the truth of such sentences seems to be difficult to represent in an *actualistically acceptable way*. There are various ways to define what counts as actualistically acceptable. A criterion of actualistic acceptability may be, for example, that the truths of modal claims should *supervene* on the truth of non-modal claims (where, for the actualist, non-modal truths are the actual truths). From this criterion, it follows that (1) and (2) are not actualistically acceptable, unless one shows that their truth supervenes on the truth of some non-modal claim.

The world stories approach, being an actualist approach, has problems in representing the truth of (1) and (2). Given the conditions above, for the proposition expressed by (1) to be true there should be at least a world story *S* such that the proposition expressed by “there exists a non-actual object” is true in *S*. The non-modal basis over which the truth of (1) should supervene is thus the categorical statement “the proposition that there exists a non-actual object is true in a world story *S*”. For this non-modal proposition to be true in *S*, *S* needs to contain a singular proposition that testifies for the general existential proposition that there exists a non-actual object, a singular proposition having an object not satisfying the predicate “being actual”. But, given that all the objects there are are actual, no object could satisfy the predicate in question. We then do not have the singular, non-modal, proposition that testifies for the general sentence embedded in (1) and therefore, as the theory stands, our sentence cannot be represented as true in an actualistically acceptable way, simply because it turns out to be false.

⁶ So called, “new actualists” (the term comes from Menzel 2016) such as Linsky & Zalta 1994 are an exception: they would rather deny both (1) and (2) and try to explain away the relevant intuitions.

⁷ Notice that the actualists could safely speak of the possible existence of non-actual objects without ontologically committing themselves to the existence of possible non-actual objects. The inference from the possible existence of something to the existence of a possible something is granted by the (existentially quantified version of the) Barcan formulas and, typically, actualists do not think that such a formula is valid.

A possible way out for the actualist's may be that of negating that a sentence like (1) needs a singular proposition that makes it true. (1) does not need a testimony, the actualist could claim. A similar view is defended by Kit Fine, according to which the singularity needed to make such a sentence true is "spurious":

For the actualist [...] there can be no instance in virtue of which the sentence is true. The sentence states an irreducible general possibility, and no matter how well the individual is described, he can have no specific identity (Fine 1977: 117).

Many forms of actualism could be characterized as a strive to substantiate Fine's quote (and in particular to substantiate the view that truths about merely possible existents are irreducibly general). Notice, however, that if we take the route of *irreducible general possibilities*, then we should abandon the criterion of supervenience of the modal over the non-modal as a way to represent, in an actualistically acceptable way, alleged truths about possible non-existents. If modality is primitive, modal truths do not supervene on non-modal ones.

4. The Problem of the Possible Non-Existence of Actuals

Many energies have been spent on the problem of representing the possible existence of non-actuals in an actualistically acceptable way. Fairly enough, such a problem has been taken to be as *the* problem for actualist approaches to modality. However, few have noticed that the world story approach and, probably, many other actualist approaches, also have problems in representing the seemingly more tractable thesis of the *possible non-existence of an actual object*, namely the problem of representing, in an actualistically acceptable way, a situation in which, for example, I (undoubtedly an actual object) do not exist. The rest of the paper will be devoted to show why the world stories approach has this problem and how it could be solved.

World stories (being sets of propositions) are *representational entities*, they represent things as being in a certain way.⁸ In order to see whether the world story theorist is able to represent the possible non-existence of an actual object we should reflect, at least for a moment, on what does it mean for a representation to be a representation of the non-existence of an actual object.

My possible non-existence, and, in general, the possible non-existence of something, could basically be represented in two ways: by means of a representation that "encodes" the explicit information that I do not exist, or by means of a representation that does not contain any information about me at all. In this latter case, the representation could be taken as the representation of the non-existence of something in case it can be somewhat "compared" with another representation that represents me (or something) as existing.⁹

⁸ Properly speaking, this is not true: from the fact that a proposition is a representational entity does not follow that a set of propositions is a representational entity. World stories, however, are sets of propositions *with certain features*: a world story is able to represent actuality as being in a certain way, because it is a maximal and consistent collection of propositions about actuality. Maximality and consistency grant world stories their representational powers.

⁹ Maybe, there are ways of representing implicitly the non-existence of an object without any need to compare such representation with another one that represents the object as existing. In such cases, one might say that the non-existence of something, while implicit,

For example, assume that there actually exist only three objects: John, Sam and myself and let us stipulate that figure 1 below is a representation of the actual situation, as far as the existence of objects is concerned.

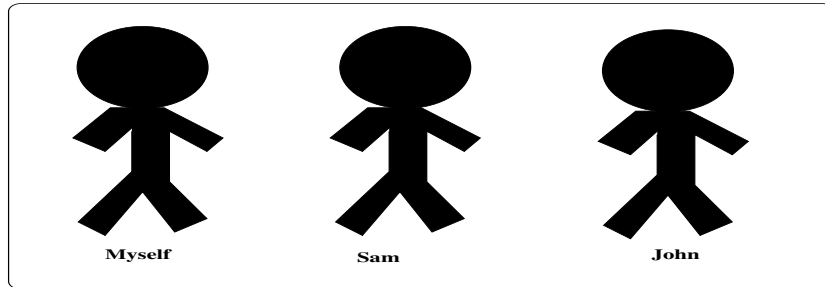


Figure 1

Now, assume further that being black in colour means, in the representation, that an object exists and being white in colour that it does not. Figure 2 below could then be taken as a representation that represents my non-existence *explicitly*:

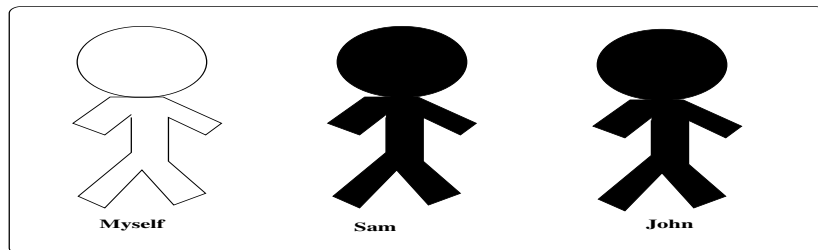


Figure 2

The following could instead be taken as a representation that represents my non-existence *implicitly*:



Figure 3

In the first case, I could gather the information that figure 2 is a representation of my non-existence *from within* the picture: my non-existence is represented by an intrinsic (graphical) property of the representation; knowing that white figures represent non-existing objects is sufficient to conclude that 2 is a representation that represents an object, namely myself, as non-existing. In the second case, I

it is also a “part” a “feature”, or a “property” of the representation. In this article, I will only consider the “comparative” way of representing the possible non-existence of an object, because it is the one that corresponds to the notion “truth at” to be discussed below.

could only gather the information that figure 2 is a representation of my non-existence *from the outside*: the information is somewhat “inferred by comparison” (an expression to be qualified below) with the actual situation represented in figure 1.

The propositional counterparts of the three figures above are, respectively, the following three sets of singular propositions (I am representing singular propositions between corners and composed by objects and properties and I am assuming that existence is a genuine property of objects):

- $s^* = \{ \langle \text{Sam, existence} \rangle, \langle \text{John, existence} \rangle, \langle \text{Myself, existence} \rangle \}$
- $s_1 = \{ \langle \text{Sam, existence} \rangle, \langle \text{John, existence} \rangle, \langle \text{Not: Myself, existence} \rangle \}$
- $s_2 = \{ \langle \text{Sam, existence} \rangle, \langle \text{John, existence} \rangle \}$

Properly speaking, s^* , s_1 and s_2 are not world stories, because they are not maximal entities. We can assume, however, that a notion of “truth in a set of propositions S ” could be defined for these non-maximal representational entities along the lines of the notion of “truth in a world story S ” given in section 2.

According to this definition, we can conclude that the proposition that I do not exist is true in s_1 , because the singular proposition $\langle \text{Not: Myself, existence} \rangle$ belongs to s_1 .

What about the same proposition in s_2 ? We know from the recursive clauses (and the definitions of maximality) that an atomic proposition or its negation has to belong to a set of propositions s to be true in s . In the case of s_2 , neither the proposition that I exist nor the proposition that I do not exist belong to s_2 , thus neither of them should be taken as true in s_2 . So none of the definitions above could be of any help here.

The world stories theorist, however, believes that s_2 could be taken as an implicit representation of my non-existence and that the way in which the proposition that I do not exist could somewhat be “inferred by comparison” from s_2 can be captured in a semantically robust way. In order to do this, the preliminary thing is to assume that s_2 is related to s^* in a relevant way, by representing a possibility for (what is represented in) s^* . She then introduces a novel relativized notion of truth: *truth at*, whose main feature is that of not requiring a proposition to belong to or to be true in a set of propositions s or a world story S to be true *at* s or at S .

The intuitive motivation behind the distinction between, “truth in” and “truth at” a world story is well explained by Fine when he presents the distinction between two notions of propositional truth, the *inner* and the *outer*:

One should distinguish between two notions of truth for propositions, the inner and the outer. According to the outer notion, a proposition is true in a possible world [in our case in a world story] regardless of whether it exists in that world; according to the inner notion, a proposition is true in a possible world only if it exists in that world. We may put the distinction in terms of perspective. According to the outer notion, we can stand outside a world and compare the proposition with what goes on in the world in order to ascertain whether it is true. But according to the inner notion, we must first enter the proposition into the world before ascertain its truth (Fine 1985: 163).

Inner truth corresponds to the notion of truth in, outer truth to the notion of truth at. The proposition that I do not exist is true in s_1 , because it belongs to s_1

(it exists in s_1), the proposition that I do not exist is not true in s_2 (because it does not belong there), but it is nonetheless true at s_2 , because its truth might be determined by comparing s_2 with s^* , the true world story.

The notion of “truth at” is thus very important for the actualist: it allows one to say that a given proposition is true with respect to a world (the proposition that I do not exist is true with respect to s_2) without assuming the existence of such proposition and of the objects the proposition is about in such a world.

According to Adams (1981: 23), the two basic principles regulating the notion of “truth at” are the following:

Truth-at 1: Every proposition Γ that is true in a world story S is true at S .

Truth-at 2: In case at least one of $a_1, \dots, a_n \notin S$, $\neg\Phi^n a_1, \dots, a_n$ is true at a world story S (where Φ^n is a primitive predicate).

From **Truth-at 1**, it follows that if an actual object a belongs to a world story S , then everything that is true *in* S of a will be also true at S of a ; from **Truth-at 2**, it follows that, if a does not belong to S , then the negation of every singular proposition about it will be true at S . In particular, if a does not belong to a world story S , the proposition that a does not exist will be true at S . On the basis of **Truth-at 2**, we may claim that the proposition that I do not exist is true at s_2 , because I am not a constituent of s_2 . By means of the notion of “truth at”, we may finally make sense of the idea that s_2 represents my non-existence implicitly, that from s_2 one could infer my non-existence.

The situation is thus the following. There are two ways of representing the possible non-existence of an actual object within the world stories approach. One is the explicit way for which the dear old notion of “truth in” is enough, the other is the implicit way for which the novel notion of “truth at” needs to be introduced. My claim will be that both ways are problematic for the world stories approach. In particular, I will show that the notion of “truth at” is incompatible with the notion of maximality used within the world story approach (be it maximality* or simple maximality).

Before proceeding, I wish to propose a more rigorous presentation of the notion of “truth at”, by giving a complete recursive definition of it, something that it is rarely found in the literature.¹⁰

As we have seen, the basic idea in the notion of “truth at” is that a proposition Γ can be true at a world story S without existing in S . This is especially plausible within an actualistic framework where possible worlds and propositions are all actual entities. A recursive definition of “truth at” should be done in such a way that none of its clauses entail the existence of the corresponding proposition at the relevant world story (note, by comparison, how instead the first clause of the recursive definition of “truth in” immediately entails the existence in S of the atomic propositions that are true in S). We will then say that an atomic proposition Φa is true at a world story S iff S *represents** a to be Φ , where the representing* of Φa by S does not imply the existence of Φa in S . Representing* is, of course, a new primitive, but it could stand for the explicit or the implicit way of representing mentioned above. In case a world story S represents implicitly Φa to be true, this

¹⁰ Cf. for example, Turner 2005 where four necessary conditions for the notion of “truth at” are individuated, but a recursive definition is not given. King 2007: 83 is an exception and what follows is partially inspired by his view.

means that the extension of Φ could somehow, be read off and it could be determined that a falls in the extension of Φ with respect to S . We do not need to be specific about the ways in which we determine the extension of a predicate Φ with respect to a world story S (it might depend on specific features of the predicate), but this determination might occur by comparison with another world story (typically, the actual world story). Note that the fact that, in S , a is represented* as falling in the extension of Φ does not entail, *per se*, that the proposition Φa exists in S (nor that a exists in S). The recursive definition of “truth at” could thus be something like this:

- any atomic proposition $\Phi^n(a_1, \dots, a_n)$ is true at S if and only if S represents* a_1, \dots, a_n as being in the extension of Φ^n ;
- $\neg\Gamma$ is true at S if and only if Γ is not true at S ;
- $(\Gamma \vee \Delta)$ is true at S if and only if Γ is true at S or Δ is true at S ;
- $\forall x_1, \dots, x_n \Phi^n(x_1, \dots, x_n)$ is true in S if and only if for any a_1, \dots, a_n , $\Phi^n(a_1, \dots, a_n)$ is true at S ;
- $\Box\Gamma$ is true in S if and only if for any world story S_i , Γ is true in S_i ;
- for any other proposition Ψ , Ψ is not true in S .

Now let us see why the world stories approach, even armed with the brand new notion of “truth at a world story” cannot represent, in an actualistically acceptable way, the possible non-existence of an actual object.

4.1 Problems with the Explicit Way of Representing my Possible Non-Existence

The explicit way of representing my possible non-existence is problematic because *it is not actualistically acceptable*. *Prima facie*, this might sound quite surprising. Reductive kinds of actualism only require that the entities that go proxy for possible worlds be actual entities. From this point of view, s_1 seems to be perfectly acceptable: it only contains propositions whose objectual components are actual objects. Why then the explicit way of representing my possible non-existence should be problematic for an actualist?

To understand why, we need to introduce four ideas.

1. The first idea is that there are some connections between the modal status of a proposition (or a set of propositions) and certain counterfactual claims; in particular, if a proposition Γ is merely possible (*i.e.*, possible and not actually true), then the following principle seems to be true:

(Poss-Count) If Γ is (merely) possible, then, had things gone differently, then Γ could have been true.

On the other hand, if Γ is necessary, the following principle seems to be true:

(Nec-Count) If Γ is necessary, then, no matter how things could have gone, Γ would have been true.

These principles connect possibility and necessity claims to counterfactual claims and testify for their intimate logical relationships. In particular,

(Nec-Count) could be used, and indeed it has been used, to define meta-physical necessity in counterfactual terms.¹¹

2. The second idea is that a false world story—a world story containing at least one false proposition—has the modal property of *possibly being the true world story*, where the true world story is the only world story containing all and only true propositions. Given (Poss-Count), the possible actuality of a world story S implies that, had things gone differently, S could have been the true world story. Call this thesis the *possible actuality of (false) world stories*.
3. The third idea is that, for the actualists, the claim that merely possible objects do not exist is *necessary*, not contingent. They not only believe that merely possible objects do not exist, but also that it is necessarily so, namely that there *could not have been* merely possible objects. Call this claim the *necessary non-existence of the non-actual*.
4. The fourth idea is that, for the actualists, the claim that there are no non-actual objects is usually taken to imply that there are no *facts*, i.e., true propositions, about non-actual objects. Non-actual objects have no properties and are not involved in any relation with other actual or non-actual objects. Within the Russellian conception of proposition, the absence of facts about non-actuals is represented by the absence of propositions containing non-actuals as constituents. This thesis is usually called *serious actualism*.

The combination of the necessary non-existence of the non-actual (3) and serious actualism (4) implies that there could not be any facts about non-actual individuals and, given (Nec-Count), this claim should be understood as the claim that, in whatever way things could have gone, there would have been no facts about non-actual individuals.

Consider now s_1 . Given that we have stipulated that s^* is the true world story, s_1 is a false world story, because it contains the false proposition that I do not exist. Being a false world story, s_1 has the property of being possibly actual (by the possible actuality of false world stories) and then it is possible that s_1 is the true world story. Given (Poss-Count), from this it follows that had things gone differently, s_1 could have been true. There is then a counterfactual circumstance C , where s_1 is true. But what would have happened, had C been the case? Well, it would have happened that I would not have existed, but—what is more important—that there would have been a fact about me, a non-existent object. Had s_1 been the actual world story (i.e., had C been the case), a singular proposition having me as a constituent would have been true. Given 3, however, this cannot happen. In no counterfactual circumstance (and thus neither in C), there should be a true proposition having a merely possible object as a constituent and I would have been a merely possible individual, had the counterfactual circumstance C be true. This situation is thus not actualistically acceptable. Given the necessary non-existence of non-actuals and (Nec-Count), no matter how things could have gone, there should be no facts about non-actual individuals. However, had things gone

¹¹ Cf. Williamson 2008: 159. To properly express the “no matter how things could have gone” in (Nec-Count) we probably need quantification into sentence position. The right-hand side of (Nec-Count) becomes $\forall p (p \mapsto \Gamma)$, where “ \mapsto ” is a would-counterfactual, which is provably equivalent to $\neg\Gamma \mapsto \Gamma$. This formula is used by Lewis 1973: 22 to define necessity.

the way s_1 represents them to go, there would have been a fact about a non-actual individual, namely myself.

The very same conclusion should be reached also by another route, namely by reflecting on some features of the theory of propositions behind the world stories approach. As I said, a world story theorist is (typically) an objectualist and a structuralist about propositions. Not simply so, however; indeed, she is also an *essentialist* about his structuralism and objectualism, for she believes that the identity of propositions is rooted in their constituents and components. One of the advantages of the Russellian conceptions of propositions over its non-structural (propositions as unstructured sets of circumstances of evaluations) and non-objectual (propositions as composed by intensional entities) competitors is that it allows for a finer-grained individuation of them; in particular, necessarily equivalent propositions may be distinct; the necessarily equivalent propositions expressed by $\forall x (x = x)$ and $\forall x \exists y (x = y)$ may be distinguished for structural reasons, the necessarily equivalent propositions expressed by “Socrates = Socrates” and “Plato = Plato” may be distinguished for objectual reasons. Essential objectualism, essential structuralism and actualism imply a thesis usually called *existentialism*:

Existentialism: if a proposition Γ exists and it is about an object a (it has a as a direct constituent), then, had a not existed, neither Γ would have existed.

The thesis of existentialism implies that in a situation where I do not exist, no proposition having me as a constituent exists, neither the proposition that I do not exist. Being an existentialist, then, the world stories theorist cannot accept that my possible non-existence be explicitly represented by a set of propositions like s_1 . No world story can have as a member a proposition to the effect that some object a does not exist and therefore, the explicit representation of my possible non-existence is not a viable option for the world stories theorist.

Note that the first way of showing that the explicit way of representing my possible non-existence is not actualistically acceptable—the one based on (1)-(4)—has a clear advantage over the second way, based on Existentialism. The latter is explicitly grounded on principles belonging to a particular theory of propositions, while the former is based on general modal principles. Even though some of these principles (e.g., serious actualism) may be better understood within a Russellian setting, their plausibility is independent from such a propositional setting.

4.2 Problems with the Implicit Way of Representing my possible Non-Existence

The implicit way of representing my possible non-existence is problematic because it clashes with the definition of maximality in use (be it maximality* or maximality). Under maximality*, a world story S is maximal* if and only if for any actual object a and for any atomic predicate (or property) Φ , either Φa belongs to S or its negation belongs to S . Under maximality, a maximal world story will contain (among others) any atomic proposition (or its negation) about every actual object. The result, in both cases, is that every world story will contain lots of propositions directly about every actual object; every world story will contain as many singular propositions about a as many atomic predicates. In particular, for

any world story S and actual object a , S will contain either the proposition that a exists or the proposition that a does not exist.

This situation does not even allow for an implicit characterization of my possible non-existence. For this reason, the notion of “truth at”—explicitly designed for such a purpose—becomes completely useless. As we have seen in section 2, semantic notions such as “truth in” and “truth at” enter the scene only *after* maximal and consistent sets have been generated. We first define the notion of “world story” as a maximal consistent set of actually existing propositions and only then we can recursively define the notion of “truth in a world story S ” or “truth at a world story S ”. Both notions simply presuppose the existence of world stories.

But the way in which world stories are built deprives the notion of “truth at” of its very rationale. Given a world story S that represents my non-existence, due to the maximality of S , S will contain the proposition that I do not exist and thus it is already true *in* S that I do not exist.

The notion of “truth at”, however, was supposed to help us just in representing possible situations where I do not exist without committing us to the existence of the proposition that I do not exist. But with the definitions of maximality in use (maximality and maximality*), the information that I do not exist according to a certain world story S is something that could be gathered already by means of “truth in”: the proposition that I do not exist is a member of a world story S representing my possible non-existence S and we know, from the recursive definition of “truth in”, that every proposition that is a member of S is also true in S . Introducing a further notion of “truth at” would be, at this point, simply superfluous.

From a general point of view, the problem is that what the official definitions of maximality produce is a complete description of a possible development of the actual world *from our perspective*; what would be needed is instead a complete description of a possible development of actuality *from the perspective of those (actuals) that would have existed according to such a possible development*.

The world stories theorist thus faces a dilemma: either she gives up the requirement that her world stories be maximal* or maximal sets of actually existing propositions or she gives up the notion of truth at a world story. In this latter case, however, false world stories will not be actualistically acceptable entities, because they would contain propositions about objects that would exist had one of those world stories become the true world story. In the former case, world stories could not be taken as total descriptions of how things could have gone and therefore they could not be taken as the right kind of entities to reduce possible worlds, not even those where only actual objects exist.

5. Local Maximality

My aim in this section is to help the world stories theorist to escape the dilemma presented above by proposing an alternative, and more plausible, conception of maximality, a notion of maximality that could be used in conjunction with the notion of “truth at”.

In order to do this let me firstly emphasize again the distinction between two ways in which the notion of “complete description of an alternative course of actuality” could be understood. When I claim that some representational entity is a complete description of an alternative course of actuality, what I claim seems to be ambiguous between two readings:

- a complete description of actuality with respect to an alternative course of it;
- a complete description of an alternative course of actuality.

The two readings are obviously connected with the two ways, mentioned above, in which one could represent my possible non-existence. The first reading corresponds to the problematic notion of maximality in use so far. According to such a conception, a complete description of an alternative course of actuality is to be done *from the point of view of actuality*. If the actual objects were Sam, John and myself, a complete description of an alternative course of actuality in this sense would be a description that always tells us explicitly everything about Sam, John and myself. For any atomic predicate P , this kind of description tells us explicitly whether Sam, John and myself satisfy the predicate P or not with respect to the possible situation to be described. In case the description describes an alternative course of actuality in which I do not exist, the description will tell us explicitly that I do not exist according to this alternative course and it will contain a proposition to the effect that I do not exist. Call this kind of maximality *global maximality*. Both maximality* and maximality are kinds of global maximality.

The second reading corresponds to a conception according to which the descriptions of alternative courses of events should be complete *from the point of view of these courses of events*. In such a way, descriptions are generated that are complete only with respect to the actual objects that would have existed, had the descriptions being true. Call this notion of maximality *local maximality*.¹²

I propose to characterize local maximality by means of the notion of *actual object that would have existed had a certain (set of) proposition(s) been true*. The idea is to define maximality for a world story only with respect to those objects that would have existed, had that set of propositions been true.

In the case of a set of atomic propositions Γ , it is quite easy to determine what objects would have existed had Γ been true. Let us consider the simplest case, namely that of a set of atomic propositions s_1 , whose only component is the atomic and singular proposition $\langle P, a \rangle$, expressed by Pa . Assume that $\langle P, a \rangle$ is actually false and ask yourself: what actual objects would have existed had s_1 been true? In this case the answer is quite easy and unequivocal: assuming that the property P is a qualitative property (and so does not involve the existence of any individual), a is the actual object that would have existed, had s_1 been true.¹³

¹² The basic idea behind the alternative notion of maximality that I am going to present has been already envisioned by Adams (1981: 23). He in fact recognized the need to give some limitations to the maximality of world stories: “*Intuitively, a world story should be complete with respect to singular propositions about those actual individuals that would still be actual if all the propositions in the story were true, and should contain no singular propositions at all about those actual individuals that would not exist in that case. For the propositions would not exist and therefore could not be true, if the individuals did not exist*”. The problem, however, is that this limitation on maximality and the consequences of this limitation have never been explicitly worked out, either by Adams and, as far as I know, by any other world stories theorist.

¹³ Admittedly, the notion of a qualitative property is far from being clear. A qualitative property is usually defined as a property whose linguistic formulation does not contain any referential device to individuals. If $\lambda x\Phi$ is the linguistic formulation of a qualitative property, then in order for the property to count as qualitative, Φ should not contain any individual constant or free variables (except from x). This definition is problematic in a number of ways: for a start, it might be extensionally wrong in that there might be inexpressible

If we want to represent a possible situation in which only a, b and c exist (whereas, in the actuality, there exist a, b, c and d), our world story will be a set of consistent and maximal atomic propositions about a, b and c , i.e., having only a, b and c as objectual components.

Things are not so simple in the case maximality is not defined only with respect to the atomic singular propositions. In such a case, the truth of a proposition Γ might be compatible with the existence of distinct sets of actual objects; hence, the answer to the question “What actual objects could have existed, had Γ been true?” turns out to be more difficult to answer.

Consider, for example, the proposition expressed by $\exists x (x \neq a)$ and assume that such a proposition is a member of a consistent set of propositions s_{ii} whose other member is the proposition expressed by Pa , namely $\langle P, a \rangle$. Assume that the set of actual objects is $\{a, b, c\}$. Now, what actual objects would have existed had s_{ii} been true?

The truth of the proposition expressed by Pa requires the existence of a (assuming, again, that P is qualitative), but the truth of the proposition expressed by $\exists x (x \neq a)$ is compatible with the existence of distinct sets of actual objects, namely $@_{s_1} = \{a, b\}$, $@_{s_2} = \{a, c\}$, $@_{s_3} = \{a, b, c\}$. Had s_{ii} been true, the actual objects that would have existed had s_{ii} been true would have been either $@_{s_1}$ or $@_{s_2}$ or $@_{s_3}$. Call the distinct sets of actual objects compatible with the truth of a certain set of propositions, the $@_s$ -sets.

Now, the idea is that we can answer unequivocally to the question “what actual objects are compatible with the truth of a certain set of propositions s ?” only relatively to an $@_s$ -set. The question “*what actual objects would have existed had s been true?*” should then be reinterpreted as the question “*what actual objects, relatively, to an $@_s$ -set, would have existed, had s been true?*” With the expression “the actual objects that, relatively to $@_{s_i}$, would have existed, had s realized” I will simply denote all the (actual) objects belonging to $@_{s_i}$.

With the notion of $@_s$ -set at our disposal, we are now ready to define a notion of local maximality—that I will call $@_s$ -maximality—for a set of actually existing propositions s .

I will use Γ_i or Δ_i to refer to the propositions Γ and Δ such that all their objectual components (if there are any) are elements of the set i . I will use an expression like P^n to refer to any primitive property and I will use an expression like Φ_i^n to refer either to a primitive property or to any non-primitive property Φ such that its only objectual components (if there are any) are elements of the set i .

qualitative properties. Furthermore, a purely “syntactic” criterion does not account for predicates that could contain “indirect” semantic relations to individuals or places (e.g., “Hellenic”). One could say that a property is qualitative in case the predicate that expresses it does not semantically “involve” individuals, but, admittedly, even this formulation is not very precise. As far as this paper is concerned, I will rest content with this generic formulation. Cf. Williamson 2013: 271. Note that, for my purposes, I do not need to restrict myself on or to have any special commitment to qualitative properties as far as it is clear what objects the truth of a proposition implies. In case Pa is a false proposition and P non-qualitative, the objects that would have existed had Pa been true, would have been a and all the objects whose existence would have been implied by P . The only constraint on properties is that they do not involve any semantic relations to merely possible objects, but this is already part of the actualist spirit of the world stories approach.

A set of propositions s is $@_{s_i}$ -maximal, for some i , if and only if

- for any n -ary property P^n and for any actual object $a_1, \dots, a_n \in @_{s_i}$, either $P^n(a_1, \dots, a_n) \in s$ or $\neg P^n(a_1, \dots, a_n) \in s$;
- $\neg \Gamma_{@_{s_i}} \in s$ if and only if $\Gamma_{@_{s_i}} \notin s$;
- $(\Gamma_{@_{s_i}} \vee \Delta_{@_{s_i}}) \in s$ if and only if $\Gamma_{@_{s_i}} \in s$ or $\Delta_{@_{s_i}} \in s$;
- $\forall x \Phi_{@_{s_i}}(x) \in s$ if and only if for any $a \in @_{s_i}$, $\Phi_{@_{s_i}} a \in s$;
- for any other proposition Ψ , $\Psi \notin s$.

With the notion of $@_{s_i}$ -maximality at hand, we can now define a world story as follows:

If s is a set of propositions, s is a *world story* if and only if s is consistent and, for some i , $@_{s_i}$ -maximal.

The new conception of maximality allows us to generate world stories where my possible non-existence is represented simply by the lack of any proposition having me as a constituent; such world stories are also locally maximal in the sense of being complete descriptions of alternative courses of actuality. A world story representing an alternative course of actuality where I do not exist is a set of propositions that do not have me as an objectual constituent. The notion of local maximality now ensures that I do not belong to such a world story, because I am not belonging to any of the $@$ -sets representing a possible development of actuality in which I do not exist. $@$ -sets select only objects that would have existed, had certain propositions been true and I would not have been selected, had the proposition that I do not exist been true.

The world story theorist can now profitably use the notion of “truth at” in order to represent implicitly the possible non-existence of an actual object. My possible non-existence is true at a world story that does not have me as a constituent. The notion of “truth at” can now do the work it was designed to do, namely that of allowing us to make comparisons between two locally maximal and consistent world stories. By means of the notion of local-maximality, the framework of world stories is now compatible with the introduction of the notion of “truth at” and can represent, in an actualistically acceptable way, the possible non-existence of actual objects.

6. Conclusion

My conclusion is that the world stories theorist can represent the possible non-existence of actual objects if she abandons the notion of global maximality and uses instead the notion of local maximality ($@$ -maximality). In this paper, I have shown why global maximality generates world stories that the actualist should not accept and, furthermore, why it makes the notion of “truth at a world story” useless. But a working notion of “truth at” is essential for the world stories approach, because it is only by means of such a notion that the world stories theorist will be able to represent the possible non-existence of an actual object in an actualistically acceptable way, namely without assuming the existence of world stories containing singular propositions about objects that would not exist, had that world story been the true world story. The notion of local maximality is thus needed to represent, by means of the notion of “truth at”, my possible existence

in an actualistically acceptable way and solve the problem of the possible non-existence of actuals for the world stories approach.

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