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Modal Metaphysics: Issues on the (Im)possible I

The first three papers published in this issue of Organon F *were presented at the* Modal Metaphysics: Issues on the (Im)Possible Conference I*, organized by the Institute of Philosophy of Slovak Academy of Sciences in September 19-20, 2013 in Bratislava, Slovakia.*[1] *The aim of the conference was to address philosophical issues of modality, namely the meaningfulness of modal talk, its semantic analyses and metaphysical consequences. The idea to organize a conference on that very topic is not surprising because, as I have it, metaphysics of modality has played a central role in philosophical thinking. Every paper presents an original contribution to a still increasing literature, what only demonstrates that problems of modality, however approached, still give rise to new philosophical insights. Moreover, modal discourse and, possible and impossible worlds framework in particular, is not confined to metaphysics only. It figures in logic, semantics, philosophy of science, epistemology, ethics or theory of decision. Possible and impossible worlds are used to formulate theories, make claims and state supervenience theses. Since other applications are still coming, topics in the philosophy of modality are only to be expected to attract more and more philosophical audience. Let me therefore sketch at least some of the topics that philosophy of modality covers.*

The "(im)possible issues" problem

It is virtually inconceivable to engage in everyday reasoning without notions like 'could', 'possible', 'impossible', and the likes. Although Obama won the presidential election in 2012, he could have lost. Although it is sunny today it is possible that it will be raining tomorrow. But however the weather actually is we all happen to agree that it is impossible that I will fly on the moon in five minutes. And, finally, it is impossible to square the circle since to do so would contradict actually accepted geometric.

There is a plenty of possible and impossible scenarios, differing in how strong those possibilities and impossibilities are. Sure, it is impossible that I fly on the moon in five minutes, but still 'less' impossible than that I square the circle. There is an apparent hierarchy of the impossibilities that, in an ideal case, can be systematized in a unified theory.

[1] For a full report from the conference, see *Organon F* 21, No. 1, 138-139.

In order to analyse the notions in a clear and more informative way philosophers introduced possible worlds *as a useful guide to such notions. Although the term 'possible world' has various connotations in philosophy it usually means 'a way the world might have been'. To illustrate, the world is such that I am sitting behind my desk, writing this introduction, own a pug, Bratislava is the capital of Slovakia and, naturally, many more sentences that truly describe this world. But if I were a football player I would not be writing this introduction. Rather, I would be on the football field developing my football skills. Also, it is not a necessary truth that I own a pug. If I were more demanding I could try to teach a monkey to read or train a cat to fly. There is a lot of scenarios our world could be, although some of them are 'more possible' than others.*

Interestingly, after the possible-worlds terminology was established it turned out to be difficult to pursue contemporary metaphysics unless we either implicitly or explicitly refer to it. The reason for such a turn is simple: possible worlds have been playing an important explanatory role in philosophy. In particular, the acceptance of the possible worlds talk implies the acceptance of the systematic correspondence between certain modal facts and facts regarding the existence of possible worlds, namely

(P) *It is possible that P* iff *there is a w such that w is a possible world and 'P' is true at w.*

Things get even more complicated when we realize that the extent of the possible does not fully exhaust the domain of our modal intuitions. For instance, however the history of any world goes there are no worlds which are such that, say, there is a round square in them. Also, however the (actual or possible) history of any world goes there are no worlds at which '$2+2=5$' is true. But those situations are certainly different as one might, for example, believe the latter without believing the former (and vice versa). If that is so, (P) is not fine-grained enough to systematize the datum.

A natural move here might seem to stretch an extra mile and, beside possible worlds, incorporate impossible worlds into the analysis. Surely, (P) would still hold about possibility. But when it comes to impossibility its modified version, (I), enters into the game. Thus

(I) *It is impossible that I* iff *there is an i such that i is an impossible world and 'I' is true at i.*

Again, (I) provides us with a systematic correspondence between certain modal facts and facts regarding the existence of impossible worlds. In this case, let suppose someone who, although highly educated, believes that '$2+2=4$' is true, while also believes that '$e^{i\pi}=-1$' is false. Since both of the above are examples of mathematical truths – and those

are true irrespective of any possible world! – modelling one's belief states by means of possible worlds only is too coarse grained. For, to belief in '$2+2=4$' would turn out to be the same as to believe in '$e^{i\pi}=-1$'. But, ex hypothesis*, one can believe in the former without believing (or lacking a belief about) the latter.*[2]

An available option is to extend our ontology by impossible worlds so that we have worlds at which '$e^{i\pi}=-1$' is false, while '$2+2=4$' is true. We then get:

(I') *It is impossible that '$2+2=4$' is true and '$e^{i\pi}=-1$' is false* iff *there is an i' such that i' is an impossible world and '$2+2=4$' is true and '$e^{i\pi}=-1$' is false at i'.*

Such a biconditional says that there are worlds – although impossible – that make some necessarily true propositions false. Consequently, theories that use possible as well as impossible worlds draw the distinctions we need any theory to draw. And that's desirable.

Semantic vs. metaphysics

Granted all the above, possible and impossible worlds are worth of accepting provided we accept the benefits they bear. But to provide possible explanatory justification is one thing, to provide an informative description of their nature, secure their plenitude and fix their (logical) behaviour quite another. In other words, the acceptance of possible/impossible-worlds talk is strictly conditional at, and dependent on, a story as what *the worlds are. Therefore, if possible and impossible worlds are of non-circular use in philosophy then we should be able to find a place for them within our ontology.*

For years, there have been disputes as which ontology of possible and impossible worlds to prefer and philosophers do not seem to stop complicating the issues. Given we seriously commit to the existence of possible and impossible worlds, we have (at least) two options at disposal.[3] *Either we take them to be* abstract *entities like properties (Stalnaker 1976), sets of sentences or propositions (Adams 1974), states of affairs (Armstrong 1989), world-*

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[2] Note, that the granularity problem is not restricted to propositional attitudes and appears in case of any necessarily false propositions. See, among others, Ripley (2012).

[3] For now, I will deal with realistic conceptions only. According to them worlds exist, period – and some of them are possible relative to a certain world and some other are impossible relative to the world in question. There, however, are other options too. One of them, rather controversially, denies the meaningfulness of modal discourse altogether. Another option is to accept the meaningfulness of such a talk but deny that it is about something existing at all. Those theories take possible worlds to be useful fictions (Rosen 1990) or non-existent entities (Meinong 1981). See Divers (2002) for an excellent overview.

books (Plantinga 1974) etc., or we accept a more robust ontology of full-blooded concrete *individuals. In the former case, the entities at issue* represent *various possibilities in an indirect (or ersatz*[4]*) way, while the theories of the latter sort take possible worlds to* genuinely be *the possibilities (Lewis 1986). Analogously, the very same questions arise when it comes to impossibility. Namely: what are impossible worlds? Were we to accept them, should they be of the same ontological nature as those possible are (cf. Priest 1997; Yagisawa 1988; Vander Laan 1997)? Or, assuming that possibility-impossibility distinction curves reality into its joints, should they be of a different kind (Berto 2010; Mares 1997)?*

Let suppose that we accept a theory according to which possible worlds are abstract entities (sets, propositions, properties or whatever you have). It seems as if there is no more to be done to extend such an abstractionists' ontology by more exotic entities. For, if one thinks that possible worlds are maximal and consistent sets of proposition, she commits herself to the existence of sets and propositions. But then there is no worry in saying that besides maximal sets of proposition there are sets that does not contain every proposition or its negation. Similarly, there is no worry in saying that besides the sets containing only mutually consistent propositions there are some that do not. The reason is that the sets and propositions are already there and the set-membership relation is not restrictive in this sense. There is no principal objection against impossible worlds in the abstractionists' framework.

Consider now that we accept a strongly realistic position according to which possible worlds are as concrete as 'I and all my surroundings' is. To sustain the ontological parity impossible worlds are thought to be concrete as well. But if there are concrete worlds for every impossibility their real existence drags any impossibility to be true of our world. It's since the fact that concretists represent impossibilities in a direct way, meaning that to be impossible is to exist simpliciter. *Although some concretists are willing to bite a bullet and admit that there are concrete possible worlds and also impossible worlds in an equally realistic sense, others look for more modest proposals (see McDaniel 2004).*

Finally, one might think that neither option is good enough and it is the combination of the two that secures the balance between ontology and explanation (cf. Divers 2002; Berto 2010). Such a view goes along the following lines: although concrete possible worlds help us a lot when it comes to possible phenomena, impossible phenomena should be represented *rather than unrestrictedly* exist. *On this approach, concrete worlds provide enough non-actual entities for us to directly represent all the possibilities – they are 'the basic stuff' of the world-building enterprise. But impossible words are rather constructed out of the concrete resources.*

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[4] The term appears in Lewis (1986).

So far so good. Note, however, that impossibilities considered so far concerned what one might call the absolute impossibilities, including logical, mathematical or analytical impossibilities. But philosophy, especially modal metaphysics, deals with subtler impossibilities too. I will discuss some of them in turn.

Counting impossibilities

Assume that we prefer genuine modal realism to modal ersatzism. Modal realism is a theory according to which possible worlds are concrete mereological sums of spatio-temporally interrelated individuals. According to the theory, the schema (P) is understood as

> *(PM) It is possible that P* iff *there is a w such that w is a maximal mereological sum of spatio-temporally interrelated individuals and 'P' is true at w.*

As (PM) states, to be possible is to exist wholly within one world only. On the other side, modal realists commit to a so-called principle of unrestricted summation. Besides individuals existing in one world only the principle generates transworld *individuals out of individuals that exist in different worlds. But by (PM) it is impossible that such individuals exist. So how to classify such individuals on the possible-impossible scale? Are they impossible?*

Yes and no. For Lewis, no true contradictions and so no maximal mereological sum of spatio-temporally interrelated individuals contains genuine impossibilities. But what about a subtler impossibility according to modal realism, but intuitive possibility of there being spatio-temporally isolated *individuals? Such individuals, let's call them island universes, are not possible according the theory. For, if they were possible (PM') would hold. Namely,*

> *(PM') It is possible that there are spatio-temporally* isolated *individuals iff there is a w such that w is a maximal mereological sum of spatio-temporally* interrelated *individuals and 'there are spatio-temporally* isolated *individuals' is true at w.*

Assuming, for the sake of the argument, that interrelatedness excludes isolation (PM') is an inconsistent dual.

But there is apparent difference in saying that something is absolutely impossible and saying that something is impossible according to a theory. Real inconsistencies do not exist because supposing they do we commit ourselves to a plain contradiction. But assuming that island universes exist does not equal to a plain contradiction. They do not exist if modal realism is true. But were some other theory be preferred, island universes would

pass the 'possibility' test. Another example is the possibility of there being absolutely nothing. Again, modal realism does not have resources to accommodate such a possibility. For, if a world is what modal realists take it to be that makes no provision for an absolutely empty world. And although it might be disputable as how bad such a consequence is, opponents of modal realism take it as a virtues of a theory if it can account for it.

Consider now a quite different theory of possible worlds: linguistic ersatzism. This approach to modality takes possible worlds to be sets of sentences in some 'worldmaking' language. In order for the theory to be accurate such a language must be expressible enough to represent all the possible situations we want to represent (cf. Lewis 1986; or Jago 2013). And this requirement gives raise to a problem. Namely, there is a problem as how to represent possible but non-actual particulars, properties and relations without conflation. From the ontological assumptions of (at least some branch of) linguistic ersatzism[5] *such entities do not exist and, a fortiori, cannot be named. And so the linguistic doctrines are alleged to misrepresent the range of possibilities by failing to distinguish indiscernible possible individuals and alien properties (such as having ¼ charge) that differ only in respect of their alien natural properties. In a word, alien properties are, according to linguistic ersatzism, impossible.*

But we are still inclined to think that alien individuals, properties and relations are not impossible in an absolute (meaning logical, mathematical of conceptual) sense. For it would be too proud to think that any possible property is instantiated in the actual world and our home language contains names and predicated for every possible individual and every possible property, respectively. Moreover, other theories do have resources that enable us to distinguish such possibilities so why should we think that one metaphysical theory rather than another determines the extent of absolute possibility?

To sum up, the rejection of impossibilia may mean various things. It may mean absolute impossibilities concerning logical, mathematical or conceptual ones. But there are subtler impossibilities that may infect one theory or another. A lot of philosophers agree that at least some individuals just are impossible in order to consistently formulate their ontological postulates. But at the same time they disagree on particular cases in which it is one's metaphysical theory that provides the final verdict. The impossibility of there being island universes, the (im)possibility of there being absolutely nothing or the (im)possibility of there being alien properties are just some along many controversial cases.

Although the collected papers present just a bit of what was presented during the conference we are happy for every single piece that appears in this issue. Naturally, every pa-

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[5] For, certain objections against linguistic ersatzism are quickly answered by taking a broad view of what counts as a sentence (cf. Sider 2002). But even if the argument challenges only some versions of linguistic ersatzism it is enough for my purposes.

per deals with some aspect of modality. Marco Simionato considered a narrower and theoretically more loaded impossibility, namely the (im)possibility of there to be absolutely empty world. In his Might There Be an Absolutely Empty World? *he offers an argument to defend absolute nihilism without appealing to (any version of) the subtraction argument. Yet another approach – Transparent intensional logic – is presented by Jiří Raclavský in* Tichýan Impossible Worlds. *In it, Raclavský reconstructs Tichý's conception of possible worlds taken as parameters of (logical) modality and suggests hyperintensional correlates of them. Finally, a position standing between the actualists and Meinongians theories of fiction and fictional names is developed by Ceth Lightfield. Namely, his* Ficta as Mere Possibilia *wonders into what's possible and impossible according to the possibilist-anti-creationist framework.*

As one of the organizers, I would like to thank to our keynote speakers, participants and audience. Their presence at the conference made the event an excellent place for discussions as well as opened new perspectives in modal metaphysics. Big thank goes also to the Institute of Philosophy for enabling the conference to happen. Without its support the conference, although still possible, would definitely not be actual. Finally, thank to the journal Organon F *for willingness to publish the selected papers and anonymous referees for reviewing these papers. That only underlines the trend that Slovak philosophical community becomes an active contributor to current debates in analytic philosophy.*

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