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CONCRETE IMPOSSIBLE WORLDS

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The paper deals with such a modification of genuine modal realism as to accommodate impossible worlds into its ontology. First of all, the theory of modal realism is presented. Next, several motivations for the acceptance of impossible worlds are adduced. Further, Lewis's argument against impossible worlds is presented. It is argued that the argument can be weakened by rejection of one of its premises. Finally, two objections against the proposal are countered. Although my strategy accounts for the Opinion concerning the impossible, it allegedly violates another Opinion which conceives the reality classical. It seems, however, that there is no no-question-begging reason to think that reality is classical. How can we know, after all, which logic describes reality? Without a definite answer to the question, the incredibility objection then simply collapses into a statement of a possibilist dogma.

Keywords: Modality – Possible world – Modal realism – Impossible world

Modal Realism. A Lewisian theory can be seen as a tripartite structure consisting of <Opinion, Definitions, Metaphysical Base>.[1] The Opinions – the input to analysis – are, broadly speaking, those general and jointly accepted pre-theoretical opinions that include scientific as well as ordinary knowledge, naïve beliefs in dogs, tables and chairs, the beliefs that the grass is green, that I am writing this paper, the beliefs that chairs might have been otherwise arranged, that the physics could have been otherwise, although the logic could not. Simply, the Opinions are those claims that we believe to be true and that any theory (of modality) should accommodate.[2]

On the other side, among our pre-philosophical opinions do not belong their philosophical counterparts, for example such opinions as grass *instantiates* the property of 'being green', that there is a *possible world* at which physics is different from the physics of the actual world or that there is no *possible world* such that there is a round square in it. Thus, for example, the Opinion that there are physical objects is different from an opinion that individuals are mind-independent entities. Similarly, the Opinion that there could have been talking donkeys is different from an opinion that there is a full-blooded talking donkey as a part of a possible world. The reason is that while the former opinions consti-

[1] See Divers (manuscript: 3), Divers (2002), Cameron (2012), Lewis (1973) or Lewis (1986).

[2] Thus: '…never put forward a philosophical theory that you yourself cannot believe in your least philosophical and *commonsensical* moments. (Lewis 1986: 135, my italics).

tute our pre-philosophical knowledge,[3] the latter are specific philosophical interpretations of them.

The third component (I will present the second one later) is the Metaphysical Base – a systematic account of what there is and how it is, which it fixes what is ultimately relevant to whether the truth-condition of any sentence is satisfied or not. In other words, the Metaphysical Base comprises the ontological and ideological commitments of the theory, the list of everything what there (unrestrictedly) is, what there might have been as well as the list of all the primitive predicates. One's ontological commitments are given through the values that bound variables must have in order that the sentence be true. On the other hand, one's ideological commitments are given primarily through the predicates, operators and expressions of other syntactic categories left as primitive (or undefined) (Divers manuscript: 8).

We can informally sketch the Lewisian ontological component in the following lines:[4]

1. There exist concrete individuals.
2. There exist sets[5].
3. Everything is either set or an individual.
4. There exists the empty set.
5. For every individual there exists a set such that the individual is its only member.
6. There exist set theoretic constructions out of individuals.
7. Unrestricted mereological summation: whenever there are some things, there is a mereological sum composed of just those things
8. Every individual which is a part of a world is a part only of that world and not of any other world.
9. The principle of recombination: 'patching together parts of different possible worlds yields another possible world', or in more philosophical terms, 'anything can coexist with anything else' (Lewis 1986: 91).

Finally, the second component of the Lewisian analytical structure consists of the Definitions – an account of the conceptual content of our pre-theoretical (modal, non-

[3] We can simply think about the Opinion as Moorean 'beliefs of common sense'. As he states the problem '[w]e are all, I think, in the strange position that we do know many things… and yet we do not know how we know them' (Moore 1925; in 1959, 44).

[4] Note, that the Metaphysical Base of Lewis (1991) is quite different. For example, the difference can be seen in the following thesis of (1991): *The parts of a class are precisely its subclasses*. Note, that by 'class' Lewis does not mean 'set'. Although classes have members, some classes are proper classes, and hence not sets. One set, the null set, has no members, so is not a class. Individuals, according to Lewis (1991), are things without members. The null set has no members, it is an individual. But the overlap between the sets and the classes is large; most sets we think about are classes. See Lewis (1991) and Weatherson (2009: 7.1).

[5] Of course, the quantification over sets can be considered as problematic. Here, I just suppose that quantification over sets is a primitive feature of the theory. Compare Lewis (1986) with Lewis (1991).

modal and intensional) talk. Definitions specify meanings and senses of our pre-theoretical terms that figure in the Opinion and of theoretical terms introduced for the purposes of the analytic theory. The Definitions, in general, may be explicit or implicit, but in any case are analytic and necessarily true.

In particular, Lewis proposes several explicit definitions in his theory. For my purposes, the following definitions are relevant:

World	*x is a* world *iff* x is a maximal mereological sum of spatiotemporally interrelated individuals
Actual World	x is the actual world for y *iff* is x is a world and y is a part of x
Possibility	It is possible that P *iff* there is a world, w, such that at w, P
Impossibility	It is impossible that P *iff* there is *no* world, w, such that at w, P

The Lewisian account of properties and propositions, on the other side, requires there to be roles we usually associate with the terms of properties and propositions. Since we introduce the terms 'by way of a varied repertory of ordinary and philosophical uses' (Lewis 1986, 55) there is no definitive and explicit way how to define them. All we can do, according Lewis, is to provide implicit functional specifications of the roles and, consequently, explicit ontological identifications of those entities playing the roles at issue. In particular

Property	x is a property *iff* x is a subset of the set of all individuals
Proposition	x is a proposition *iff* x is a subset of the set of all worlds

Basically, Lewis thinks a) that for all of the roles, the same candidate for role-player is best (namely set of possibilia); b) propositions are just special cases of properties and c) the role player is not a contingent matter. It is *not* one thing at one world and another thing at another world.

Why Impossibilia? One of the most obvious reasons why we need impossible worlds comes from counterpossible reasoning. Consider the following pair of counterpossible conditionals:

1. If Sally were to square the circle, we would be surprised.
2. If Sally were to square the circle, we would not be surprised.[6]

Apparently, if one of the conditionals is true, it seems reasonable to conclude, that the other is false. Put otherwise, we seem to distinguish between the truth and the falsity of the conditionals in such a way that we assume something to be the case and wonder

[6] See Mares (1997, 517).

what would and would not follow from that.[7] The problem is that the above cases contain impossible antecedents. Given the Lewisian semantics for counterpossible conditionals, however, they are trivially true.[8] Since there is no world at which Sally were to square the circle, the apparent difference in their truth conditions has been lost.[9]

Another motivation for the acceptance of impossible worlds is the so-called granularity problem. As we already know, Lewis's identifies the role players of properties and propositions with the sets of their instances. Thus, the property of 'being a talking donkey' is identified with the set of its instances, namely the set of all (unrestrictedly speaking) talking donkeys. But what about properties had by no possibilia? Is the property of, say, 'being a married bachelor' the same as the property of 'being a round square'? It does not seem so.

Also, according to Lewis, propositions are special cases of properties, namely properties of worlds. Therefore, the proposition 'there are talking donkeys' is identified with the set of all those worlds that are such that the proposition 'there are talking donkeys' holds at them. But again. What about propositions holding at no possible world? Is the proposition, say, 'there is a married bachelor' the same as the proposition 'there is a round square'? Again, it does not seem so.

Finally, it is an indisputable fact that we all experience having inconsistent beliefs. But they also pose a problem for Lewis's theory. Consider the two beliefs:

3. I believe that the square root of two is rational.
4. I believe that the Law of identity is false.

Since I seem to understand that (3) is a quite different belief from (4), I could, for

[7] See Berto (2010), among others.

[8] (Lewis 1973, 24-26).

[9] Interestingly, Lewis himself asserts counterpossible conditionals while wonders what would and what would not follow from that:

' …if, *per impossibile,* the method of dominance had succeeded in ranking some false theories above others, it could still have been challenged by those who care little about truth' (Lewis 1986, 25).

'If, per impossible, you knew which row contained the mystery number, you should then conclude that it is almost certainly prime' (Lewis 1986, 120).

'The same would have been true if all different alterations had appeared in different parts of one big world' (Lewis 1986, 129).

'…even if, per impossibile, the job could be done, I would still find it very peculiar if it turned out that before we can finish analyzing modality, we have to analyze talking-donkeyhood as well!' (Lewis 1986, 170).

'Suppose, per impossibile, that you knew which equivalence class contains the actual world' (Lewis 1986, 120).

'Suppose, per impossibile, that the ersatzer did produce the requisite axioms; and what is still more marvellous, that he persuaded us that he had them right' (Lewis 1986, 156).

'Suppose, per impossibile, that spherical shape is not the intrinsic property it seems to be, but rather is a relation that things sometimes bear to worlds of which they are parts (Lewis 1986, 261).

example, believe (3) without believing (4). Therefore, our theory should provide for it.

Impossible Worlds to the Rescue? I claim that impossible worlds provide the most straightforward remedy to the above problem. To begin with counterfactual conditionals, the existence of two different impossible worlds, one being such that Sally squares the circle and we would be surprised while another being such that Sally squares the circle and we would not be surprised, the unwanted consequence that both conditionals are trivially true is avoided.[10] Also, the admission of impossibilia solves the granularity problem. Simply, having such impossible objects as a round square and a married bachelor in our ontology, we do not identify the respective properties and propositions with the same set. The set of round squares is different from the set of married bachelors as well as the set of worlds having a round square as a part is different from the set of worlds having a married bachelor as a part. Finally, it is no accident that once we accept impossible worlds the situation with inconsistent beliefs changes. For, the fact that the above beliefs are different is underpinned by the existence of an impossible world such 'that the square root of two is rational' holds at it, without being such that the Law of identity is false.

David Lewis on Impossible Worlds. Lewis's disapproving attitude towards impossible worlds is expressed by a reductio in the following argument:

1. There exists an impossible world at which (P and ~P).
2. At *w* (P and ~P) *if and only if* at *w* P and ~(at *w* P).
3. To tell the alleged truth about the marvellous contradictory things is not different from contradicting yourself.
4. <u>There is no subject matter about which you can tell the truth by contradicting yourself.</u>

Impossible worlds **do not** exist.

The argument is, according to Lewis, valid. Premise (1) is an assumption, premises (2) and (3) reflect the fact, how Lewis's possible worlds represent possibility – individuals represent something to be the case by being that way; so a possible world represents that there are talking donkeys by having talking donkeys as parts, and represent the negation of that by not having any talking donkeys as parts.[11] Finally, premise (4) expresses

[10] Surely, there are other questions that arise. One of them is whether we accept the thesis that any possible world is closer to the actual world that any impossible world. It seems intuitive that the Hell will freeze before logical laws abandon us. Berto (2009). See Krakauer (forthcoming), Nolan (1997) and Mares (1997).

[11] The principal difference between Lewis's realism and ersatzism is that for him 'at w' works as a restricting modifier. If, on the other hand, 'at w' were not a restricting modifier but functioned like 'According to some world-story', then Lewis's argument would fail. It is because of the fact that non-restricting modifiers *do* have an effect on truth-functional connectives. For example, ,''Fred says that not P' and 'Not : Fred says that P' are independent: both, either, or neither might be true' (Lewis 1986, 7, fn.

nothing but the systematic expression of Lewis's naïve, pre-philosophical opinion that physics could be different, but not logic or arithmetic (Lewis 1973, 88).

In what follows, I will argue that even if this were so, there is room to argue that this consequence is less objectionable than it appears.

True Contradictions? When proposing his theory of extended modal realism, Yagisawa writes:

[w]hy can you not tell the truth about an impossible thing by contradicting yourself? It seems that you have to contradict yourself to tell the truth about impossible thing. What else would we expect? Impossible things are *impossible!*' (Yagisawa 1988, 203, his emphasis).

In other words, Yagisawa's response to Lewis's argument simply takes for granted that a) there are subject matters about which you can tell the truth by contradicting yourself and, given the behaviour of 'at w' modifier, that b) there are true contradictions in the actual world[12, 13].

However, there are, in my opinion, at least two possible ways of meeting the challenge. The first (modest) approach rests on the modifying our logic to the extent that the modified logic would accommodate impossible worlds in a non-trivial sense. This position, represented mainly by paraconsitent philosophers, maintains that there really are inconsistencies in reality. For example, there are situations in which things like the failure of *ex falso quodlibet* happen. If that were so, the logic picturing these phenomena should be paraconsitent. Of course, that would mean the violation of our pre-theoretical opinion that the logic of the actual worlds is classical and, consequently, the conservativeness of modal realism. The question, however, whether such a move can be justified is still open to dispute.

The second (sceptical) approach to be mentioned here presents, as it seems, the straightforward consequence of the extended modal realist's strategy. We may fittingly ask, how can we require there to be a unified and absolutely universal logical theory of whole reality? In any case, if reality as a whole admits of no logical systematization, then our theories of reality will surely have only limited logical reach. What is more, one does not have to necessarily accept the actual truth of contradictions. It only suffices to emphasize that the truth of some contradictions 'somewhere' in reality (in some impossible world) does not imply their truth in the actual world.

Surely, the cost is a considerable one and might seem hard to swallow. But why one

3). For a criticism of Lewis's account, see Lycan (1991: 227), among others.

[12] Since a contradiction true 'at some impossible world' infects the actual world, the invalidation of classical logic seems unavoidable.

[13] For *ersatz* solutions to the problem, see Divers (2002) and Berto (2010). For limitations of the solutions, see Vacek (forthcoming).

should expect the whole of reality to fit any logical system, and, a fortiori, be accessible to our reasoning abilities. Moreover, it seems only to be expected that every attempt to go *beyond* our logical space goes hand in hand with the production of the impalpable logical chaos.

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