RESEARCH ARTICLE

The Problem of the Truth of the Counterfactual Conditionals in the Context of Modal Realism and the Semantics of the Possible Worlds

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Abstract

The article deals with some aspects of the problem of the possible worlds in the context of David Lewis' modal realism. It is suggested that one of the significant contexts in this respect is the question of truth of counterfactual conditionals.

Keywords: modal realism, the possible worlds, counterfactuals, truth.

Introduction

The concept of the possible world dates back to Leibniz's analytics, in which he claims that God created this world as actual and the best of all possible worlds; thus, he stated the possibility of other worlds that were not actualized. This statement gained attention and significance in the field of analytic philosophy, specifically in an area of necessity or indeterminism of truth, the mind-body problem, truth conditionals for counterfactual statements, etc. Overall, the concept of possible worlds functions in quite a wide range of contexts, those being:

– Philosophical discourse on actual and potential, necessary, random and possible;
– Problems of analytic theology;
– Model-theoretic semantics;
– Engineering of multi-layered computer interface;
– Media culture, fantasy, digital entertainment.

Thus, the concept of possible worlds is widely implemented and ontological and epistemological status possibilia is a subject of investigation in the philosophy of modalities and modal ontology. As for the investigation of ontological and epistemological status possibilia in analytic philosophical tradition, it has developed into at least three main approaches: possibilism, modal realism, and actualism.

Literature review

Supporters of actualism and especially R. Adams, have a lot of doubts about the existence of possibilities and possible objects, possible scenarios or states of affairs. According to them, everything that exists is actual, and there is no object that could exist not actually, factually. Therefore, actualists focus attention merely on the existence of actual entities as a subset of the

class of possibilities. If something does exist, its existence neither depends on experiences nor subjectively realized. Other entities exist only in the area of possibilities (Adams, 1974; 1981).

Supporters of possibilism incline to believe that possibilities and possible objects are ontologically possible in possible worlds, but they do not exist in terms of their actuality [p. 303] (McDaniel, 2006), although some of them have the potential to exist in the physical world. All existing object are ontologically balanced, possibilia exist in the same sense as actual objects. Thus, the sphere of possible coincides with the sphere of existing.

The representatives of modal realism, particularly Lewis, acclaim the actual existence of possibilities and possible objects in possible worlds. The uncountable number of possible worlds exists in reality in the same ways our actual world does. Lewis believes that the necessary nature of true proposition is defined by the fact of this proposition being true in all possible worlds. This criterion, as it seems, enables the differencing of conditional counterfactual propositions in two contexts: in the context of them being true/false and in the context of the existence of presence/absence of the quality.

D. Lewis is convinced that there are a few ways of existence apart from factual existence; therefore, if it is possible to think about the certain world, then this possible world is actual [p. 84] (Lewis, 1970). Overall, one can identify the following general principles of the concept of possible worlds, according to American analytical philosopher Lewis:

−possible worlds are as real as the actual world; they differ only in terms of contents, but not ontologically;

−possible worlds are causally, time-space divided from one another;

−the possible world is a mereological set of elements, it contains everything that is possible to be contained in it and in this perspective it is a sufficient universum;

−as far as going beyond existing leads to a logical contradiction, one cannot logically suggest the impossibility of possible worlds.

In this context, it seems reasonable to review the conception of Lewis on the contrary of Meinong's position on the necessity of the existence of the object of cognition, which correlates with the opinion of the American analytic philosopher of 'anything conceivable to be actual'. Although, in this case, as Lewis believes, the abstract entities should be automatically counted as conceivable, thus existing, even though it is problematic (if not impossible) to define their particular qualities. According to American philosopher, it is qualities that are fundamental in the structure of factual, moreover he did not recognize the hierarchy of the qualities that means that they all acquire the same ontological status.

Later on, after Australian analytic philosopher D. Armstrong had criticized this conception, Lewis had to make some adjustments in his 'expanded ontology' in particular, Armstrong's criticism concerned coextensive qualities. Thus, according to Lewis, two co-extensive qualities of actual world are indeterminate, and Armstrong notices, that in some possible worlds, those qualities can go separately like 'being a creature with a heart vs. being a creature with a kidney'. Although in our actual world, those two coextensive qualities, following the Lewis's logic, are supposed to be indeterminate. Therefore, Armstrong claims, that qualities are not coextensive in each possible world.

Armstrong's criticism of Lewis' "expanded ontology" made the later look for so-called "natural qualities" of actuality. He deduced them to be found in universals that, unlike pure qualities:

−   are actualized differently;

−   objectify the functionality of entities and determine their causality.

This new hierarchy of qualities, created due to Armstrong's criticism, allowed Lewis to deduce the limitations to the possible worlds. In his time, Immanuel Kant also shared this position. In his view, it seems, at the first sight, that possible is quantitatively bigger than actual, because to produce something actual one needs to add some component to the possible, but something, that is added to possible would not be considered possible itself, thus according to I. Kant, it is impossible. However, the modal realism does not object the existence of possible worlds that are almost entire copies of our actual world, or at least it is safe to say that in this context such propositions are not considered controversial.

Lewis' modal realism is the result of his interpretation of modal logic that is actualizing the category of possibility for all possible worlds. Analyzing conditional counterfactual propositions American philosopher argues that the existence of all the ways things could exist apart from the way in which they actually exist is the possible worlds. Therefore, "possible worlds" do exist, although they are time-space and causally isolated from our actual world.

This position seems to need some clarification, in order not to certify its "antimodal" nature, and, therefore, we incline to call it not modal realism, but the modal relativism, allowing the categories of possible, actual, necessary and indeterminate to be considered at least as relative, relational.

Thus, we can assume that the status of the actuality of the world, according to Lewis (1970) is indexical [p. 184-185], e.i. it is dependent on the linguistic conditions, particularly in which circumstances the question is asked. It is significant to relate to the fact in which of the worlds or in which of the descriptions of the worlds, the question occurs, because other words than the world in question are irrelevant to understanding the actuality of that world. Therefore, the very predicate "actual" becomes occasional, it is necessary to every possible world to be able to make propositions about that world. Moreover, the actuality is represented as a quality of a possible world acquired regardless of its factualness, and it at least does not contradict the possibility of the existence of mermaids or unicorns, or any creature conceivable.

Thus, for this type of factualness of the possible world it is sufficient to incorporate a certain proposition in the frame of this possible world. 'Actuality' of the world is a quality attributed by the proposition from the perspective of this world. This conception appears problematic because we are unable to make propositions concerning possible worlds from the point of view of our actual world since the world in question from such point of view is not considered actual.

Furthermore, there appears to be some epistemological skepticism concerning the given world. In possible worlds, there are only different scenarios for the actual world. Modal realism denies the interaction between different possible worlds. And each of them is neither more, nor less "real" than the one we live in.

Criticism of Lewis's position concerns the fact that modal realism utterly diminishes modality as it is. It is highly plausible that modalities of the actual world are only the representations of other possible worlds, and thus, the ontological status of those modalities is nothingness. It should be noted that Lewis's conception of possible worlds appears to be initially deliberated to resolve problems in the fields of logic and semantics. It was not supposed to be applied metaphysically. As Saul Kripke pointed out, in the discussion on possible worlds, those worlds are not related to our world, because it is not one of the possible worlds, from our perspective, it is the only actual world.

Taking the later in account, the concept of possible worlds can be considered as:
–an abstract object;
–conceivable possible state of affairs;
–the idea of the possible future events, appropriate actions, beliefs, etc.

Thus, the concept of the possible worlds is applied in modeling the actual process of cognition. Moreover, each one of us occasionally has to consider a few possible scenarios that we project in the counterfactual context. And, as a rule, those ideas about the possible state of affairs or future events are expressed through the medium of counterfactual propositions.

Knowledge can be expressed in one or the other form of a proposition: either factual as "Gravity on the Moon is less strong than gravity on Earth", or counterfactual as "If gravity on the Moon was not less powerful than on Earth, its surface would be able to contain some gasses that would impact its temperatures". It means that counterfactual propositions are expressed in conditional sentences. Formally, the counterfactual proposition implicitly contains the proposition that factually differs from the situation implicated in the condition (antecedent) of such statement.

One cannot deny the significance of counterfactuals in scientific cognition, in particular, their role in the procedure of formulating and rejecting hypothesizes. Conditional counterfactual statements are also vital for the proving reduction ad absurdum when the antecedent contradicts factuality. In the process of refutation to appoint the contradictory thesis, e.i. having counterfactual nature, one demonstrates its absurd implications. Thus, the following problems concerning the functioning of counterfactuals can be detected:

–the problem of determination of the possible worlds by structural means of counterfactual statements;

–the problem of equivalence and identity of counterfactual antecedents;

–the problem of truth of counterfactual propositions;

–the problem of logical implications in the structure of counterfactuals;

–the problem of differentiating of indeterminate and nomological proposition;

The relevance of investigating counterfactual statements and conditions of their truth were indicated by Nelson Goodman in his article "The Problem of Counterfactual Conditionals". Among other things, he notices that analysis of counterfactual conditionals is in no way a grammatical speculation. Furthermore, he implicates the very possibility of adequate philosophical analysis of the phenomenon of science is connected precisely with finding means to interpret counterfactual conditionals since they may give the means to solve "critical questions about law, confirmation, and the meaning of potentiality" [p. 113] (Goodman, 1947).

On the other hand, the analysis of counterfactuals allows to take a different look at the problem of the possible worlds and conception of modal realism, according to which possible worlds deserve the equal ontological status with the actual world. In this context, analyzing counterfactuals makes it possible to find conditions and criteria of the truth of counterfactual conditionals, that narrate the events that have not happened yet (or that cannot happen), and to what it is impossible to empirical correspondence with reality. So, thus, the criteria of the truth of counterfactuals mainly exist in the field of logical analysis.

Therefore, let us initially define the specifics of counterfactuals, and only thereafter try to apply the theory of counterfactual conditionals to the concept of the possible worlds and review the conditions of the truth of counterfactual propositions. Doubtless it is that true/false meanings of counterfactuals cannot be reduced to a true/false meaning of the observed factual propositions. It can be explained by the fact that counterfactuals have sometimes no relation to the events represented in such type of propositions and, therefore, cannot explain them. For example, the true factual proposition:

"Any material object can possess such a quality as extend"

can be rebuilt into the counterfactual with also true meaning:

"If a certain object was material, it would possess such a quality as extend".

Apparently, propositions like these represent not indeterminate, but necessary qualities of the phenomena they describe; therefore they can be interpreted as laws. Thus, the initial summing up provides the interconnection between true meanings of factuals and counterfactuals, that are of a nomological nature.

For the comparison, we may consider so-called 'indeterminate' propositions, for example, here is the factual proposition:

"Most of the large European states were colonial"

and the counterfactual:

"If this country had been European, there would have been a major possibility, that it would have been colonial"

As we can see, the true factual does not necessarily predetermines the truth of the counterfactual that can be explained by the indeterminate (not necessary) nature of the factual. On the contrary, we can assume the impossibility of coextensional interpretation of counterfactual propositions since it is improper to conceive them as such that can be attributed to the material implication, in the same way, the factual propositions are.

Goodman and Chisholm (1946) tried to define the implication of the consequent out of the antecedent in counterfactuals, and for this purpose it was necessary to find the relevant conditions (R), that when added to antecedent (A) would make the implication of the consequent (B) possible:

$$(RA) \vdash B$$

In this case, (B) is counterfactually implicated out of the antecedent (A), and (¬B) cannot be implicated. The problem is whether it is possible, assuming the potential infinity of relevant conditions (R), to find the conditions in which (B) would be counterfactually implicated, when (¬B) would not. According to them, adding laws of nature to the list of relevant conditions (R) generalizes interpretation of counterfactuals.

However, it leads to the need to determine how to divide the proposition expressing laws of nature from those that only on the outside seem to have nomological character, but are indeed of indeterminate nature. It appears that Bertrand Russell came close to resolving this problem, offering the following formal rule:

$$\forall x(A_x \vdash B_x)$$

For this rule the following propositions would be considered formally equal:

(1) "All metals are conductive" (Which can be formally represented as «for all (x), if (x) is a metal (A), then (x) is necessary conductive (B); thus, it is a necessarily true proposition expressing the law;

(2) "All my friends have an academic degree" (for all (x), if (x) is my friend (A), then (x) necessarily has an academic degree (B); thus, this proposition can be either false or indeterminately true.

Thus, in the case of (2) there is possible situation, proving the ineffectiveness of formal, rather than meaning-based approach to defining counterfactual conditional:

$$[(\forall x(A_x, B_x)) \rightarrow ((A_x \vdash B_x) \wedge (A_x \vdash \neg B_x))].$$

In the opinion of Nicholas Rescher, an individual operates with a certain system of some true (as he or she believes) propositions. Although, if in the experience there appears a proposition contradicting with some initial propositions within the system, it will lead to formulating the counterfactual. It raises the question: if the new proposition is true, what propositions should be confirmed and which ones should be rejected? The philosopher offers to act according to the principle of confirmation and disconfirmation, which cannot be applied to all the counterfactuals, rather only to so-called speculative counterfactual propositions that are ambiguous by their nature and, unlike laws of nature, do not follow general principles.

Apparently, defining the true/false meaning of the counterfactual is not covered by the principle of contextuality, formulated by Gottlob Frege. According to it, the true/false meaning of the antecedent and consequent of the counterfactual define the truth of the proposition. Furthermore, the connection between antecedent and consequent in counterfactual conditionals can be different, depending on the event it describes and does not always demonstrate the obviousness of it.

Goodman believes that there are other means to reason the truth of a counterfactual. The first component is a set of necessarily true generalized propositions (T), that are nomological. In this set, there should be an antecedent (A) of a potential counterfactual (A→B). This counterfactual is implicated out of (T) and (A). Thus, the implication is T, A ⊢ B.

Following this implication, we assume that counterfactual conditionals can be divided into the following types:

1) Indeterminate ambiguous counterfactuals;
2) Counterfactual concerning abstract logical and mathematical notions;
3) "Actual" counterfactual with empirical basis;
4) counterfactuals concerning the events of the past.

As an example for the first type, we may have the hypothesis 'Giuseppe Verdi and Hector Berlioz were compatriots'. The following counterfactuals can be implicated out of it:

a) "If Verdi and Berlioz were compatriots, they would be both Italians";
b) "If Verdi and Berlioz were compatriots, they would be both French".

It is not clear which of the propositions is true since consequents "they would be both Italians" and "they would be both French" are indeterminate to the hypothesis. In this case, it is best to apply Rescher's the principle of confirmation and disconformation.

Research results and conclusion

While dealing with the counterfactual concerning abstract objects of logic and mathematics, they should be considered only in the context of a certain theoretical system. Such type of counterfactuals are an idealized object, the truth of which cannot be implicated correspondently to factualness, but coherently to the theory itself.

"Actual" counterfactuals with the empiric component are only true if they fixate the causal relation of two or more events, and gain, therefore, nomological status. Karl Hempel emphasized the ambiguous nature of such propositions and precedents when nomological and indeterminate

counterfactuals can be confused. In particular, he claimed that the main functions of generalized laws (at least, in natural science) are explanatory and anticipatory. Although, the same can be applied to history and empirical science, the truth of which depends on the general law. Therefore, there might be counterfactuals concerning historical events, the status of which is not yet defined, at least in the respect to criteria of scientific knowledge, and, therefore, truth, and that are only used as figures of speech.

Thus, the problem of the counterfactual conditionals is the problem of defining the conditions for their truth or falseness. The peculiarity of such propositions is the fact that they do not correspond to the factuality, rather we are to define conditions for implicating accessible alternative. In this consideration, depending on the conception we relate to, e.i. actualism, possibilism or modal realism, the non-actual nature of the truth of counterfactual conditionals is confirmed.

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