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MANY-WORLDS THEORY OF TRUTH

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Abstract:
The logical world is a set of propositions, united by common principles of establishing their truth. The many-worlds theory asserting that the truth of any proposition in any given logical world is always established by comparing it with standard propositions in this world – directly or via the procedure of transferring the truth. Existing theories of truth (correspondence, authoritarian, pragmatic, semantic of Tarski and all other possible) are not theories of truth in the full meaning of the word; they must be considered merely as methods of fixation and generation of true propositions in one or another logical world.

First of all, I want to draw special attention to the fact that we consider here only, and solely the concept of truth as a characteristic of proposition in one or another language ('His testimony is true,' 'True solution of problem'), but not as teleological-epistemological category ('Knowledge naturally strives for truth,' 'Truth dwells in man's heart' etc.).[1] The concept of truth is understood here in its usual etymological meaning: true means correct, veritable, certain. That is to say, the true proposition is a correct, valid, indisputable proposition.

The principle starting the point of this theory is the assertion of truth's relativity: the truth of proposition can be established only and exclusively within the boundaries of one of the many more or less closed systems, which I propose to call logical worlds. It is clear that the proposition 'Snow is white' is true in the logical world of English language and it is not true in the world of Amazonian tribe's language. The proposition 'In two dimensional space, for any given line R and point P not on R, there is exactly one line through P that does not intersect R' is true in the logical world of Euclidean geometry, but it is false in the world of Lobachevskian geometry. The proposition 'Reincarnation exists' is not valid in logical worlds of different religions.

The term "world" is chosen to designate areas in which the truth of a proposition is fixed, because such areas are sufficiently autonomous and self-consistent – they have a comprehensive mechanism to determine the truth of propositions formulated in any of the languages adopted in these areas. It should also be noted that the term "logical world" is not quite accurate, it would be more correct to speak about "logical-worldview-linguistic worlds." However, for shortness sake and keeping in mind the problem of statement area, I will use the term "logical worlds."[2]

Now, combining an etymological understanding of truth and the notion of logical worlds, it is possible to give a more precise definition: a proposition should be considered true in one or another logical world, if it is correct (valid, indubitable) in this world. Admissibility is understood here in the broadest sense, as a compliance with logical, worldview, linguistic norms, rules and traditions of the given world.

Taking into account this definition of truth, we can concretize the concept of logical world. In essence, the logical world is a set of propositions, united by common principles of establishing their truth. So the logical world of Euclidean geometry consists of true propositions (theorems), obtained through inference (according to the laws of formal logic) from a specific set of axioms. At the same time, the world of Lobachevskian geometry includes a set of other propositions received by the same rules, but based on a modified set of axioms. Logical world of any religion is formed of propositions that are true from standpoint of the Scriptures and dogmas.

At the same time, we can also formally specify the concept of truth: asserting the truth of a certain proposition necessarily means that it belongs to one or another logical world. If we assert the truth of proposition without mentioning any logical world, it is automatically assumed that we have in mind the logical world of language, in which this proposition was formed (‘Snow is white’), or the logical world of the speaker (‘Angel is flying above me’). The individual logical world of man has its own implicit and explicit rules for determining the truth of a proposition, sometimes they pretty much differs from those in the worlds of other people.

Further, it should be noted that logical worlds are not isolated, they largely overlap. It is clear that logical world of the individual person – the set of true for him propositions – is formed at the intersection of linguistic logical world and other worlds: worldview, political, perhaps one of religious, etc. Therefore, the true proposition made without reference to its belonging to one or another logical world, may be interpreted as poly-true: it can be true simultaneously in the language world, some religious worlds and, of course, in the worldview logical world of the speaker. Consequently, when we affirm the truth of the proposition, we should always specify, belonging to what logical world is in question.

It is noteworthy that initial tenets of the theory of truth, which I suggested to call relativistic or many-worlds, were formulated without mentioning of the so-called “reality,” “actual state of things,” any “real situation.” It was enough to understand that there are non-finite sets of logical worlds with their own mechanisms (methods, rules, norms) of identifying and generating of acceptable propositions, and that a statement of proposition’s truth merely indicates its belonging to one of these worlds (or to several simultaneously). From this understanding and from given examples it clearly follows that there is no and cannot be one, universal for all worlds mode of ascertainment of proposition's truth. In religious worlds the dogmatic way of establishing the truth has a priority – everything that fits with Scripture is true. In theoretical-scientific, mathematical logical worlds the absolute priority is given to the method of logically deducing true propositions from established axioms – although the truth of axioms in each of such worlds is accepted by agreement, assumption. In individual logical worlds a statement of truth of spoken propositions is usually based on immediate personal conviction (often without understanding the reasons for this conviction) and on the norms of language practice.

But I cannot avoid talking about the relationship between truth and reality, because a lot of people, including logician-philosophers, interpret the truth as an immediate correspondence to the actual state of things. Although such interpretation brings forth an unsolvable problem: how can we compare, relate with each other proposition and real situation? Proposition is a set of words, but reality is objects, facts. How they can be compared? Should we put objects to the lines of a book? Or should we make grammatical and stylistic analysis of facts? It's like comparing a price of sausage with a length of shopboard. Indeed, it is quite clear that correspondence can be established only between similar objects.

The many-worlds theory of truth has no problem of correlation between proposition and reality (in the traditional sense of the word) – “real” here is understood merely as an indication that a proposition belongs to one or another logical world. So, the ascertainment of the truth of proposition boils down to comparing it with the set of true propositions. Thus, we obtain another one crucial point of the many-worlds theory: the *truth of proposition in a specific logical world is established only and solely by comparing it with other propositions of this world*.

This assertion is trivial for majority of already mentioned logical worlds and mechanisms of determining the truth. The stated truth of proposition, belonging to any religious or political logic world, is indicative of the fact, that it coincides with the dogmata, absolutely true propositions of this world, or that it is compatible with the dogmata logically, through a chain of correlated propositions. In geometry (and other theoretical logical worlds) axioms play the role of “dogmas” accepted as true propositions, and establishing the truth of theorems consists in proving of their unambiguous logical connection with the axioms (in fact, it is the coherent method of determining the truth). Well, it is clear that the proposition ‘Snow is white’ uttered by me is true for me because in the logical world of English language, in which I was trained, propositions like ‘Snow is white,’

‘Grass is green,’ ‘Wheel is round’ are initially true. To establish the truth of proposition ‘Snow is white’ I do not need to look out the window, I need only to correlate it with a valid (true) proposition in the language.

Another trivial mechanism for determining the truth of proposition is to compare it with a statistically sufficient set of similar propositions. So we accept as true the results of votes, sociological polls, testimony of the accused in court, confirmed by evidences of number of witnesses. As a special method of determining the truth of proposition we can mark out its comparison with authoritative propositions. Among these must be reckoned the texts of dictionaries, encyclopedias, manuals, handbooks, answers at the end of problem book, and the like, as well as statements of recognized authorities in a given logical world. Although it is clear that the authoritative method of determining the truth of proposition represents *per se* a mixture of dogmatic and statistical methods: it is externally perceived as a reference to dogmatic proposition, though its truth is established statistically (through multiple verifications, approvals, elaborations). In many logical worlds there exist propositions, whose truth is determined by convention, by agreement, that is, if there is a coincidence of propositions made by some set of people. These are propositions of legal laws, road traffic regulations, etiquettes, sports games, etc. The truth of many propositions in science, particularly those that fix terminology, is also established conventionally.

The essential moment in the procedure of determining the truth is the difference in status of correlated propositions: any particular proposition, for the determining of its truth, should be compared with some standard proposition which truth some way or other is already fixed in a logical world. It is clear that in different worlds such standards are dogmatic, authoritative, authoritarian, statistic, conventional propositions: texts of the Scriptures, encyclopedias, handbooks, statements of national leaders and famous personalities, legal laws, various conventionally established rules. In logical worlds of theoretical systems the role of standard true propositions play axioms and rules of transferring the truth from axioms to other propositions of a logical system (theory). Thus, *the truth of any proposition in any given logical world is always established by comparing it with standard propositions in this world – directly or via the procedure of transferring the truth.*

As I noted above, in logical worlds of individual languages the confidence in the truth of man’s spoken proposition is based on matching it with an identical proposition from the world of general (historical) Language, the truth of whose propositions is standard. Having introduced the concepts of individual language (l) and general language (L), we can write down: the proposition ‘Snow is white’ in (l) is true because ‘Snow is white’ is true in (L). This method of forming true propositions, when the truth of some particular proposition follows directly from a set of language rules, can be called linguistic. The linguistic truth does not require any mediation, any introducing of additional conditions; it is justified by tradition of using the stable language forms: ‘Wheel is round,’ ‘Fire is hot,’ ‘Winter comes after autumn.’ In fact, the linguistic truth should be considered as a variation of statistical. If there can be found some connection of the linguistic truth with the real situation, it is only indirect connection – through the long genesis of Language. To determine the truth of proposition ‘Winter comes after autumn’ we have no need to observe a change of seasons for several years – the truth is guaranteed by the long experience of such observations, which is fixed in the Language as proposition ‘Winter comes after autumn.’ It is clear that speaking about the identity of propositions in language and Language, I fix only the external, formal aspect of the problem – actually such linking of propositions takes place in the process of upbringing and learning and afterwards is perceived as natural a priori truth of the individual language.

It is remarkable that the formal record of determining the linguistic truth of individual language proposition (p) – “p in (l) is true if and only if p is true in (L)” – coincides with the T-scheme of Tarski, revealing its trivial sense: *proposition in the individual logical world is accepted as true, if in the logical world of general Language there exists identical true proposition.*

Of course, the introduced many-worlds theory asserting that the truth of proposition can be established only and exclusively in the procedure of comparing it with other propositions in concrete logical world, is faced with the problem of fixing the truth of propositions stating some

facts, some situation in reality (for example, 'It's snowing outside the window'), i.e. with the problem of determining the so-called *correspondence* truth.

First of all, it should be noted that propositions asserting some facts, are formed as true in the *individual logical world* – in the individual language and with reference to individual actuality of man. One may ask, why it is important to take this into account? The answer is simple: we must consider all variety of facts about which people can speak – not only such propositions as 'It's snowing outside the window,' but also such as 'The angel flies over me,' 'The President said the truth,' etc. And with this general approach it becomes clear that the truth of proposition about a fact in individual logical world is partly linguistic and partly statistical. That is, proposition fragments, but *per se* independent sentences – 'It's snowing,' 'The angel flies,' 'The President said' – should be regarded as linguistically true: their obvious validity is built into the language traditions. If a man doesn't know words "angel" or "president," the propositions mentioned will not be true in his individual logical world. As true, he will accept, for example, the propositions 'Alien flies,' 'The guy on the telly said.' The truth of full propositions about facts is based on a statistical comparison of them with the experience of using propositions in speaker's life. For instance, if a man has never seen snow, then such a fact as 'It's snowing outside the window' just will not exist in his actuality. And a man with, for example, an opposition experience of "political speaking" as a true description of the same "fact from telly" will say, 'The President told a lie.' That is, in the individual logical world any fact is just uttered proposition itself. And the truth of this proposition is fixed only as its statistical consistency with many other facts – propositions of the individual language and rules of the general Language.

Thus any proposition in the speaker's individual world is considered by him as obviously true because of a priori consistency of his language and his actuality. But since his actuality is in principle unavailable to others, as a fact, fixed in one or another proposition, we must accept only and solely this proposition, which in and of itself (outside the individual world) is neither true nor false. And naturally, if we want to transcend the individual truth, to speak about the truth of concrete proposition-fact in some supra-individual logical world (social, religious, political), then we must introduce other methods of determining the truth, other ways of comparing propositions. For instance, if several people looking out into the street will utter one and the same proposition 'It's snowing outside the window,' then this proposition must be recognized statistically true. Although we usually do not need such a statistical method (e.g. it is not necessary for us to look out the window ourselves to check whether it is snowing), if the person who pronounced the proposition about snow is sufficiently authoritative, i.e. if we know that so far most of his propositions coincided with ours. In much the same way, propositions 'The angel flies over me' and 'The President told the truth' can be automatically accepted as true in the respective logical worlds (religious and political), if the speaker is deemed indisputably authoritative in these worlds – saints and spiritual leaders always utter only true propositions. If the speaker is not the authority, then again just statistics – up to determining the truth of proposition by simple voting.

I must once again stress that seemingly so obvious connection of propositions like 'It's snowing outside the window' with the so-called reality is substantiated only by consistency of individual languages and actualities of various people on the subject-physical level. At this level, due to unified upbringing and education and unity of Language, we all belong to one logical world. But as soon as at other levels we disperse to different political, religious, ethic, aesthetic worlds, the illusion of relationship between the propositions' truth and some single reality immediately disappears. Also, it becomes evident that the truth is relative and that it can be established only through procedure of comparing propositions within separate logical worlds.

Also, it is necessary to consider the concept "scientific truth," i.e. to analyze the purpose and methods of determining the truth of propositions in logical world of science. First of all, it should be stated that this world is initially separated into two sufficiently autonomous subworlds, each with its own principles of determining the truth: theoretical and experimental. The truth of propositions in the world of theories (theoretical truth), we have already considered. As it should be in the many-world concept, it consists in the belonging of proposition to one of logical systems (theories). In

theories themselves the truth is established coherently – via comparing the proposition with a set of initially true axioms and rules. The truth of proposition in the world of the experiment (empirical truth), in effect the truth of instrument readings, is established statistically. To the statistic here contribute both reproducibility, repeatability of propositions-results, and a long experience of using instruments – concrete and all previously employed in scientific practice. It is worth noting that establishment of the empirical truth of proposition (measurement result) does not at all imply its correspondence to "reality," to "natural facts." A fact here is only a proposition itself (instrument readings), the truth of which is extremely statistical in nature.

Further, according to the developed theory, we must accept that determining the truth of scientific proposition consists in comparing theoretically true propositions and empirically true ones. But in this case the question arises, whether we have the right to compare two propositions formulated in different languages – theoretical and experimental? Do we have confidence that, for example, the concept "temperature" in theory, its concrete calculated value, is comparable with the numbers on thermometer scale? The answer to this question gives many-worlds theory of truth: the comparability of theoretical and experimental languages is conditioned by the existence of the single logical world of science, which historically includes in itself both theoretical and experimental subworlds, theoretical and experimental languages. That is, the truth of scientific proposition, determined by comparing identical theoretically and empirically true propositions (for instance, the coincidence of theoretically predicted temperature with instrument readings) is statistically guaranteed by all previous scientific experience.

It should be noted that practically in science there is established not some abstract truth, but the truth either of theoretical or of empirical propositions. In other words, there either takes place the testing of predictions of theory – and then the theoretical truth is determined by the fact of coincidence of experimental data with statistically reliable empirical truth. Or, contrariwise, the truth of experimental data is verified by comparison with theoretical predictions of recognized, authoritative scientific theory.

Finally, it would be useful to correlate the introduced concept with other existing theories of truth. Though I think that conclusion, which I will draw now, is already obvious to many: existing theories and subtheories of truth (correspondence, authoritarian, pragmatic, semantic of Tarski, consensus, coherence and all other possible) are not theories of truth in the full meaning of the word; they must be considered merely as independent, but certainly not the only ones, not universal methods of fixation and generation of true propositions in one or another logical world. In some logical worlds (religious, political) dominates authoritarian method, in other (theoretical) coherence method, and in third (social) prevails consensus form of determining the truth. Such an approach frees these "theories" from accusation of incapability to determine the truth of all possible propositions – now, when they moved to the rank of particular method, it is not required from them. (The task of presenting a complete classified list of all mentioned here methods of fixing the truth, was not set as yet.)

It should be emphasized that from the position of the offered concept, it is incorrect to accept the correspondence theory as method of forming true propositions. This theory is rather to be regarded as aberration, though relevant to common sense. Earlier I tried to show that so obvious to ordinary common sense correspondence between the uttered and the seen is only a result of complex historical coordination between linguistic and other practices, the consequence of unified upbringing and education.

It remains to mention as well the so-called "deflationary theory of truth", which states that the notion "truth" is altogether needless. This conclusion it substantiates by such examples as following: the statement 'It's true that snow is white' adds nothing to the meaning of proposition 'Snow is white.' First, deflationary theory says nothing about the nature of truth, it does not answer the question: why proposition 'Snow is white' is true? Therefore, it cannot be classified as theory or method of determining the truth. Second, within the scope of many-worlds theory the content of deflationary theory boils down to banal point: if proposition is recognized as true because of the fact of its belonging to one or another logical world, then within there is no need to repeat each time that

it is true. For example, when proving theorem it is not necessary each time to point out the truth of axioms. However, if we consider the belonging of some proposition to different logical worlds, then we necessarily must say, in which of them it is true and in which it is false. Thus, the Euclidean axiom about parallel lines is certainly false in the logical world of Lobachevskian geometry. And in such cases we cannot do without predicates 'true' and 'false.'

Instead of summing up, I'll give some recommendations to those who have amassed objections to the described here many-worlds theory of truth or to some of its basic assumptions. If you want to disprove the relativity of this theory, you must show that for any proposition there is only one truth value (for example, that the proposition 'The President told the truth' is always true). If you do not agree with the thesis that truth of proposition can be established only and exclusively by comparing it with other propositions, then offer a mechanism of comparing a proposition (a sequence of words) with, let us say, rain or snow. Or there is another option: specify, please, to what actual state of things, to what reality correspond true ethical, religious, political propositions. Those who are against the introduction of the concept "logical world" must convince everyone (and, more importantly, themselves) in the existence of universal rules of fixation and generation of true propositions – one and the same for all possible cases (all worlds).

References

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Notes

1. The notion "truth" in this text I associate only with affirmative propositions – the problem of truth of other types is not considered here. Also, for the present without analysis the problem of correlation between sentences and propositions will remain – it is assumed that in any case the proposition is a sentence in a more abstract language than the ordinary one. It should be noted also that for understanding of this text it is not essential, whether the truth is treated as a predicate of proposition or as its value. Though within the scope of the offered concept it is more appropriate to speak about predicativity of the truth – the assertion of truth of proposition states it belonging to some set of propositions.

2. The concept “logical world” can be correlated with the known in logic concept “possible world” only very remotely – and only with “possible word” in its latest interpretations as some context, the situation in which asserting proposition’s truth is possible, but not in its original meaning of conceivable world as opposed to actual. Logical worlds as sets of true propositions are not hypothetical, but they are ontological, we can even say real, if reality is understood as something similarly manifested in personal realities of some set of individual subjects.