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### THE THIRD REALM AND THE FAILURE OF ITS NATURALIZATION IN KARL POPPER'S CONCEPTION OF WORLD 3

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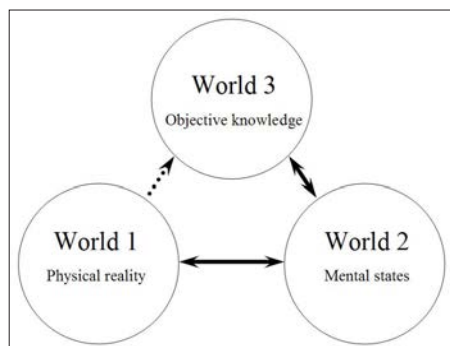
The article discusses Karl Popper's conception of World 3 as the realm of objective knowledge. The main target is problems of reconciling the thesis that World 3 is autonomous (irreducible) with respect to the physical (World 1) and the mental (World 2) and the thesis that World 3 is a product of human thought. With respect to the problem of the "over crowdedness" of World 3, formulated by L. Cohen, it is suggested that the solution can be looked for in some kind of non-classical (probably, relevance) logic; however, the details are still waiting for elaboration. It is argued that the cultural relativity of knowledge and the non-existence of the demarcation line between the private (mental) and the public modes of existence of an idea constitute graver – and probably insolvable – problems for Popper's conception. In particular, because there is no plausible way to draw the demarcation, one should consider World 3 either as ontologically derived from a combination of the mental and the physical (the multitude of Worlds 2 in their communication supported and mediated by material information carriers, which belong to World 1 or as a temporal and containing all possible contents of human thought. It is also pointed out that Popper's attempt at the "biologization" of World 3 and his motto "all life is problem-solving" sit badly with his claims that problems belong to World 3 and that the existence of World 3 is inseparable from the higher functions of human language. The general outcome is that the reconciliation of the view that World 3 is an ontologically irreducible realm with the view that it is human-made is hardly possible. If the irreducibility is admitted, World 3 should be thought of in a more Platonean – or Fregean – way than Popper did admit.

*Key words:* World 3, objective knowledge, physical, mental, autonomy, biological evolution, descriptive function of language.

The conception of World 3 is an important part, and one of the most controversial parts, of Karl Popper's epistemology and ontology. Popper argued that the whole reality contains three qualitatively incommensurable and mutually irreducible but interacting realms, or "worlds" – World 1 of physical entities, states and processes, World 2 of mental states, and World 3 of objective knowledge (see Picture 1). With respect to the latter, Popper argued that the contents of our theories (he was most interested in scientific theories, but his argument goes for all descriptive statements formulated in language and so made public) belong neither to the physical (material) world, World 1, nor to the realm of mental states, World 2.<sup>1</sup> (Popper talked of World 2 in singular; I will more often talk in plural, because there are as many Worlds 2 as there are persons, or mental subjects.) World 3, as the realm of objective contents (of scientific theories, for example) and log-

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<sup>1</sup> In fact, Popper did include in World 3 not only scientific theories and other descriptive statements but also pieces of music, painting, etc.; however, he focused on scientific theories. In part, it is explainable by his dominant interest in science, but I conjecture that there is another reason too – it is that scientific theories are probably the most tractable part of World 3. In this paper, I also focus only on problems concerned with the contents of descriptive and argumentative statements (primarily, scientific theories and arguments).



**Fig. 1. Popper's conception of three worlds**

ical relationships, is distinct both from the physical realm and from personal mental “worlds”.

Popper was not the first who argued for the autonomy and irreducibility of such a third (neither physical nor mental) realm: he pointed out that his conception had as its predecessors “Bolzano’s theory of a universe of propositions in themselves and of truths in themselves” and “the universe of Frege’s objective contents of thought”; and, of course, the pedigree goes as far as “Plato’s theory of Forms or Ideas” [1, p. 106]. However, there is an important difference between these earlier conceptions and that of Popper: Popper tried to make his conception less mystical by admitting that World 3, although autonomous and irreducible, is

a product of World 2 (of human mental states) and by attempting to assimilate it into the general picture of Darwinian biological evolution. This gives rise to a number of problems.

In this article, I recapitulate Popper’s arguments for the autonomy and irreducibility of World 3 and argue that Popper’s attempt to “naturalize” the “third realm” is unsuccessful because it runs into a number of problems, some of which are likely to be irresolvable. The outcome is that if we agree with Popper’s argument for the irreducibility of World 3, then we should think of it in a more “Platonean” – or Fregean – way.

### **1. Why we should admit that there is the autonomous and irreducible World 3 or something near enough**

It seems natural to hold that knowledge belongs to minds, is a matter of mental states and processes. However, Popper denied this and argued that there is *objective knowledge* (which includes scientific theories) that, although it is *human-made*, should be considered as an autonomous realm (World 3) that is *irreducible* both to the physical (World 1) and to the mental (World 2): “One may say that World 3 is man-made only in its origin, and that once theories exist, they begin to have a life of their own: they produce previously invisible consequences, they produce new problems” [2, p. 40].

Popper’s reason for the claim that World 3 of objective knowledge is irreducible to mental states and processes is that our concepts and theories, although human-made, have *objective* contents and stand in objective logical relations with other World 3 objects, so that we may be (subjectively) unaware of these contents and relations. In particular:

(1) World-3 statements have objective truth-values that are independent of our subjective knowledge; the truth/falsity of a statement does not depend on our opinions and judgments; a statement can be objectively true, although we think that it is false, and vice versa;

(2) There are objective logical relations between statements, although we may be unaware of them.

Popper’s favorite illustrations for (2) were from mathematics: “A number system may be said to be the construction or invention of men rather than their discovery. But the difference between even and odd numbers, or divisible and prime numbers, is a discovery: these characteristic sets of numbers are there, objectively, once the number system exists, as the (unintended) consequences of constructing the system; and their properties may be discovered. <...> The situation with respect to every scientific theory is similar. It has, objectively, a huge set of important consequences, whether or not these have as yet been discovered. <...> Examples are Euclid’s problem whether there is a greatest prime; the corresponding problem for twin primes; whether Goldbach’s conjecture that every even number greater than 2 is the sum of two primes is true;

the 3-body problem (and n-body problem) of Newtonian dynamics; and many others. <...> These considerations <...> establish the objectivity of World 3, and its (partial) autonomy. <...> the objective and unembodied existence of these problems precedes their conscious discovery in the same way as the existence of Mount Everest preceded its discovery; and it is important that the consciousness of the existence of these problems leads to the suspicion that there may exist, objectively, a way to their solution, and to the conscious search for this way: the search cannot be understood without understanding the objective existence (or perhaps non-existence) of as yet undiscovered and unembodied methods and solutions” [2, p. 40–42].

Generally, mathematicians “think in terms of discovered, and thus pre-existent, and also of undiscovered problems and solutions – of problems and solutions yet to be found” [2, p. 42].

Similar considerations underlie Frege’s conception of “third realm”. Frege’s third realm is autonomous and ahistorical (atemporal); it includes all *possible* contents of thought<sup>2</sup>. Unlike this, Popper’s World 3 is claimed to be human-made: although World 3 is irreducible to World 1 and World 2, it is nevertheless a product of human minds, of the invention of new concepts, ideas, theories, etc. that happen at particular times (the historization of World 2); and these minds with their idea-generating capacities are products of the biological evolution (the naturalization of World 3). *Prima facie*, this makes World 3 less «metaphysical» and mysterious; however, the coherence of such a view is very problematic. It seems that there is, at least, a tension between the claim (C1) that World 3 is autonomous, irreducible to other two «worlds», physical and mental, and the claim (C2) that World 3 is a product of human thought that develops historically. Moreover, there are plausible arguments to the point that (C1) and (C2) cannot be reconciled.

## 2. The overcrowdedness problem

Against Popper’s conception of World 3, L. Jonathan Cohen [5, p. 175–180] raised an objection that can be designated as “the overcrowdedness problem”. The problem arises because according to Popper:

(1) World 3 contains both true and false statements (scientific theories, etc.);

(2) World 3 contains not only all statements (scientific theories etc.) that were formulated and made public (let us designate the set of such statements as  $W3_1$ ) but also all statements that logically follow from  $W3_1$  (let us designate the set of such statements as  $W3_2$ ).

However, the set of all statements that were formulated and made public,  $W3_1$ , contains contradictions, and from a contradiction, *anything* (the truth, as well as the falsity, of any statement) is *deducible* according to the rules of classical logic. Popper himself explained this in the article “What is Dialectic?” [6]. If so, then we have the following valid argument:

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<sup>2</sup> It may be appropriate to compare this with some aspects of the philosophy of “early” Husserl, formulated in his “Logical Investigations” under the influence of discussions with Frege. In this work, Husserl argued that the realm of “ideal”, as necessary and atemporal, is irreducible to “real” – the category that encompasses all that is contingent and temporal (that is, everything mental and everything physical). He did this against psychologism – the view that those items and relations that Husserl designates as “ideal” – in particular, the principles of logics – are reducible to the psychological, mental. Dan Zahavi recapitulates Husserl’s argument as follows: “The very possibility of repeating the same meaning in numerically different acts is in itself a sufficient argument to refute psychologism as a confusion of ideality and reality. If ideality were really reducible to or susceptible to the influence of the temporal, real, and subjective nature of the psychical act, it would be impossible to repeat or share meaning, just as it is impossible to repeat a concrete psychical act the moment it has occurred, not to speak of sharing it with others. (We can of course perform a similar act, but similarity is not identity.) But if this really were the case, scientific knowledge as well as ordinary communication and understanding would be impossible (Hua 18/194). <...> To attempt a naturalistic and empiristic reduction of ideality to reality is to undermine the very possibility of any theory, including psychologism itself” [3, p. 10].

It is interesting to compare this with Popper’s claim that “the philosophies which try to rescue the causal completeness or self-sufficiency of the physical world, such as epiphenomenalism, psycho-physical parallelism, the two-language solutions, physicalism, and materialism <...> are self-defeating in so far as their arguments establish – unintentionally, of course – the non-existence of arguments” [4, p. 104].

(P1)  $W3_2$  contains all statements (including those that were not yet formulated and make public) that logically follow (are deducible) from  $W3_1$ ;

(P2)  $W3_1$  contains contradictions;

(P3) From a contradiction, any statement logically follows (is deducible).

Hence:

(C1) From  $W3_1$ , any statement logically follows (is deducible).

Hence:

(C2) Any statement, including all those that were not yet formulated and make public, belongs to  $W3_2$  and, hence, to World 3.

That is, World 3 contains all possible statements, no matter true or false and no matter whether anyone had ever formulated it or had any thought of it! This logically follows from the premises that Popper himself accepted.

Perhaps, the overcrowdedness problem can be solved by means of some kind of non-classical logic with the rules of deduction that prevent the “everything follows” result. Some relevance logic seems likely to be a good candidate, because the overcrowdedness problem can be seen as due to the fact that in classical logic, from a set of statements that contains a contradiction, we can derive the truth, as well as the falsity, even of those statements that are – by their meaning – entirely irrelevant to the initial (contradictory) premises: given statements A and non-A as the premises, one can deduce the truth of any statement B, even if the meaning of B has nothing to do with the meaning of A. (For example, the statement that moles can fly is deducible from the pair of premises “Socrates is a man” and “Socrates is not a man”). However, the details of such a solution – the choice of a particular logic, provision of tenable reasons for this choice, the demonstration that it solves the problem – are still to be elaborated.

### 3. The problems of cultural relativity of public knowledge and the absence of a borderline between private and public

There are other problems for Popper’s conception of World 3, which are likely to be irresolvable. One of them was also pointed out by Cohen. The problem is due to cultural relativity of what is publicly known (objective knowledge): an idea or theory can be well known to people of one culture and not known at all to people of another culture. As an extreme case, Cohen proposes to think of the possibility of the existence of some extraterrestrial civilization of intelligent beings. Is World 3 one for us and for them? Or there are two distinct Worlds 3 – the human World 3 and the extraterrestrials’ World 3 [5, p. 176–177]?

I think that the untenability of Popper’s conception of World 3 (as both a product of human mind and autonomous, irreducible to all there is mental and physical) can be made even more clear by pointing out that there is no borderline between the “private” existence of an idea, in human minds (Worlds 2) and the “public” existence of an idea qua an item of World 3. The “privateness” and “publicity” of ideas is a matter of degree, more-less, rather than an absolute matter, either-or. Instead of the division into white and black, there is a spectrum in which white turns into black through lighter and darker shades of grey.

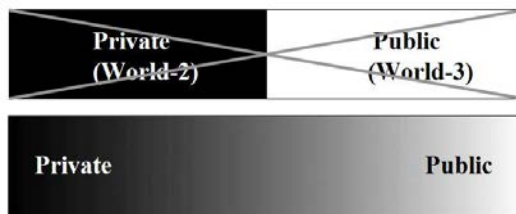


Fig. 2. The relationship between the private and public existence of ideas

To see this, consider the following spectrum of situations:

(1) An idea A has occurred to a person X, but X has not communicated it to anybody, and has not fixed it in writing or otherwise;

(2) An idea A has occurred to a person X, and X had communicated it to a person Y; both have completely forgotten A soon afterwards; there was no more communication of A, and it was not fixed in writing or otherwise;

(3) An idea A has occurred to a person X, and X has written it in a copybook, but nobody has ever read it;

(4) An idea A has occurred to a person X, and X has written it in a copybook, and it was read by a person Y; both X and Y had forgotten it soon afterwards, and there was no further communication of A;

(5) An idea A has occurred to a person X, and X has published a book about it, and presented the book to several people; however, nobody has ever read it, and it got no further communication;

(6) An idea A has occurred to a person X, and X has published a book about it, and presented the book to several people; two persons had read it, but it got no further communication;

(7) Some time ago, there was an isolated tribe whose members had an idea A, but now A is completely forgotten, and there is no written (or otherwise fixed) expression of it.

The list can be continued, but I hope that is enough to make my point clear. Consider the following questions. When A belongs to World 3, and when it does not? What is the principled difference? Do all the ideas that had ever occurred to anyone belong to World 3? Or only those that were fixed in writing? If only written ideas belong to World 3, then whether all written ideas belong to it, even if they were never read (and the books that contained them are already ruined)? There cannot be any objective delimitation, because there is no principled, qualitative difference between the cases described that would be relevant to our problem; there are only differences of degree: some ideas were not shared, some were shared between only two, or three, or four, etc. persons.

However, if there is no objective delimitation, there is no objective World 3. The ideas that belong to objective World 3 must belong there objectively. There must be objective conditions of belonging to World 3, an objective qualitative difference between those ideas that belong to World 3 and those that belong only to a personal World 2 (or to several personal Worlds 2).

It seems that the only logically tenable solution is to say that the idea A belongs to World 3 in all the cases in the list. In fact, this seems to be implied by Popper's statement that "there are no thought processes without thought contents, and thought contents belong to World 3" [7, p. 114]. If so, we should say that World 3 contains all the ideas that were ever thought of by any person, including all those ideas that just emerged in someone's mind for a moment and were never communicated. But then it seems untenable and *ad hoc* to hold that a mere emergence of an idea in someone's mind (World 2), even just for a moment, make the same idea emerge as a piece of World 3 of objective knowledge and remain there forever. Rather, if we need an autonomous non-mental realm of ideas and logical relations (that is, if we are convinced by arguments of Frege, Husserl, Popper, and others that psychologism is false), we should hold that its contents and relations are atemporal, do not emerge at any moment at all but are always there. The realm should include all possible contents of human thought, all thinkable ideas, whether they were thought of by someone as yet or not. It is much more like Plato's world of ideas than Popper was willing to admit, and it fits Frege's conception of the third realm.

We can think of this realm as a kind of (non-physical) semantic space that has its structure and intrinsic relations, which are objective, – such that we (human minds) can discover them by our thought, "in the same sense in which an existing but so far unknown plant or animal may



be discovered" [2, p. 40]. Thinking a new idea is a discovery by a human mind of an earlier unknown object in this realm; communicating ideas is like showing such objects to other minds; books are sorts of maps that help a reader to find (rediscover) these ideal objects.

#### 4. Is All Life a Genuine Problem-Solving?

Usually, Popper wrote about World 3 as a specifically human phenomenon that is impossible without a developed language that performs the higher – descriptive and argumentative – functions.<sup>3</sup> Other animals do not have such a developed language; so, it has to be concluded that there is no genuine World 3 of other animal's production. On the other hand, Popper often drew an analogy between human World 3 and products of animal activity that serve for animals as "extra-somatic organs" – burrows, dens, bird nests, beaver dams, etc. However, it seems that this is a mere analogy; animal's "extra-somatic organs" can be regarded as in some important respects analogous to World 3, but they are not animal Worlds 3 – they still are parts of World 1 (the physical world). As far as I know (and consistently with his thesis about the necessary connection between World 3 and the higher functions of language), Popper did not ever write that nonhuman animals have World 3.

On the other hand, Popper contended that biological evolution should be understood as a process of problem-solving that follows the same scheme as the development of scientific theories. The scheme is  $P1 \rightarrow TT \rightarrow EE \rightarrow P2 \rightarrow \langle \dots \rangle$ , where P1 is the initial objective problem to be solved, TT is its tentative solution (tentative theory), EE is error-elimination (by criticism in science, by natural selection in the process of biological evolution), and P2 are new problems at the end of the cycle and the beginning of the next cycle. One of Popper's pet slogans was "All life is problem-solving". It seems that in all this, Popper did not talk of problems and problem-solving metaphorically; he did really mean that animals and life solve problems. However, it is hard to see how this view can be consistent with the view of World 3 as a specifically human phenomenon bound up with the higher functions of language. Problems do not belong to the physical world (World 1). All there is to World 1 are causal relationships between its physical constituents. Problems belong to World 3. Plausibly, there is also a subjective aspect to problems, or subjective problems, that belong to World 2. However, when talking about biological evolution as a process of problem-solving, Popper clearly means objective problems, which, on his own account, belong to World 3.

Therefore, either animals or all life are not genuine problem-solvers, and there are no genuine problems for them to solve (at best, there are quasi-problems, and animals and all life are quasi-problem-solvers: there are some complex physical processes that look like – but are not – problem-solving<sup>4</sup>), or there should be genuine Worlds 3 of non-human animals. This, however, would conflict with Popper's claim that World 3 emerges with descriptive language, which is a specifically human phenomenon.

<sup>3</sup> Thus, in *The Self and Its Brain* Popper says that "man has created himself, by the creation of descriptive language and, with it, of World 3" [2, p. 566], and in *Objective Knowledge* he writes that "the third world  $\langle \dots \rangle$  arises together with argumentative language; it is a by-product of language" [1, p. 177]. This view can be traced as far back as the 1953 paper "Language and the Body-Mind Problem" (reprinted in *Conjectures and Refutations*), where Popper, although without mention of World 3, argues that "no causal physical theory of the descriptive and argumentative functions of language is possible" and points out that "logical relationships, such as consistency, do not belong to the physical world", although our minds are capable of grasping such relationships, and this may influence our actions in the physical world [4, p. 107].

<sup>4</sup> An obvious analogy to this possibility is what is often said about Darwin's theory – that it had given non-teleological explanations to processes that seem teleological and, before Darwin, seemed unexplainable non-teleologically. In this sense, natural evolution according to Darwin's theory is a wonderful non-purposeful imitation of purposefulness. Likewise, it may be said that animals' and all life's quasi-problem-solving is in certain respects a wonderful imitation of genuine problem-solving.

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### ТРЕТЯ ЦАРИНА ТА НЕВДАЧА ЇЇ НАТУРАЛІЗАЦІЇ В КОНЦЕПЦІЇ СВІТУ 3 (ТРЕТЬОГО) КАРЛА ПОППЕРА

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У статті обговорюється концепція Світу 3 як царини об'єктивного знання Карла Поппера. Головну увагу приділено проблемам узгодження положення про автономію (нередуковність) Світу 3 щодо фізичного (Світ 1) та психічного (Світ 2) та положенням про те, що Світ 3 є продуктом людського мислення. Щодо проблеми «перенаселеності» Світу 3, що була сформульована Л. Когеном, робиться припущення, що її розв'язання може бути знайдене в некласичній (імовірно, релевантнісній) логіці; проте деталі такого розв'язання ще потребують розроблення. Обґрунтовується думка, що культурна відносність знання та неіснування демаркаційної лінії між приватним (ментальним) та публічним способами існування ідеї становлять для концепції К. Поппера важчі – ймовірно, нерозв'язні – проблеми. Зокрема, оскільки немає правдоподібного способу демаркації, ми мусимо розглядати Світ 3 або як онтологічно похідний від специфічного поєднання ментального та фізичного (множина Світів 2 в їх комунікації, що підтримується й опосередковується матеріальними носіями інформації, що належать до Світу 1), або як позачасовий і такий, що містить усі можливі змісти людської думки. Відзначається також, що спроба К. Поппера «біологізувати» Світ 3 та його гасло «Усе життя є розв'язанням проблем» конфліктують із його тезами, що проблеми належать до Світу 3, і що існування Світу 3 є невіддільним від вищих функцій людської мови (дескриптивної й аргументативної). Загалом, узгодження положення про те, що Світ 3 є онтологічно нередуковною цариною, з положенням про його створеність людьми навряд чи можливе. Якщо визнається нередуковність Світу 3, то він мусить мислитися як значно ближчий до світу ідей Платона, аніж це визнавав К. Поппер.

*Ключові слова:* Світ 3, об'єктивне знання, фізичне, психічне, автономія, біологічна еволюція, дескриптивна функція мови.