LOGIC, METHODOLOGY AND PHILOSOPHY OF SCIENCE

https://doi.org/10.15407/fd2023.02.159
UDC: 167.2

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NATURAL KINDS AND *A POSTERIORI* NECESSITIES: PUTNAM *PRO* KRIPKE, PUTNAM *VERSUS* KRIPKE

Most contemporary analytic philosophers of language and mind accept the view that there is a wide class of terms, "natural kind terms", which includes names of substances (the most common example is "water"), of species of animals, and of many other kinds of things in nature, whose meaning and reference is determined in the way explained by the theory developed in the 1970s by Saul Kripke and Hilary Putnam. The theory is often referred to as "the Kripke-Putnam theory" and is supposed to have such achievements as the overthrow of the earlier dominant Fregean theory of word-meanings (dubbed "descriptivism" by Kripke) as determined by the concepts in our minds, providing support for the "externalist" approach to linguistic meanings (in line with Putnam's claim that ""Meanings" just ain't in the head"), and the discovery that there is a wide class of truths (such as that water is H20) that are both a posteriori and necessary. Although the priority in the development of this theory belongs to Kripke, it could hardly gain such a wide acceptance without contributions by Putnam, which turned out to be very influential. However, the habitual idea of "the Kripke-Putnam theory", as one theory, tends to play down the differences between Putnam's and Kripke's approaches and to hush up the fact that in his late works, of 1983 and 1990, Putnam revised and abandoned pretty much of his "Kripkean" views of 1970-ies; in particular, repudiated the pride of Kripke's theory, the idea of necessary a posteriori truths. This article makes critical analysis and evaluation of Putnam's ideas and arguments usually credited as important contributions to "the Kripke-Putnam theory", and highlights the main points of the revision in late Putnam's works. The case is made that Putnam's famous argument for externalism about meanings, the Twin-Earth thought experiment, is question-begging, fails to do justice to likely changes in the meanings of words with the development of knowledge, and conflicts with the linguistic practice in the relevantly similar case of "jade". Putnam's argument for externalism from the division of linguistic labour is not cogent too, because "semantic deference" is itself a matter of what is there in "heads" - of some (non-expert) heads deferring to other (recognised as expert) heads. Eventually, on close inspection and in the light of Putnam's later reexplanation and revision, his account of meaning and reference turns out to be a sophisticated variety of conceptualism/internalism.

Keywords: *meaning, conceptualism, descriptivism, internalism, externalism, natural kind, a posteriori necessary truth.*

Citation: Sepetyi, D. (2023). Natural kinds and *a posteriori* necessities: Putnam *pro* Kripke, Putnam *versus* Kripke. *Philosophical Thought*, 2, 159—171. https://doi.org/10.15407/fd2023.02.159

Introduction

The fact that our knowledge of the world is mediated by language became the point of departure for one of the two main directions in the philosophy of 20th-21th centuries - analytical philosophy. Analytical philosophers, especially at the heyday of "the linguistic turn" in the 1950s-70s, put language at the centre of their deliberation, in the expectation that the adequate grasp of the way language works holds the key to most, if not all, important philosophical problems. Although later analytic philosophy lost much of this language-centeredness and to a considerable degree returned to more traditional philosophical issues and ways of philosophising (especially those characteristic of classical empiricism, rationalism, and positivism), philosophy of language is still one of its main branches that informs others. Analytic philosophy of language is concerned primarily with explaining how language gets its hold on the world - the issues about meaning and reference. This goes back to the work of the earliest philosopher who is usually considered one of the founders of the analytic tradition, Gottlob Frege, "On Sense and Reference" (Frege, 1892; 1952). The contemporary dominant view on these matters is based on the ideas advanced and defended by Saul Kripke in the work "Naming and Necessity" (1972), which gained much of their impact due to the influential support and development provided by Hilary Putnam in the articles "Meaning and Reference" (1973) and "The Meaning of "Meaning"" (1975). These philosophers were two most important figures in sort of revolution in the analytic philosophy of language - dethronement of the formerly commonly accepted *descriptivist (conceptualist) and internalist* theory of linguistic meaning (supported and explicated by such philosophers as John Stuart Mill, Gottlob Frege, and Bernard Russell) and rise to dominance of the *historical-causal* and *externalist* theory. This dominance did not, and does not, go unchallenged. Although the Kripkean view became (and still remains) sort of orthodoxy in the analytic philosophy, there are many criticisms of it, and "counter-revolutionary" attempts to develop and defend new varieties of descriptivism (conceptualism) / internalism, as well as sort of hybrid theory, two-dimensional semantics, that accommodates some main "Kripkean intuitions" within basically Fregean (descriptivist / internalist) framework. One interesting turn in these developments was later reexplanation and revision of his position by Hilary Putnam (Putnam, 1983; 1990), which dissociates it from the Kripkean view and casts doubts on its supposedly principal differences with descriptivism (conceptualism) / internalism. Regrettably, this turn - unpleasant for the Kripkean orthodoxy - is usually passed over in silence in the standard accounts of the development of analytic philosophy of language, and Kripke and Putnam are still considered as proponents of basically the same approach, with some not-very-significant variations.

This article discusses the place of Hilary Putnam's ideas in the "Kripkean revolution", especially his claim that "meanings" are not in the head (Putnam, 1975: p. 144), the cogency of his argument for this claim, and the later (Putnam, 1983; and especially Putnam, 1990) reexplanation and revision of Putnam's position.[1]

[1] For another illuminative discussion of this topic see (Hacking, 2007b).

1. Kripke's new perspective on meaning

How is it determined what a word means, or what it refers to? It seems that we have some idea, or concept, associated with the word, which is its meaning, or sense, and the word refers to a thing or things that satisfy this idea/concept. If our idea/concept of a cat is that of a small pussy animal of some typical appearance, then "cat" means just such animals, and refers to such animals. On this account, the meaning of a word is in our "heads", or minds, and we can express it in language in the form of description ("A cat is such-and-such an animal"). This is, in a nutshell, the traditional account which was shared by such pre-Kripkean philosophers and logicians as John Stuart Mill, Gottlob Frege, and Bernard Russell. Saul Kripke dubbed it "descriptivism". I suggest that "conceptualism" would be a more appropriate name.

There was an important digression from descriptivism/conceptualism with respect to proper names: John Stuart Mill held that proper names, unlike common names, have no connotation (≈"sense" in Frege's terms, that is, the qualitative idea, expressible in the form of description, that determines reference) - they refer not in virtue of their connotation (sense) but in virtue of the history of its application: a proper name used by a person *P* at a time *t* in a statement or thought *S* refers to a person or thing whose "baptising" with this name originated the historical chain of communication and use of this name that leads to its use by *P* at *t* in *S*. That is, Mill held a descriptivist account of reference (and meaning) for common names, and a causal-historical account of reference for proper names.

Kripke advanced a theory that this is the case not only with proper names but also with many common names. Kripke's theory of reference implies a kind of metaphysics - essentialist metaphysics characteristic of Plato and Aristotle that was criticised by later science-oriented philosophers, such as John Locke and John Stuart Mill, and was long considered as outdated - the idea that in the world, there is a natural division of things into kinds according to their essential properties, and many common names designate such "natural kinds". Using Plato's metaphor, such natural kind names represent distinctions or classifications that "carve nature at its joints" (Plato, 1892: p. 474). The relationship between such common names and natural kinds is roughly the same as the relationship between proper names and persons or things whose names they are.

An important point of Kripke's theory is that natural kinds are determined by essential properties that usually *are not manifest* but hidden. Discovery of these essences is not a business of philosophical speculation along the lines of Plato and Aristotle - it is a business of scientists. This appeal to science made Kripke's essentialism more palatable, or scientifically respectable, than the outdated essentialism criticised by Locke, Mill, and others.

On Kripke's theory, although the process of classification begins in ordinary language with manifest common properties and similarities, the natural kind to which a thing belongs is not determined by such properties. Superficial properties are only fallible indicators - when people don't yet have knowledge of essential properties, they suppose that superficial similarities usually go together with the same essential

properties. However, when later scientists discover these essential properties, things get reclassified accordingly. For example, although whales and dolphins are manifestly pretty much like fish (much more than like other mammals), and were earlier believed to be fish, they are not fish but mammals because their deep essential properties are those of mammals rather than fish. It is important that on Kripke's view this is not a matter of change in the meaning of the word "fish". This is one of the main differences between Kripke and "descriptivists". A descriptivist would probably explain the fact that in older time people classified whales as fish and now they are not so classified by the change in the meaning of "fish": earlier, people meant by "fish" water-living creatures sharing certain manifest features, and now they defer to scientific meaning that involves other properties. On Kripke's view, this is wrong; the meaning of "fish" did not change - it always meant and means, roughly, *things of the same natural kind as most of those to which the word "fish" was historically applied*.

Hence another aspect of Kripke's theory that is usually considered as an important, revolutionary discovery - the claim that there are truths that are both *metaphysically necessary* and *a posteriori*. It is appropriate to clarify what is at issue here.

The notions of metaphysical necessity and metaphysical possibility has to do with the idea of possibility in the widest sense - what is, and what is not, ruled out in principle, no matter how things stand in the real world. The notion is often identified with the idea of possible worlds. (This idea was first introduced by Leibnitz, and it takes an important place in the contemporary analytic philosophy.) Imagine an omnipotent God; suppose, he has created our world; presumably, he could create a world that differs from the one he has in fact created; there should be an infinite multitude of worlds such a God could create, that is, possible worlds. The actual world is one of the infinite multitude of possible worlds. Metaphysical possibility is what is the case in some possible worlds (at least in one), and metaphysical necessity is what holds in all possible worlds. Metaphysical necessity that something is the case is the same as metaphysical impossibility that this is not the case (X is necessary ≡ not X is impossible); if something is metaphysically necessary, there is no possible world in which it is not the case; even an omnipotent God cannot create such a world. Theological parlance aside, metaphysical possibility has to do with how things in the world could have been, if the world was different from how it really is, however large the difference. The world could have an entirely different constitution, laws of nature, etc. Possibility/necessity in this sense should be distinguished from another pair of possibility/necessity notions - natural, or nomic, or physical possibility/necessity: a thing is naturally possible/necessary if it is possible/necessary given the same laws of nature as in the actual world. (Something is naturally possible if it holds in some of the subset of possible worlds that have the same laws of nature as the actual world; something is naturally necessary if it holds in all worlds from this subset of possible worlds, that is, if there is no possible world with the same laws of nature in which this does not hold.)

Given such notions, the range of metaphysical possibilities is very wide - immensely wider than the range of natural possibilities. What limits that range, so that

something can be metaphysically impossible or metaphysically necessary? What can make it the case that even an omnipotent God cannot create such a world in which X holds? The basic idea behind the notions of metaphysical impossibility and metaphysical necessity is that even an omnipotent God cannot make it the case that, for example, 2+2=5, or that someone is both a married man and a bachelor. That is, even an omnipotent God cannot make it the case that something conceptually incoherent takes place. God's omnipotence is limited with what is possible in principle, and this principal possibility is a matter of coherence. *Prima facie*, this seems to be the only limitation: an omnipotent God could create any kind of world which description is not incoherent. If so, then metaphysical necessity can be established analytically, by conceptual analysis, *a priori*, that is, without empirical research (experiments and observations). Indeed, empirical research is irrelevant, because it has to do with *what is the case in the actual world*, whereas metaphysical necessity is about *what is the case in all possible worlds* (in other words, empirical research is concerned with what is, whereas metaphysical necessity is concerned with what could, and what couldn't, have been, even if the world was entirely different from how it is in fact). Because of this, all pre-Kripkean philosophers who discussed these matters believed that all *necessary* truths are analytic, *a priori* truths.

Kripke challenged this view and argued, proceeding from his theory of natural kinds and their common names, that there are necessary *a posteriori* truths. As examples of such truth, he proposed "Water is H_20", "Heat is the average kinetic energy", etc. No doubt, these truths are *a posteriori* - they were established as a result of empirical research and could not be established *a priori*, by means of conceptual analysis. But why are they necessary rather than contingent? Why couldn't there be a world in which water was composed not of H_20 molecules, or a world in which heat was not the average kinetic energy?

From the point of view of the descriptivist theory of meaning, such worlds are possible: there is nothing to rule out the world with some different constitution and laws of nature, in which there were creatures like ourselves in all important manifest respects and a drinkable liquid just like water in all important manifest respects; this idea is not incoherent (if it were incoherent, it would be in principle possible to establish that water is H_20 *a priori*, without any empirical research, which is in fact impossible). However, Kripke argues that this reasoning is mistaken because "water" does not mean a drinkable liquid just like water in all important manifest respects - it means *something of the same natural kind* as the largest part of that liquid to which the world "water" was historically applied in the actual world, and the essential properties that determine the membership of this natural kind are exactly *being composed of H_20 molecules*. So even if there were a liquid just like water in all important manifest respects (perhaps on some other planet) but that is not composed of H_20 molecules, it would be incorrect to call it "water", and if we talk about some possible world where there is such a liquid, we should not call it "water".

Although Kripke's theory, supplemented with some Putnam's ideas taken as its development, soon became dominant in the analytic philosophy, its criticisms

were not lacking (for some of these, see Dummett, 1973: pp. 110-151; Zemach, 1976; Mellor, 1977; Ayer, 1983: pp. 265-270; Dupr , 1981; 1993; Rosenberg, 1994; Stroll, 2000: pp. 232-242; Hacking, 2007a; Sepetyi, 2020; 2022). In particular, it is arguable that Kripke's examples of necessary *a posteriori* truths involve switch of meanings, or "semantic twist" (Chalmers, 1996: p. 38) - using so called "natural kind terms" (such as "water") in one meaning (primary intension) when talking about the actual world (real states of affairs), and in another meaning (secondary intension) when talking about counterfactual possibilities (possible worlds). Insofar as we keep to the same meaning (intension), Kripke's so called necessary *a posteriori* truths turn out to be either not necessary or not *a posteriori*. So, the truth "Water is H_2O" is *contingent* and *a posteriori* as matters of empirical discoveries about *the actual world*, insofar as we use "water" in the meaning "the drinkable transparent liquid in our surrounding that fills rivers, seas, etc., tastes and smells in a certain familiar ways, etc."; and it is *a priory* and *necessary* as matters of descriptions of counterfactual situations, or possible worlds, insofar as we use "water" in the meaning "the stuff composed of H_20 molecules"[2] (if we do accept such a convention, which we are not obliged to).

In the rest of this article, we will be concerned with Putnam's contribution to "the Kripkean revolution", and its relationship with Kripke's essentialism on the one hand and descriptivism on the other.

2. Putnam's externalism and its criticisms: putting meanings back into the head

Two Putnam's 1970-ies articles (Putnam, 1973; 1975) influentially supported "Kripkean intuitions" and used them for advancing another revolutionary claim, put in the slogan ""Meanings" just ain't in the head". Of course, they are not, trivially. There are brains, neurons, etc. in the head but no such things as meanings. However, this trivial point is not what Putnam means; in fact, in his slogan, "head" stands for "mind". Putnam challenges the common view that meanings are primarily in minds (and in speech and texts insofar as they are interpretable by intelligent minds). In philosophy, this common view is called "internalism" (because it holds that meanings are internal to minds). Putnam is usually considered as one of the founders, and probably the most influential one, of the opposite view, called "externalism" - the view that meanings are extrinsic to minds, are determined by extra-mental states of affairs in the world.

So Putnam claims that meanings are not in minds; it is not our mental states that determine meanings. What is it, then? Where meanings are, if not "in the head"? And how Putnam finds this out? Let us begin with the last of these questions?

[2] Cf.: "According to the two-dimensional analysis, ordinary Kripkean necessities such as "water is H_20" and "Hesperus is Phosphorus" have a necessary secondary intension but a contingent primary intension. That is, such statements are 2-necessary but 1-contingent..." (Chalmers, 2010b: p. 167).

Following Kripke, Putnam claims that water is necessarily H_20; any stuff that is not H_20 is not water. Even if it is liquid and transparent, and tastes and smells just like water, and is just as good for drinking purposes, and flows in rivers and fills oceans, it is not water nonetheless. Unfortunately, there seems to be no chance to find such a watery stuff that is not H_20 on Earth (we know pretty much about its rivers and oceans to hope for that), and we don't know about any such stuff's existence in the Universe (in fact, a short reflection is enough to see that there cannot be such a stuff, as far as *our* drinking purposes are concerned), but Putnam invites us to imagine that it does exist on some remote planet, Twin-Earth.

Twin-Earth is inhabited by humanlike creatures that are just like ourselves and talk in the language that is just like our English. There are rivers and oceans filled with a transparent liquid stuff that tastes and smells just like water and is just as good for drinking purposes. Twin-Eartheans drink that stuff and use it in all other ways we use water, and call it, in their Twin-English language, "water". The only difference between Earth and Twin-Earth is that our watery drinkable stuff is H_20 whereas their watery drinkable stuff is XYZ.

From this Putnam proceeds as follows.

First, he asks: Whether that stuff is water? Note that this question is not really about that stuff, or about water, but about the applicability of the word "water". Does that stuff qualify as "water", in English (not Twin-English!) language? Should we call it "water"? Or rather: would we call it "water" (on the supposition that we are competent users of English)? Putnam (like Kripke) assumes that the right answer is negative: because (as Earth scientists have established) water is H_20, any stuff that is not H_20 is not water.

Second, he notes that the mental states "in the heads" of Twin-Eartheans relevant to their use of the word "water" (in Twin-English) can be exactly the same as the mental states "in the heads" of Eartheans relevant to their use of the word "water" (in English). Perhaps this is spoiled by the discovery (on Earth) that water is H_20, but think of Earth and Twin-Earth before any such discovery: for Twin-Eartheans, everything involving their watery stuff was exactly like for Eartheans, everything involving water. However, Putnam claims, because (as we have supposedly established in the preceding paragraph) their watery stuff is not water, it follows that despite there being no relevant differences "in the heads", their (Twin-English) word "water" means a different stuff than our (English) word "water". So, the meaning of the word "water" is not determined by what is there "in the head" - it is determined by some facts about the world outside "the head", such as that on Earth, the drinkable liquid transparent stuff in rivers is H_20 rather than XYZ.

Now, let us consider this argument minutely.

First, is Putnam right that in the imagined situation, we would not call Twin-Earthean watery stuff "water"? The answer is not so clear and straightforward as Putnam suggests. And even if we wouldn't, the important question is: why?

To begin with, let us note that if our meaning of "water" is in terms of such familiar qualities as *liquid, transparent*, etc., then certainly an important part of this

meaning is something like *fitting for drinking purposes*. And that quality is relative to a drinker. Now the important question is: whether the Twin-Earthean watery stuff fits *our* drinking purposes, those *of human beings* (whose organism, we know, requires H_20 rather than XYZ) rather than twin-human beings? If it does not, then we would not call that stuff "water", because it does not satisfy the meaning of "water" in our "heads" (taking into account that it involves indexicality). And to find this out, we don't need to know anything about H_20 and XYZ, all we need is just try drinking the Twin-Earthean watery stuff.

Now for Putnam's argument to have any chance to succeed, we should imagine that somehow (contrary to what we know), our organism is such that for it, XYZ is just as good as H_20. If that were the case, would we call the XYZ watery stuff "water"? (Or perhaps we should conceive of a possible world with two planets, like Earth with H_20 and Twin-Earth with XYZ, inhabited by human-like creatures whose organisms are such that for *their* needs XYZ is perfectly interchangeable with H_20, and then ask: would the inhabitants of Earth-counterpart call the watery stuff of Twin-Earth-counterpart "water"?)

Putnam claims that the answer is negative; however he (as well as Kripke) gives no non-question-begging argument for this claim. Intuitively it is far from obvious. If the Twin-Earth watery stuff is, in all familiar superficial respects (transparent, liquid, etc.) and for all *our* ordinary purposes (such as drinking), is just like water, why not call it "water"? (Or, rather, if the Twin-Earth watery stuff is, in all familiar superficial respects and for all ordinary purposes *of our counterparts in that possible world*, is just like water, why shouldn't *they* call it "water"?) Why not say that there are two chemical kinds of water: one made of H_20 and another of XYZ molecules? The obvious analogy is the case of jade, well described by Putnam himself: "Although the Chinese do not recognize a difference, the term "jade" applies to two minerals: jadeite and nephrite. Chemically, there is a marked difference. Jadeite is a combination of sodium and aluminium. Nephrite is made of calcium, magnesium, and iron. These two quite different microstructures produce the same unique textural qualities!" (Putnam, 1975: p. 241). If that is the case with "jade", what is so different about "water"? Surprisingly, Putnam is silent about this.

Even if we (or rather our counterparts in that possible world) would not call the Twin-Earth watery stuff "water", this still does not show that ""meanings" ain't in the head". The crucial question is: why would not we call it so? As far as I see it, the only thing that could prevent us (or our counterparts in the relevant possible world) from calling the Twin-Earth watery stuff "water" is that perhaps, after it was discovered (on Earth) that water consists of H_20 molecules and this knowledge became widely disseminated, this fact got assimilated into the very meaning of our word "water". If the meaning of "water" in our "heads" (or in the "heads" of the experts to whom we defer) involves the property "consists (mostly) of H_20 molecules", then, of course, we would not call the Twin-Earth watery stuff "water".

This indicates a deficiency in the second half of Putnam's argument. Suppose we agree with Putnam that in the imagined situation, if it could and would take

place, we (in English) would not call the Twin-Earthean watery stuff "water". If so, the rest of Putnam's argument does not go through, because it falsely presumes that meanings of words are unchangeable, whatever new knowledge we acquire. In particular, it presumes that the meaning of "water" "in the heads" of contemporary English users, who know that water is H_20 (or defer to scientists who know it), is exactly the same as the meaning of "water" "in the heads" of English users several centuries ago, when nobody knew that water is H_20, and as the meaning of "water" "in the heads" of Twin-English users who do not know that their watery stuff is XYZ. However, the only plausible explanation of why we could be reluctant to call the Twin-Earth watery stuff "water" is exactly that the meaning of the word "water" in English-speaking "heads" has changed after the discovery that water consists of H_20 molecules and wide dissemination of this knowledge (plus the deference of wider public to scientists), by assimilating the predicate "consists (mostly) of H_20 molecules".

Putnam considered an objection of this kind and responded that "the fact that an English speaker in 1750 might have called XYZ "water", while he or his successors would not have called XYZ water in 1800 or 1850 does not mean that the "meaning" of "water" changed for the average speaker in the interval" (Putnam, 1975: p. 142). On Putnam's view, such a "reclassification" of XYZ between 1750 and 1850 should be explained according to "the logic of natural-kind terms like "water"" (that is, the Kripkean theory of the meaning of natural kind terms): the meaning of "water" did not change; "water" (now, as well as in 1850 and 1750) means a stuff that "bears a certain sameness relation ... to most of the stuff I and other speakers in my linguistic community have on other occasions called "water"" (Putnam, 1975: pp. 141-142), and that sameness relation, $same_L$, is the sameness of molecular composition rather than familiar superficial properties of water.[3] However, Putnam provides no argument for this claim; he just takes Kripke's theory for granted.

As a result, we can see that Putnam's famous Twin-Earth experiment provides no support for Kripke's theory of the meaning of natural kind terms; instead, it assumes this theory. Putnam's claim that ""meanings" ain't in the head" finds no support either: even if, when using the word "water", we mean "a stuff that bears the relation $same_L$ to most of the stuff that speakers in my linguistic community have on other occasions called "water"", this meaning is still in our minds. On the other hand, if, when using the word "water", we mean something else (as I suppose we really do) - either "the watery stuff in our surrounding" or "the liquid composed of H_20 molecules", then what are the credentials for the Kripke's-Putnam's claim that "water" means not what we usually mean when using the word but what their theory postulates?

There is also another argument Putnam advances for his claim that ""meanings" just ain't in the head" - the argument that we can have, in our "heads", identical concepts for different words with different extensions (sets of things designated by

[3] See also (Putnam, 1990: pp. 59-60) for a rehearsal.

a word) and, so, different "meanings", - for example, if we cannot tell an elm from a beech tree. The difference in the meanings of the words "elm" and "beech" should be accounted with reference to the "linguistic division of labour": most people know and employ only parts of the "meaning" of a word, and there is "a special subclass of speakers", experts, on whom non-experts rely and to whom they defer for a fuller knowledge (Putnam, 1975: pp. 143-146). That is, of course, true; because language is a social institution, the linguistic, or social, or normative meaning of a word cannot be located in the head of a particular person or everyone; rather, it is distributed between many heads, and there are experts to which others can defer. However, this hardly supports externalism about meanings. The linguistic, or social, or normative meaning of a word is still determined by the concepts in our heads associated with this word, private or "internal" meanings, - what we, experts and non-experts, mean when using the word and how we understand what other people mean when they use it. "Semantic deference" is also a matter of what is there in "heads": some (non-expert) "heads" defer to meanings in some other (expert) "heads", or to meanings authorised by experts in dictionaries, encyclopaedias, etc. As D.H. Mellor aptly notes,

> "It need not be my beliefs that fix the reference or extension of terms which I can use quite well in my limited way. So I defer to experts, whose job it is to say what such a term really applies to. The reference or extension in any possible world of the term as we use it may nevertheless still be some Fregean function of our experts' beliefs. ... So no doubt the labour of reference is divided, as Putnam says, but it may be a Fregean labour for all that" (Mellor, 1977: p. 304).

3. Putnam as a conceptualist

Kripke's and Putnam's views on the issues discussed in this paper are usually taken to be nearly the same. However, as Putnam explained in one of his latest articles, "Is Water Necessarily H_2O?" (1990) (in part anticipated by the article "Possibility and necessity" (1983)), this is not really the case. Note that if this identification is a misconstrual, no one was initially to blame but Putnam himself - it is suggested by his most influential "Kripkean" paper, "The Meaning of "Meaning"" (Putnam, 1975). However, criticisms directed against "Kripke's-Putnam's theory" of meaning and reference, - in particular, criticisms advanced by A.J. Ayer in the last sections of his book *Philosophy in the Twentieth Century* (Ayer, 1983: pp. 265-270), - had made Putnam to reexplain and revise his views so as to distance them from Kripke's essentialism. The reexplained and revised Putnam's theory is more tenable than what his 1975 article made it look like. At the same time, it is much less "revolutionary" and exciting; in fact, it turns out to be in line with conceptualism and internalism, although of a peculiar variety. Let us moot several important points of this reexplanation.

First, Putnam admits that terms like "water" can be used in different - rigid and non-rigid - ways. That is, we can use the word "water" non-rigidly, to mean the watery stuff in our (or our epistemic counterparts') surrounding; and if we use it so,

then the truth of the statement "Water is H_20" is contingent (it is possible that water could be not H_20; there are possible worlds in which water is not H_20; in the Twin Earth scenario, Twin Earth's watery stuff, XYZ, is water, as well as Earth's watery stuff, H_20). On the other hand, we can use the word "water" rigidly, to mean the stuff that has the same molecular composition as "(most of) the paradigms[4] in our actual environment" (Putnam, 1990: p. 61), and if we use it so, then, given that the paradigms of water in our actual environment are composed of H_20 molecules, only the stuff that is composed of H_20 molecules qualifies as water, in any counterfactual scenario. And Kripkean metaphysical necessity is nothing but such invariance across counterfactual scenarios.

Second, this necessity is a matter of *our conception* of water or, more generally, of what Putnam calls "substance-identity". Putnam's case is based on the assumption (explicitly stated in (Putnam, 1990: pp. 59-61)) that our conception of the identity for substances (stuffs) is that of the sameness of the molecular composition with that of (most of) the paradigms of the substance in our actual environment. For example, the stuff qualifies as water if and only if its molecular composition is the same as the molecular composition of (most of) the stuff in our environment that we call "water". This belies Putnam's "externalism". Whether the truth of "Water is H_20" is necessary or contingent entirely depends on the meaning of "water" *in our "heads"*: on whether we mean by "water" merely *the watery stuff* or *the stuff with the same molecular composition as most of the paradigms of water in our actual environment*.

Third, Putnam explains that his theory is in fact a theory about how *scientists* use substance terms. His Twin-Earth thought experiment is supposed to reveal *what a scientist would say* in the imagined situation.

In the light of these reexplanations, Putnam's theory is pretty much different from Kripke's and more tenable. Some objections remain, however.

First, why should we think that a scientist would say what Putnam suggests she would? There was no poll among scientists on that point. If the XYZ watery stuff was in all ordinary (non-scientific) respects as good for our purposes (including drinking) as the H_20 watery stuff, would not a scientist prefer to say that there are two kinds of water, H_20-water and XYZ-water? Why is it assumed that a scientist would not treat the word "water" in the same way as the word "jade" is actually treated? Is the case of water in the Twin-Earth scenario principally different from the actual case of jade? Is it not likely, at least, that some scientists would say one (jade-patterned) way and other scientists would say another (Putnam-favoured) way?

Second, even if most scientists would say as Putnam suggests, what does it tell about the meaning of "water" *in ordinary language* (which is a matter of meanings in the heads of and communication between all sorts of people)? Putnam's theory was, and still is, usually taken as a theory of meaning and reference in ordinary language rather than in the parlance of scientists. Now this turns out to be wrong.

[4] Here, "paradigms" of water means those portions of the watery stuff to which the word "water" was applied throughout the human history. Likewise with other stuffs.

And Putnam's remark that "ordinary language and scientific language are interdependent" (Putnam, 1990: p. 69) does not tell much. Neither does his suggestion that a scientist can convince a layman that some transparent liquid drinkable stuff (that in all important ordinary respects, for all important ordinary purposes, is just like water) is not water by telling him that its constituents (the molecules of which it consist) are not the same as the constituents of "normal" water (Putnam, 1990: p. 326). If laymen tend to defer to authorities, and science is an authority in the contemporary world, or if a layman is likely to be convinced by a smooth story (argument) and is not very likely to oppose it with the "instrumentalist" argument like "Well, it tasted like water and ... it didn't poison me, so it *is* water" (Putnam, 1990: p. 326), this does not show that the lay meaning of "water" is like that favoured by Putnam. The lay meaning could be revealed if we had a poll that involve a numerous representative sample of laymen, and the respondents were presented with the clearest and strongest presentations of both Putnam's and "instrumentalist" considerations, and the options were presented as equally supported by scientific authorities. However, there was nothing like such a poll.

All we arrive at, eventually, is that

- some people (those who mean by "water" the watery stuff) would say that in the counterfactual scenarios in which the watery stuff is XYZ, water is XYZ, and that the watery stuff XYZ on Twin-Earth (if it were just as good for all *our* important purposes, including drinking, as the watery stuff H_2O) would qualify as water, and
- some other people (those who mean by "water" the stuff with the same molecular composition as most of the paradigms of water in our actual environment) would say that in the counterfactual scenarios in which the watery stuff is not H_2O, it is not water (the watery stuff XYZ on Twin-Earth would not qualify as water).

Is it that revolutionary discovery that produced so much fuss in the analytic philosophy?

To Putnam's credit, he honestly and consistently revises his former views, and arrives at the radically anti-Kripkean conclusion:

> "... the claim that the statement "Water is H_20" is true in all possible worlds is far too strong" (Putnam, 1983: p. 63).
>
> "Perhaps one could tell a story about a world in which H_20 exists (H still consists of one electron and one proton, for example), but the laws are slightly different in such a way that what is a small difference in the *equations* produces a very large difference in the *behavior* of H_20. Is it clear that we would call a (hypothetical) substance with quite different behavior *water* in these circumstances? I now think that the question, "What is the necessary and sufficient condition for being water *in all possible worlds?*" makes no sense at all. And this means that I now reject "metaphysical necessity"" (Putnam, 1990: pp. 69-70).

If so, we remain with *epistemic* (*conceptual, logical*) necessities and possibilities on the one hand, and *physical* or *natural* possibilities and necessities (what is possible and necessary given the actual laws of nature) on the other. So much for *a posteriori*

necessary truths. There are *no a posteriori* truths that are *epistemically* necessary, and it was well known long before Kripke that *physical* (*natural*) necessities - or the laws of nature that necessitate some things and make some things impossible - are discoverable *a posteriori* (are not discoverable *a priori*). It turns out that

> "... there is no need to make an issue about the "logical possibility" of water not being H_20. If you have a hypothetical situation you want to describe that way, describe it that way - as long as it is clear *what* hypothetical situation you are describing" (Putnam, 1990: p. 70).

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Received 31.01.2023