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ANTI-KRIPKEAN INTUITIONS: CONCEPTUALISM VERSUS ESSENTIALISM

The article discusses Saul Kripke's criticisms of the account of the reference of general names he called "descriptivism" and the considerations he advanced in favour of his own essentialist causal-historical account of the reference of natural kind terms. The alternative of conceptualism versus essentialism about the reference of general terms is explained in details. The case is made that most of the intuitions on which Kripke based his arguments are highly controversial, and the main examples he used to explain and support his views (such as examples of whales and fish, water and H_2O , gold, tigers, and unicorns) do not constitute a clear case for the preference of essentialism over conceptualism. Moreover, these examples can be modified in such ways that in the perspective of these modifications, Kripke's essentialist construal turns out to be far-fetched and implausible, whereas a form of conceptualism (the cluster theory of reference) is tenable.

Keywords: general name, natural kind, conceptualism, descriptivism, the cluster theory, essentialism, reference.

Saul Kripke was the foremost figure in the "revolution" in the analytic philosophy of 1970-ies that changed the character of the dominant accounts of meaning and reference, with an effect on the philosophy of mind, epistemology and the philosophy of science. The main changes promoted by Kripke, Hilary Putnam (the second most influential actor in what can be called "the Kripkean revolution"), and their followers were: the dethronement of the earlier dominant kind of accounts of meaning and reference (developed by J.S. Mill, G. Frege, B. Russell, R. Carnap, and others), usually dubbed "descriptivism" and "internalism"; the advancement to dominant positions of the causal theory of reference (as an alternative to descriptivism) and "externalism"; the wide acceptance and high appreciation of Kripke's "discovery" of the existence of *a posteriori* necessary truths that are supposed to ground non-analytic

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“metaphysical necessity” and determine what is and what is not “metaphysically possible”; the revival of essentialism (the view that things and kinds of things have something called “essences” that grounds their self-identities). The Kripkean view about *a posteriori* necessary truths and natural kinds soon became a sort of orthodoxy despite lots of criticisms. The old-fashioned “descriptivism” is relegated to the fringes; however, its foundations are retained in the synthetic approach that gains strength in the last decades — generalised two-dimensional semantics (F. Jackson, D. Chalmers, D. Lewis, J. Kipper, and others). This approach assimilates “Kripkean intuitions” into a broadly Fregean (that is, “descriptivist” and “internalist”) framework (see, for example, [Jackson, 2004], [Chalmers, 2006, 2010], [Kipper, 2012]). However, the “Kripkean intuitions” themselves are far from being invulnerable, and their validity is too easily (uncritically) taken for granted in the contemporary analytic philosophy. In particular, the leading two-dimensionalists are too ready to concede Kripke’s and Putnam’s points about “natural kind terms” and *a posteriori* necessary truths of the identity statements cast in these terms.

The plausibility and tenability of Kripke’s-Putnam’s analyses can be challenged and opposed with the counter-analysis that involves variations on their thought experiments and suggests the opposite (non-essentialist) conclusion. This article aims to develop and present such an analysis. It provides reasons to discard the Kripkean essentialism about natural kinds and undermines the claim that the statements of theoretical identities like “Water is H₂O”, if true, are necessary *a posteriori* truths.

1. Conceptualism versus essentialism

Kripke’s theory of the reference of natural kind terms is an expansion to general names (such as “water”, “tiger”, “heat”) of John Stuart Mill’s theory of the reference of proper names (“Aristotle”, “Hesperus”, etc.). Mill held that while general names have meanings (connotations) and refer to (denote) things that satisfy the descriptions that express their meanings, proper names have no meanings (connotations) but refer directly to concrete objects. In Kripke’s terms, Mill was *a descriptivist about general names* but not about proper names. Other influential philosophers of language before Kripke, such as Frege, Russell, and Carnap, were descriptivists both about general and proper names; that is, they believed that both general and proper names have meanings that can, in principle, be expressed by descriptions, and refer to things that satisfy these meanings (descriptions). Kripke influentially defended the view that not only proper names but many general names, natural kind terms such as “water”, “tiger”, “heat” refer directly — not to the things that satisfy certain meaning-expressing descriptions but to *kinds considered as sort of abstract individuals*¹.

¹ This presupposes specific ontology that goes beyond usual realism about universals-properties. We can locate the ontology implicit in Kripke’s view relative to the classical nominalism/realism debate as follows. Nominalists believe that on the ontologically fundamental level, all there is are concrete individuals. Realists believe that this is not enough; fundamental ontology should in-

According to descriptivism about general names, such names function in language as sort of shortcuts for the descriptions that express their meanings. The meanings of general names can be expressed by definitions of the form “X is {a description, the body of the definition}”; “X” means a thing that satisfies the description (the body of the definition), and it refers to the set of all such things (the set of all such things is “X”’s extension). On Kripke’s view, this is wrong: not only for proper names, but for such general names as “water”, “gold”, “tiger”, “heat” (natural kind terms), their reference is determined not by the properties that would figure in meaning-expressing descriptions, but by the history of the application of these names to certain *concrete* things and by (most of) these things sharing *generic essences*. A generic essence is something (a set of Essential properties²) that makes a thing *a thing of a certain natural kind*, and natural kinds are not matters of conventional classifications devised by people according to their interests; they have objective human-independent existence; they are (using Plato’s metaphor) the ways nature is “carved at its joints” [Plato, 1892: p. 474].

On Kripke’s theory, natural kinds are specific quasi-concrete sets, and *natural kind terms* relate to these sets in nearly the same way as *proper names* relate to concrete things. I characterise Kripkean natural kinds as quasi-concrete sets, because they are neither genuinely concrete (closed sets that include a finite number of concrete things), nor conceptually determined open sets (all things that have a certain set of properties-universals implied by the meaning of the name).

Take, for example “tigers”. The set of tigers is not a concrete set (like *tigers that live in the ZSL London zoo on August 15, 2020*): it is impossible to make the list of all tigers; the set of tigers is open — it includes not only the tigers that live now on Earth but all tigers throughout the Universe (suppose there can be tigers on some other planets) that live now or lived before or will be born in the future. What determines whether something belongs to this set, is a tiger?

The pre-Kripkean “descriptivist” account would be nearly as follows. A tiger is whatever satisfies our concept of a tiger, what we mean when we use the word “tiger”. The content of this concept can, in principle, be stated explicitly in the form of definition; however, to talk of tigers, we needn’t have such a definition formulated and memorized, rather, we just *mean* something, we have some idea of a tiger, of qualities characteristic of tigers, and it depends on this idea whether we would classify a certain thing (animal) as a tiger or not.

Usually, in our everyday language use, we don’t need definitions. However, if asked by someone who does not know what “tiger” means, we would try to express our meaning and come out with a description like “A tiger is a big carnivorous feline striped animal ...” We can also consider the question and make our judgement

clude universals that correspond to properties (or basic properties). The Kripkean view implies that fundamental ontology should include not only concrete individuals and universals-properties but also *kinds or kind-essences as abstract individuals*.

² I will use “Essential” with the capital “E” for “Essential” in the sense of essentialism rather than “essential” in ordinary loose sense nearly synonymous to “important”.

as to whether certain properties that we usually associate with tigers (such as “big” and “striped” for example) are really necessary for being a tiger (whether there can be a thing that is not big, or is not striped, but still qualifies as a tiger) — merely consulting the concept of a tiger in our minds or, perhaps, in the minds of experts or an explanatory dictionary. In general, the meaning of a general name can be more or less adequately expressed by a description, and such a description is often the best way to explain to other persons what we are talking about.

However, there are limitations to the expressibility of meanings in descriptions. In fact, to formulate a perfectly adequate definition — for example, the list of the properties that are necessary and sufficient for a thing to qualify as a tiger — so that no counterexample could be conceived of — can be very difficult, or even impossible³. One plausible proposition — called “the cluster theory” — is that many of our common concepts (plausibly, those of water and tiger, for example) involve a set of properties that *matter but are not necessary* for a thing to be of this kind. Roughly, there is a list of ordinary properties, such as “being an animal”, “carnivorous”, “feline”, “striped”, “big if grown-up”, that have some weights in our concept of a tiger, so that for a thing to be a tiger it should have a weighty enough set (“critical mass”) of these properties.⁴ However, it is not the case that our concepts contain the numbers for the “weights” involved, so that in order to decide whether a thing is a tiger, we calculate the sum of these numbers. Rather, we are capable of making intuitive judgements as to whether a thing has enough of “tigerish” properties to qualify as a tiger or not. If so, we cannot give a precise description-definition that expresses what we mean by “tiger”; we can give only a vague description like “A tiger is a feline animal that have sufficiently many properties such as striped, big if grown-up, etc.”⁵.

³ Our everyday understanding of the meanings of words is associative-intuitive, and no description can fully and completely express in language all the associations and their relations that form the intuitive meaning of the word. The intuitive-associative semantic field of a word can vary from person to person, or with the same person over time, or depending on the context of the use of the word. Even if we suppose that it is possible to give the complete and accurate definition of a term, this does not solve the problem, because every word in the definition would itself require understanding of its meaning. Obviously, we can't provide further meaning-expressing descriptions for all words involved in a meaning-expressing description and so on *ad infinitum*. So the description of what a certain word means (what one means when using it) cannot ensure perfectly accurate communication of meaning, but it can achieve communication of meaning accurate enough for understanding in a particular context.

⁴ Some of these properties (perhaps, *being an animal* and *feline*) can be necessary but not sufficient for being a tiger.

⁵ Cf.: “It is plausible that at least some of the properties which make up our “folk theory” of water are in some way conceptually connected with “water”. One reason to assume this is that it seems inconceivable that a substance has all of these features, yet fails to be water. Likewise, it seems inconceivable that a substance fails to have any of these features and is still water. Another reason is that adding or removing some of the properties in question in a hypothetical scenario does make a difference in our judgments about these scenarios. An important virtue of the proposed analysis is that it can uphold such a conceptual connection, while being compati-

Kripke rejects all kinds of descriptivism, including the cluster theory. Perhaps, the term “conceptualism” would be more appropriate. The point is not that we can replace general names with descriptions but that the sets of things to which general names “water”, “tiger”, etc. refer are determined by our concepts of water, tiger, etc. Something is water, or a tiger, or whatever, if it has a qualitative profile that satisfies our concept of water, or a tiger, or whatever. These concepts are meanings of “water”, “tiger”, etc. — what we mean by these words.

Kripke disagrees with the conceptualist (descriptivist) theory of meanings and advances his own theory — *the theory of natural kinds*, in which the referents of general names — “natural kinds” — are taken to be quasi-concrete sets. The discrepancy between Kripke’s theory and conceptualist theories is that

according to conceptualist theories, a general name means something like “that which has (much enough of) such and such properties” (that is, fits our concept of the things of this kind);

on Kripke’s theory, such general names as “water”, “tiger”, etc. mean “things of the same natural kind as most of these particular things”, where the natural kind of a particular thing is not a matter of our concepts but a matter of its *essence*.

A Kripkean natural kind is not a really concrete set {thing A, thing B, thing C, ..., thing N}; it is sort of hybrid between a concrete set and a conceptually defined set. Starting with a concrete set — the set of all those specific things to which a general name *has historically been applied* — Kripke proposes to see the corresponding natural kind as *all those things that have the same Essential properties as the largest part of the things that belong to this concrete set*⁶.

An important point is that what Kripke calls “essential properties” are not the properties implied in the notions (ideas) that we use to associate things with the corresponding general names (for example, to identify an animal as a tiger) but some other, *hidden* properties.

According to Kripke, the natural kind bearing a certain general name includes:

(1) *most of* those things (or *the largest part* of that stuff) to which that name was *historically applied*

and

(2) all those things (all that stuff) that have (has) the same *Essential properties* as (1).

The way to determine whether a thing T belongs to a certain natural kind N can be described in the form of the following algorithm.

1) Select all those particular things to which the general name “N” has historically been applied. Let us call this set of things the set of the initial referents (SIR) of the general name “N” — SIR(“N”);

2) Uncover the Essential properties possessed by the largest part of SIR(“N”). Let us designate them as EP(N);

ble with the observation that all or nearly all of the relevant properties are empirically defeasible: If a substance fails to have one of these properties, it can still be considered as water if it has enough of the other properties in the cluster” [Kipper, 2012: p. 84].

⁶ As Putnam puts it: “The extension of our terms depends upon the actual nature of the particular things that serve as paradigms” [Putnam, 1973: p. 711].

3) Find out whether T possesses EP(N).

All those things that have the properties EP(N) belong to the natural kind N, regardless of whether they belong to SIR("N") (the set of the initial referents of the general name "N"). All those things that do not have the properties EP(N) do not belong to the natural kind N, even if they belong to SIR("N"). Thus, the transition from the set of the initial referents of the general name "N" to the set of the things that belong to the natural kind N is made according to the scheme: SIR("N") → EP(N) → N. As a result, N includes the largest part of SIR("N") and all other things with the same essence.

2. Case study: whales and fish

To illustrate the difference between Kripke's theory and the conceptualist (descriptivist) theory, let us consider the example of whales and fish.

It is likely that in some childhood time you, like me, believed that a whale is fish. However, later we have learnt that "really" a whale is not fish. It is likely that before the creation of the modern scientific classification of animals based on Darwin's theory (the discovery of the evolutionary kinship of different kinds of animals), all people who knew something about whales took them for huge fishes. However, the modern scientific classification has assigned them to the class of mammals, and they are not considered as fish.

On Kripke's theory, this is to be explained as follows. There are natural kinds of whales and fish. Each natural kind is determined by a certain set of Essential properties. These properties are hidden and can be uncovered only as a result of scientific research. However, they tend to correlate quite well with some external, apparent features. Common language and historical pre-scientific use of such concepts as "whale", "fish", etc. follow these appearances. However, it is as though implied that there are Essential properties hidden behind these external features, and that it is these Essential properties that make things belong to the natural kinds they belong. When science eventually discovers the deep, Essential properties that are possessed by *most* individuals to which a certain general name has historically been applied, it often turns out that *some* individuals to which this general name has historically been applied *do not have these deep, Essential properties* (although they have similar superficial properties); hence, the name was mistakenly applied to them; they do not belong to this natural kind. On the other hand, some animals that do not look like those we called "fish", and so were considered to be not fish, may have the science-discovered Essential properties of the most of those animals that has historically been called "fish". If there are such animals, they are, despite appearances, fish. Roughly the same scheme applies to all other natural kinds and their corresponding general names. As scientific knowledge develops, we move from appearances (superficial, apparent) to essences (deep, hidden).

Kripke's theory is based on the assumption that nature on its own, regardless of human interests and concepts, is uniquely divided into *natural kinds* that have distinct *essences*. There is only one correct picture of the world, in which everything

is neatly ordered and compartmentalized. However, this picture is hidden from us by the deceptive veil of superficial *appearances*. The task of cognition (especially science) is to reveal the genuine, deep reality — the *essence* hidden behind this veil of appearances. Although in common language and pre-scientific talk, general names *are used* in accordance with external, apparent features, they *mean* not those things that have these external features but those things that have Essential properties that are, *as a rule* (most often), hidden behind these external features. In cases where this rule is violated, the use of the general name according to apparent features is mistaken. For example, in the case of whales, the fishy appearance hides the mammalian essence.

From the point of view of the conceptualist (descriptivist) theory of meanings, the situation looks different. There is no single true human-interests-independent division of the world into natural kinds. Nature is not a closet in which everything is neatly ordered and compartmentalized. All concepts and classifications are the product of human cognitive activity that orders various observed phenomena in accordance with various human interests and explanatory schemes. In different contexts, the same thing may be designated by different names that imply different sets of properties⁷. The same word in different contexts can be used in somewhat different meanings that encompass nearly — but not entirely — the same range of phenomena. When important new theories appear and get widely acknowledged, and human ideas about the world change, the typical or dominant meanings of some words can also change so as to get adjusted to the new picture of the world. *Words* do not mean essences and natural kinds; they *mean just what we mean when using them*. If people, when using a certain word, mean things with certain apparent properties, then this word means things with these apparent properties. Otherwise, if the word-users mean things with certain deep, directly unobservable properties, the word means things with these deep properties. Anyway, what the word means is determined by the associated conceptions of the word's users. (That is, *pace* Putnam, meanings are “in the head”.)

From the point of view of Kripke's theory, the common word “fish” always meant the same things, and this meaning excludes whales. It means things of the kind that includes all and only those things that have the same hidden *Essential properties* as most of those things to which the name “fish” was applied, even though it was applied according to superficial fish-typical *apparent properties* (such as body shape, fins, living in water).

In the conceptualist (descriptivist) perspective, the fact that whales are not (usually) considered now as fish should be explained otherwise, — probably, by some change in the meaning of the word “fish”. Roughly, once upon a time people meant by the word “fish” animals with a certain typical appearance (body shape, fins) that live in water, and a whale is fish in that sense. Now people usually use the

⁷ Cf.: F. Hayek: “The same thing may be for one science a pendulum, for another a lump of brass, and for a third a convex mirror” [Hayek, 1952: p. 69].

word “fish” in a somewhat different meaning (that has something to do with scientific classifications, and with whales being classified as mammals), and a whale is not fish in that sense.

It is tempting here to talk of the pre-scientific and scientific meanings of the word “fish”, the former (whale-including) based on apparent properties and the latter (whale-excluding) — on deep scientific considerations of the common evolutionary origin. However, this does not quite work with “fish”, because unlike “mammal”, which corresponds to the scientifically respectful class *Mammalia*, “fish” does not have any good scientific classificatory standing. This makes the claim that a whale is not fish, and its truth-value, vague. As John Dupre explains,

“... actually this example is by no means as clear-cut as is sometimes assumed. In the first place, “mammal” is more a term of biological theory than of prescientific usage. One cannot recognize mammals at a glance, but must learn quite sophisticated criteria of mammalhood. “Fish,” by contrast, is certainly a prescientific category. What is more doubtful is whether it is genuinely a postscientific category, for it is another term that lacks a tidy taxonomic correlate. I assume that the three chordate classes Chondrichthyes, Osteichthyes, and Agnatha would all equally be referred to as fish (unless sharks and lampreys are just as good nonfish as whales). But unless there is some deep scientific reason for lumping these classes together but excluding the class Mammalia, the claim that whales are not fish might be a debatable one. Perhaps “fish” just means aquatic vertebrate, so that whales are both fish and mammals...” [Dupre, 1981: pp. 75–76].

However, the very readiness of our contemporaries to accept the claim that a whale is not fish can be considered as an indication that the dominant contemporary meaning of “fish” is somewhat narrower than “aquatic vertebrate”. The prevalent contemporary convention can be expressed by the definition of fish as “aquatic vertebrates that have gills throughout life and limbs, if any, in the shape of fins” [Nelson, 2006: p. 2]. On this definition, whales and dolphins don’t count as fish, because they don’t have gills. However, such definition of fish (as Nelson admits) is artificial — that is, has nothing to do with “cutting nature at its joints” and essences. Fish turns out to be a variegated group that includes a number of more scientifically respectable groups at different levels of biological classification (infraphylums, superclasses, classes, subclasses, infraclasses, orders). It is a *paraphyletic* group — which means that the nearest common ancestor of all fish has descendants that are not fish but tetrapods. Moreover, most fish (the ray-finned fishes, the dominant fish group in numbers of species) are more closely related to mammals than to some other fish, such as sharks [Nelson, 2006: p. 1]. And the property of having gills, which turns out decisive for excluding whales and dolphins, is anything but deep science-discovered Essential property — it is just as superficial as the fishlike body shape and living in water.

So the situation with fish and whales seems to be as follows. The meaning of the common language word “fish” is constituted, in accordance with the cluster theory, by a set of properties that we associate with this word — that constitute our concept

of fish. Whether or not a whale is fish depends on whether we — or perhaps experts to which we defer⁸ — take having gills as a necessary condition of being fish. If we (or the experts) take gills as a necessary condition for being fish, then a whale is not fish, and it is a matter of what we (and/or the experts) mean by “fish”, of our concept of fish. And it is likely that this is really the case with the present use of “fish”. On the other hand, if we (or the experts to which we defer) do not take gills (and any other property that whales lack) as a necessary condition for being fish, then a whale is fish, and it is a matter of what we (and/or the experts) mean by “fish”, of our concept of fish. And it is likely that this really was the case with the use of “fish” in some earlier times, or with our childhood use of this word⁹. Whether or not there really was the historical shift from the use of “fish” in the meaning in which whales are fish to its use in the meaning in which whales are not fish, there is nothing in this case to support Kripkean essentialist theory of natural kinds, and fish is a very poor candidate for being a natural kind in anything like Kripkean sense.

If I am right so far, then Kripke’s case against the conceptualist (descriptivist) account and for his own essentialist account fails. This conclusion can get further considerable support if we analyse carefully the other staple examples Kripke used to explain and support his theory. In the next section, I discuss several such examples and their modifications and argue that, far from corroborating Kripke’s case, they undermine it.

3. Kripkean counterfactual stories revisited

3.1. Water-H₂O identity

We know that water is an aggregate of H₂O molecules. Kripke claims that this truth is necessary although *a posteriori*. It is *a posteriori* because it was discovered as a result of empirical research and could not be discovered otherwise; we could not learn about it without such research, merely by conceptual analysis. There was a time when people did not know that water is an aggregate of H₂O molecules; when they used the word “water”, they meant (and even now usually mean) the liquid transparent stuff that fills rivers, lakes, seas, and oceans and, if not mixed with too much salt, is drinkable and thirst-quenching. (In what follows, I will use the phrase

⁸ Admittedly, the “linguistic division of labour” or “semantic deference” should be accommodated into our theory of meaning and reference. However, *pace* Putnam [1975] and Burge [1979; 2007], I don’t think that the fact that in our use of many words we defer to some linguistic “authorities” (experts) gives any support to the claim that “meanings” just ain’t in the head” [Putnam, 1975: p. 144]. All there is to “semantic deference” is just that meanings in some (non-expert) heads defer to meanings in some other (expert) heads, or to meanings authorised by experts in dictionaries, encyclopaedias, etc.

⁹ As for myself, I am pretty sure that in my childhood, there was a time when I understood the word “fish” to mean animals of a certain typical appearance (body form, fins, etc.) that live in water. When I used the word “fish”, I did really mean such animals. I certainly didn’t mean some natural kind picked out by its hidden Essential properties. And supposedly there was a pre-scientific (sort of collective childhood) time in human history, when all speakers of English used the word “fish” in this meaning. And whales would qualify as fish in that sense.

“watery stuff” instead of this description.) This description does not entail that water is an aggregate of H₂O molecules. It could turn out that the watery stuff on Earth is not H₂O but, say, some XYZ, and then water would be XYZ. If so, then why Kripke claims that the truth that water is H₂O is *necessary*? It is because on Kripke’s theory, given that *the largest part of the stuff that was historically called “water”* has turned out to be an aggregate of H₂O molecules, being such an aggregate is *an Essential property of water*; this property is what makes that stuff water; it is necessary for the *natural kind* of water.

Accordingly, because the truth that water is H₂O is *necessary*, any stuff that is not H₂O is not water, even if it is a perfect watery stuff that has all the properties by which we identify water in ordinary life. For example, when talking about some conceivable (possible) world in which watery stuff is not H₂O but, say, XYZ, we should not call that stuff “water”.

The conceptualist interpretation of the water-H₂O case should be entirely different. “Water” does not mean some quasi-concrete *this*-stuff. It means *the stuff that satisfies our concept* of water, that is, has the properties that this concept implies.

At present, there are two such concepts, or two main meanings in which the word “water” is used

- 1) the initial common language meaning: “water” means watery stuff;
- 2) the special scientific (chemical) meaning: “water” means the stuff that consists of H₂O molecules.

The word “water” can be used in any of these meanings — depending on convenience and commonly accepted conventions in the context of the use. It is just important that in those contexts in which the difference between these meanings can produce confusion, the interlocutors understood this word in the same sense. If the word “water” is used in the first meaning, then any watery stuff is water, whether it is H₂O or not, and so the truth that water is H₂O is *not necessary* (is *contingent*). If the word “water” is used in the second sense, then of course, a watery stuff that is not H₂O is not water; however, the truth that it is not water (and that water is H₂O) is *a priori* — just a matter of the word’s meaning.

The first meaning of “water” does not imply the sameness of chemical identity. If two chemically different stuffs had the same ordinary-human-interests-relevant properties of watery stuff, it is likely that we would call them both “water”.

The possibility that the same concept — not only in ordinary language but in science as well — allows for very *different realizations on the deepest, fundamental level* (in terms of essentialism, they should be considered as things or phenomena with different *essences, Essential properties*) can be illustrated by the scientific *concept of temperature*. In physics, it is held that there are several physical realizations of temperature: for gases, temperature is the mean kinetic energy of their molecules; for metals, it is something else; for plasma, something else yet¹⁰.

¹⁰ Cf.: D. Chalmers: “Biological phenomena such as wings can be realized in many different ways, for example ... Indeed, as has been pointed out by Wilson [1985] and Churchland [1986], many physical phenomena ... (e.g. temperature) are in fact multiply realizable” [Chalmers, 1996: p. 364].

Likewise, if there were several chemically distinct watery stuffs that are as good as water for all our important purposes, we would probably consider them all as water — its different chemical realizations. Consider the following thought experiment.

Imagine that nature is arranged otherwise than it really is and that the human history was different too. In particular, Columbus has discovered America just after chemists have discovered that water in and around Eurasia and Africa is composed, for by far the largest part, of H_2O molecules. America, like Europe, seems to have water — there is watery stuff in and around with all the same superficial properties — liquidity, transparency, taste and smell, drinkability, etc. Some time after America was discovered, nobody suspected that its watery stuff is not composed (for the largest part) of H_2O molecules. However, it has turned out that most of it is composed of some other molecules, say X_2Y . (By happy chance, X_2Y fits human organism, as well as other living organisms, just as well as H_2O , in all the same important respects. And some specific laws of nature made H_2O gather in and around Eurasia and Africa, and X_2Y — in and around Americas.)

In the period between the discovery of America and the discovery that most of the American watery stuff is X_2Y , nobody distinguished the European watery stuff from the American watery stuff. People called both “water”. From the point of view of Kripke’s theory of natural kinds, this was a mistake. Really, only (the largest part of) the European watery stuff (H_2O) is water, because historically, the word “water” was introduced (and used before America was discovered) to name the stuff that has turned out (as chemists had discovered) to be composed (for by far the largest part) of H_2O molecules.

But people do not know of Kripke’s theory. Now, they are to decide, without its influence, as a matter of natural language use, whether (1) to continue to call both watery stuffs “water” (and introduce some further distinction — say, “European water” and “American water” — for special chemical purposes), or (2) to call so only the European watery stuff (H_2O), while giving the American watery stuff some other name. Now judge for yourself: which decision seems more natural? Which decision would fit better what people did really mean, up to this moment, by “water”? If the option (1) is more plausible, then Kripke’s theory is mistaken and conceptualism is right.

Now consider a well known *real* case — that of jade. There is a mineral called “jade”. However, it has turned out that there are two compositionally distinct kinds of jade — one had got name “jadeite”, and another “nephrite”. Jadeite and nephrite have similar “superficial” properties — colour, solidity, etc. So when the compositional difference was discovered, people continued to call both “jade”, and introduced the further distinction of “jadeite” and “nephrite” for those special purposes where the difference matters. However, if they followed Kripke’s theory, they would hold that only nephrite is jade (because the largest part of what was historically called “jade” is nephrite), and jadeite is not jade. I think that this case shows that natural language *does not* work in the way the Kripkean theory requires, and does work as conceptualism predicts.

A Kripkean can object that jade, unlike water, is not a natural kind. But then he has the burden to explain where this “unlike” comes from? Why water is not, like jade, a functional rather than a Kripkean natural kind? What is the principal difference between jade and water that makes this the case? Generally, how to draw the line between natural kind terms and general names that designate functional kinds? You will hardly succeed to find answers to these questions in works of Kripke, Putnam, or other Kripkeans.

3.2. Gold and tigers

Immanuel Kant wrote that the statement “Gold is a yellow metal” is an analytical ($\equiv a priori$) truth. This means that the fact that gold is a yellow metal is not empirical (known from experience: to begin with, we have to do with a stuff called “gold”, and then we find out that it is *yellow* and *metallic* by means of observations and experiments) but conceptual, — that is, yellowness and metallicity belong to the content of the concept of gold; the word “gold” *means* a yellow metal (with some further properties). Therefore, for any thing (stuff) that is not a yellow metal, it is incorrect to call it “gold”. It is not gold *by definition*.

An objection can be made that according to the scientific understanding of the word “gold” (gold is the substance that consists of atoms of a certain kind) this is not the case. However, this objection can be declined on the grounds that it does not relate to what Kant meant. It can be that the word “gold” in the pre-scientific sense did not mean exactly the same thing as the same word means in the scientific sense. It is plausible that the meaning in which scientists (chemists) use the word “gold” is different from the meaning in which the word is used in common language, or at least was used in Kant’s time, even if their referents happen to be the same, entirely or for by far the largest part. So some of gold in the second, scientific sense can be not gold in the first, pre-scientific sense meant by Kant.

Kripke [1972: pp. 314—316, 319—321] makes another objection. He proposes the following thought experiment. Imagine that gold is not really yellow but only appears yellow because of some systematic optical illusion, which is due, for example, to some deceptive property of Earth’s atmosphere. Imagine that one fine day this property of the atmosphere disappears, and we see that in fact, all the stuff we called “gold” is blue. Would we say that this is not gold? Would all newspapers write that it has turned out that gold does not really exist? Probably not. Rather, we would say, and the newspapers would write, that it has turned out that gold is not yellow but blue. According to Kripke (his theory of natural kinds), the reason is that we use the word “gold” not in a descriptive sense (“a yellow metal ...”) but as a rigid designator that refers to some this-stuff — the stuff that has the same Essential properties (essence, or “nature”) as most of what has historically been called “gold”, whatever are its properties.

However, even if we agree with the results of Kripke’s proposed thought experiment, we can easily give them an entirely different, *conceptualist interpretation*, in the perspective of the *cluster theory*. It would provide an entirely different explanation as

to *why* we would probably continue to call this substance “gold” even though it turns out to be blue rather than yellow. We would persist in calling it “gold” not because the word “gold” means some quasi-concrete this-stuff-whatever-its-properties-are but because our common concept of gold *does not* really imply yellowness *as a necessary property*: there are other properties that we associate with the word “gold” and that (taken together) are more important for our meaning of “gold” than yellowness. The crucial thing is that these properties are more important than yellowness for the various purposes in which we *use* gold; they are more important as to what we can do with gold. Kant was mistaken, but not in the way Kripke suggests. Yellowness is not so important a part of *the common concept of gold* as to be its *indispensable* part. However, *pace* Kripke, this does not mean that this common language concept of gold is not constituted by some familiar properties of gold. Rather, it means that the common language concept of gold is constituted by a set of such properties in a pretty complicated and vague way, by means of a multitude of qualitative associations and intuitive appraisal of their relative importance, that (as well as most other common language concepts) can hardly be captured precisely and exhaustively by any definition¹¹.

Kripke disagrees with this interpretation. From his point of view (according to his theory of natural kinds), even if it turns out that *all* properties of the stuff we called “gold” so far are entirely different from those properties we usually associate with the word “gold”, we would (or should?) nevertheless continue calling it “gold”. Whether it is really so, we will discuss after considering another, related example, of tigers.

Kripke adduces the definition of a tiger as “a large carnivorous quadrupedal feline tawny yellow in colour with blackish transverse stripes and white belly” from the *Shorter Oxford English Dictionary* [Kripke, 1972: pp. 316–317]. However, he points out that there can be a tiger with *three legs* (perhaps, a crude poacher has cut off one of its legs), or a *small* tiger cub. This seems to contradict the “definition”, which says that a tiger should be four-legged and large; so the definition does not express necessary conditions for being a tiger. Kripke thinks that this confutes descriptivism and supports his theory of natural kinds.

However, just as in the case of gold, this can be construed otherwise — in accordance with the conceptualist theory of meanings (in particular, the cluster theory). I, for one, would say that the clause from the *Dictionary* is not a precise definition. Although the clause conveys the common language meaning of the word “tiger”, the cluster theory explains that with common language concepts, not all meaning-constituting properties are necessary. The formulation can be improved to convey more precisely the meaning of the term “tiger”, as an animal that belongs to some kinship group most adult members of which are large catlike four-leg-

¹¹ I suppose that for the common language concept of gold, the most important is its functioning as a precious metal, which is enabled in part by some of its natural properties and in part by the conventions accepted in our society. Gold, as well as water, — is a functional kind rather than Kripkean natural kind.

ged animals tawny yellow in colour with blackish transverse stripes and white belly. And the scientific concept of a tiger makes this notion more precise by locating this kinship group in the evolutionary tree in terms of species (*Panthera tigris*), genus (*Panthera*), family (*Felidae*), etc.

However, Kripke's theory entails that even if it somehow miraculously turns out that *all* those animals that people so far called "tigers" don't really have *any* of those properties that we take to be characteristic of tigers (somehow, it turns out that they are really small grey fuzzy animals that eat only grass!), they are tigers nevertheless.

I think that both examples — with gold and tigers — undermine Kripke's theory and support the conceptualist (descriptivist) theory that such words as "gold", "tiger", etc. refer to things that correspond (to a large enough degree) to our concepts of gold, tigers, etc., in terms of name-associated familiar properties, rather than by historical application of these names to concrete things and by the essences of these things.

Imagine that indeed, as a result of some miraculous complex delusion-producing factors, some rabbit-sized fuzzy long-eared rodents looked to people as large striped felines. People even had hallucinations of those predators eating other animals and human beings. So people called them "tigers". The same miraculous complex delusion-producing factors made large striped feline predators look as cat-sized fuzzy long-eared grass-eating rodents; people called them "rabbits". Imagine that our local zoo has such animals. Now imagine that these delusion-producing factors have disappeared, and people see what these animals are really like. In our zoo, wherever large striped feline predators were seen just a moment ago, now we see cat-sized fuzzy long-eared grass-eating rodents, and wherever cat-sized fuzzy long-eared grass-eating rodents were seen just a moment ago, now we see large striped feline predators. Scientists have found out and explained that our previous perceptions of these animals were hugely distorted by certain delusion-producing factors. Should we now (as it follows from Kripke's theory) call the cat-sized fuzzy long-eared grass-eating rodents "tigers", and the large striped feline predators "rabbits"? I, for one, don't think so.

In a similar way, we can speculate about gold. It will be just a development of Kripke's own imaginative exercise concerned with the possibility that gold only seems yellow but is in fact blue¹², and even the possibility that gold is not a metal¹³. Let us drive this speculation to its extreme and see what comes out of it.

¹² "Suppose there were an optical illusion which made the substance appear to be yellow; but, in fact, once the peculiar properties of the atmosphere were removed, we would see that it is actually blue" [Kripke, 1972: pp. 315–316].

¹³ "If one went in more detail into the concept of metals, let's say in terms of valency properties, one could certainly find out that though one took gold to be a metal, gold is not in fact a metal" [Kripke, 1972: p. 319]. — I think that this claim involves confusion between the scientific concept of metallicity and the pre-scientific common language concept. The latter was available long before people knew anything about valency. And I suspect that when Kant said that gold is necessarily (analytically) a yellow metal, he meant this pre-scientific common language concept of metallicity.

Imagine that *almost all* our ideas about the properties of the stuff we used to call “gold” (its colour, lustre, solidity, plasticity, etc.) are radically mistaken due to some systematic delusion. When the delusion disappears, we find out that the substance everywhere in places where what we called “gold” has been located is a stinky brown liquid entirely unfit to serve as a standard of value — just like liquid shit. Should we hold that this liquid is gold? Does it really fit the common language meaning of “gold”? Hardly so, I think.

This example was suggested to me by a cinematised magic story “Wonders in Reshetovo” (producer — M. Levitin) that involves the transformation of dung into gold and later its return to the initial state. Imagine a magic scenario with such transformations, and that in this scenario, the name “gold” was initially given to such stuff (the event of “baptism”, in Kripke’s terms) when it had all the familiar properties of gold (lustre, solidity, yellowness, etc.), and the name was used for some time to refer to it. Then the reversal has occurred — the stuff has lost all the familiar gold-associated properties and acquired all the dungy properties. According to Kripke’s theory, after the reversal we should still hold that this dungy stuff is gold rather than dung. I find this very implausible, and so think that this example refutes Kripke’s theory and supports some kind of conceptualism (descriptivism).

Of course, conceptualists have the burden of accommodating other Kripke’s examples that may *prima facie* seem to support his theory. One such gold-related example is that of “fool’s gold” — the mineral pyrite (or iron pyrite) that bears a superficial resemblance to gold. However, it is not considered to be (a variety of) gold. On Kripke’s theory, it is because pyrite has different Essential properties, chemical composition, than the largest part of the stuff that was historically called (and baptised as) “gold”. However, there is a good conceptualist explanation of why pyrite is not considered as gold that does not appeal to any such hidden Essential properties as chemical composition. The explanation is that our (common language) concept of gold *crucially depends on the use of gold as a rare precious metal and a standard of exchange value*. (I suggest that this functional and human-purposes-relative property of gold is more important for the common language meaning of “gold” than its yellowness.) Pyrite does not count as gold because it does not fit this purpose: besides being distinguishable from gold by such (superficial, observable) properties as hardness and crystal form, it “is far too brittle and unstable to be used in jewelry” [Rickard, 2015: p. 57]: “The atmosphere and much of the rivers, lakes, and oceans of the Earth are oxygenated. Any pyrite that comes into contact with these environments becomes unstable and breaks down” [Ibid., p. 175].

I think that the lesson we should draw from the pyrite example is not Kripkean but pragmatist: the properties that are most important for the meanings of common language words are the most important possible (and convenient) uses of the things designated by these words.

3.3. Unicorns

Unicorns are legendary creatures. As far as we know, they never really existed.

Kripke claims that even if scientists unexpectedly find out that animals that perfectly fit the typical description of unicorns do really exist (or did really exist), it would nevertheless be truth that unicorns don't exist (never existed). On Kripke's view, these unicorn-like animals would not be unicorns; it would be incorrect to call them "unicorns": "even if archeologists or geologists were to discover tomorrow some fossils conclusively showing the existence of animals in the past satisfying everything we know about the unicorns from the myth of the unicorn, that would not show that there were unicorns" [Kripke, 1972: p. 254]. Why? Just because admitting that these creatures were unicorns contradicts Kripke's theory of the reference of natural kind terms.

Kripke's point is that historically, the word "unicorn" was not introduced to designate some natural kind by the appropriate procedure of "baptism". In fact, it was never used to refer to any real, existing animal. So, there is no natural kind of unicorns (no set of the initial referents of the general name "unicorn" → no Essential properties of the largest part of this set → no unicorns). With "unicorns", Kripke's natural kind theory does not apply: if animals that perfectly fit the description of unicorns exist (existed), they don't stand to our use of the word "unicorn" in the historical-cum-causal relationship required by Kripke's theory of natural kinds. Hence, if Kripke's theory is right, they are not unicorns.

However, why should we subject our use of such words as "unicorn" to the dictate of Kripke's theory rather than judge this theory by what seems natural to say in the situation envisioned independently of this theory? I suppose that Kripke's theory should be judged by what we find natural to say in such situations, rather than *vice versa*. Otherwise, what evidence can there be for the truth/falsity of this theory? And I suppose that if scientists were to discover the existence of animals "satisfying everything we know about the unicorns from the myth of the unicorn", people who are not aware of Kripke's theory would say (and newspapers would write) that scientists have discovered that unicorns really exist(ed).

Conclusion

The analysis proposed in this article shows that Kripke's arguments against "descriptivism" and in favour of his own essentialist theory of the reference of natural kind terms fall short of their purpose. Most of Kripkean intuitions on which these arguments are based are highly controversial, and a moderately sophisticated form of conceptualism (the cluster theory of meaning) can successfully account for their most plausible part. The examples and speculations Kripke advanced to explain and support his case are two-edged: they can be developed and used to undermine Kripke's theory and uphold conceptualism. The further arguments of Kripke's followers — especially, of the second most influential figure in the Kripkean "revolution", Hilary Putnam — would be an appropriate topic for subsequent discussion.

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