

The Semantics of Common Nouns and the Nature of Semantics

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This paper should be read as a sequel, more than fifty years on, to Putnam's breakthrough "Is semantics possible?" (1970). This early piece is less celebrated than Putnam's later ones and those of Donnellan, Kripke, and Kaplan, turnabout papers that mark *the referential turn* against the Frege-Carnap classical model of, (1), the semantics of (proper and common) *nouns* in particular and, (2), the form of *semantic theory* in general. We believe that "Is semantics possible?" hides its light under a bushel; it is deeply illuminating both on the specific topic of noun-reference and on the more general question of what kind of science semantics is. We would like to revisit both issues half a century on.

In the space of a few pages, Putnam manages to touch what seems to him two related topics, that is, (1), the semantics of common nouns in natural languages, and, (2), the question that gives the paper its title, "Is semantics possible?". How are (1) and (2) connected for Putnam? For the sake of argument, Putnam accepts Quine's then most influential general skepticism about semantics as an empirical scientific theory, say on the model of chemistry or biology. The paradigm developments in formal semantics (ubiquitous in that inventive decade, the Sixties, just before Putnam wrote) followed the structure of abstract *model theories* of formal languages. In a word (playing on a formulation made famous

later by Partee) semantics as practiced appeared more like a branch of mathematics (viz., model theory, algebra) than of the natural sciences.¹ In the model theories of formal languages, the lexical (atomic) base is treated *schematically* and the focus is rather on the (sentential) connectives. This gives us *recursive* semantics, where a semantic rule is associated with each syntactic rule that generates new forms out of ingredient inputs. But if, says Putnam following Quine, all that we can do is to assimilate natural languages to formal ones and offer schematic model theories for them, the prospects of semantics as a natural science are dim. However, continues Putnam, not all hope is lost. We *can* and thus *should* investigate the lexical base of natural languages, their nouns, adjectives, verbs, adverbs, etc. As we do so, an *empirical* theory of genuinely natural-historical phenomena, *natural languages*, emerges that even Quine might see as scientific. The naturalization of semantics starts by de-schematizing it and attending to its lexical base.

Putnam goes on to do just this. He investigates the prospects for a theory of common nouns in natural languages.² Through this investigation, he comes to see various things. To begin with, the classical reductive and reference-free Frege-Carnap *predicative* semantics of common nouns is in error: common nouns are *referential*. Furthermore, now at the higher level of engaging with Quine's challenge, his discoveries in the test case of common nouns impart a host of morals about how to make a natural science out of semantics.

We acknowledge Putnam's methodology and in particular the symbiotic connection between the specific topic of what the semantics of common nouns is and the general one of what a semantics of natural languages should be. In this paper, we see ourselves as amplifying his points regarding (1) and (2). As for (1), there emerges a uniform referential seman-

¹ See Montague 1970a, 1970b, and 1973, and Partee 1979. Montague's famous title "English as a formal language" conveys the gist of the method if the phrase "as a formal language" is read in a strong way, as indeed Montague intended: the English fragment is *reduced* to a formal (higher-order) language, with its own logical syntax cum model theory.

² Later, he comments on verbs like "grow" and adjectives like "red" (1975, 244). Here we focus on common nouns, although we believe that our remarks can be extended to all categorematic words.

tics for (common) nouns. A host of familiar problems, in our view due to intrusions from metaphysics, are now dissolved. This leads towards the end of the paper to launching reflections related to (2), the proper treatment of natural language semantics in general.

1. Some guidelines for a semantics of common nouns

The following are our fundamental guidelines for a semantics of common nouns:

A. *The uniformity of nouns I*: All nouns, proper (“Aristotle”) and common (“water,” “tiger”), are to be treated uniformly. From a semantic point of view, all nouns function in the same way.

B. *The uniformity of nouns II*: Any of the aforementioned nouns, e.g., “tiger,” has the same semantic function wherever it occurs in a sentence.³

C. *The uniformity of nouns III*: The sole semantic function of nouns is to refer.

D. *No predicative reduction*: No noun is to be reduced to a predicate (open sentence).

E. *No extensional reduction*: The semantic value of a noun is not an extension (in a model, world).⁴

F. *No intensional-modal reduction*: The semantic value of a noun is not a modal intension.

(A)–(C) insist that nouns are to be treated uniformly. By means of (A), we exclude the unprincipled reductions practiced by the classical revisionist logical-form tradition. For example, Russell allowed some proper nouns, but not others, to be reduced to predicates (descriptions); in sophisticated later variations, *all* proper nouns were admitted as non-predicative, though common nouns were still reduced, as a matter of standard formal symbolization, to predicates. Ac-

³ Davidson called such a feature *semantic innocence* (1968–9, 108). See also Barwise and Perry 1981.

⁴ By this, of course, we do not mean that there is no set collecting things that a common noun is *true of*. But one should not take this set to be *semantically* related to the noun.

According to (A), we cannot treat “Aristotle” referentially while we treat “tiger” predicatively: either all are reduced to predicates (as indeed suggested by the strict classical model) or else all refer. We view Putnam as accepting thesis (A) all the way down.

We should like it noted that thesis (A) does not yet settle whether nouns refer: we may well let them all be reduced to mechanisms of predication as indeed urged by the logical tradition when driven by generality and elegance (as in the work of Quine on the elimination of all “singular terms”). In a similar vein, (B), according to which a given noun, proper or common, functions semantically in an invariant way, without shifts created by this or that embedding context, is a formal uniformity thesis (for a given noun in all its occurrences), but not yet a thesis telling us what the function of the noun is (in all these occurrences).

Our third thesis, (C), is that common nouns, like proper nouns, refer to worldly entities: just as “Aristotle” refers to the man Aristotle, “tiger” refers to the animal kind tigers.

Thesis (C), according to which the semantic function of nouns as such is to refer, was not developed in full by the aforementioned quartet of pioneers of the referential turn. They certainly made it clear that proper nouns refer and are not predicative but have left it open whether common nouns do so.⁵

To understand this thesis requires a two-step move. The first is to separate it from a host of non-semantic, frankly *metaphysical*, theses that have blurred our understanding of the semantics proper. Then, once the metaphysical intruders are out of the way, we need to focus on the primal semantic relation, *reference*.

2. Semantics vs. the intrusion of metaphysical doctrines

We shall point to three major intrusions of metaphysical doctrines that have clouded the possibility of referential semantics for all common nouns (there may well be others). The

⁵ Donnellan (1983), for example, was somewhat skeptical about the referentiality of common nouns.

first involves the injection of defining predicates (“characteristic marks”) in the actual world while stating what a common noun such as “tiger” stands for. This leads to subordination of the noun’s semantics to the metaphysics of what is referred to by it. It thus occurs that true predications about the kind of animals precede and determine the reference of the noun. The second is an amplification of the first, this time with involvement of *modal* predications, alleged necessary truths projected across possible worlds about the kind, prematurely infesting the semantics. The third concerns the idea that the existence and identity conditions of some kinds but not others (e.g., the *artifactual* kind pencils but not the *natural* kind tigers) depend on our linguistic activities and this difference must be reflected in the very semantics of the common nouns we use to refer to them.

2.1 The intrusion of actual true predications

Metaphysical questions about the existence and identity of the entity referred to need to be separated from a discussion of the *semantic* relation (*reference*) between the noun and the entity referred to. We should investigate noun-semantics without speculating about the referred entity’s metaphysics and investigate the referred entity’s metaphysics without speculating about noun-semantics; in a nutshell, substantial metaphysics without noun-semantics and noun-semantics without substantial metaphysics.

Observe the independence in the seemingly simpler case of proper nouns and the individuals they refer to. We may ask the metaphysical question (whether about the *ontology* and nature of reality or in terms of *modal* issues of trans-world identity) whether Aristotle had (of necessity, of his essence or his nature) to be generated by a particular sperm and egg and, thus, at a particular time in history. To do so requires no specific doctrine about how the name “Aristotle,” the demonstrative “he” (uttered pointing to Aristotle) or a description, definite or indefinite, “the (an) author of the *Nicomachean Ethics*” relates semantically to the philosopher. Get the man proper, by whatever means, and you can ask a question about him and his existence and identity conditions, and if you so will, project it even modally, to how he *must* have originated.

In like manner, we may ask the metaphysical question about the species (kind) of tigers, whether it had to originate by a reproductive mechanism in a certain ur-group with a given DNA at a certain period in history, e.g., only so many million years ago, and on planet Earth. We may ponder all this whether we use the single word "tiger," the Latin (now scientific) expression "Felis Tigris," the description "my favorite feline species," or the complex demonstrative "that kind of animal" (uttered pointing to Shere Khan).

Similar observations on independence from semantic doctrines about nouns apply to the metaphysics of trans-world relations dissected by Kripke in the case of individuals, e.g., that Nixon of this world and Nixon of that (any) other world must share the *same* O-relation ("same origin"), and in the case of kinds by Putnam, according to whom some ingredients in the real world and some ingredients in another world are of the same kind (if and) only if they bear the theoretical *same* L-relation (same chemical structure, same DNA, etc.). These are all claims of metaphysics, concerned with what makes an entity (individual or kind) the one it is (across worlds). They are not questions about the semantics of nouns.⁶

So much for the independence of metaphysical questions. In the reverse direction, semantic questions about *how* nouns refer to entities should not be mixed with questions about the properties of the entities proper. This, again, is quite clear in the case of proper nouns. The noun "Aristotle" refers to Aristotle and this is no observation, in metaphysics, about the *truth* of any *predicate* applying to that man. The latter type of question concerns the *satisfaction* relation, obtaining between Aristotle and a compound predicate, e.g., "is identical to Aristotle," "is the man originating in gametes X," or "is the author of the *Nicomachean Ethics*," all true of Aristotle, though the last only contingently, the middle one of necessity but not on grounds of logic alone, and only the first necessarily and on *logical* grounds.

⁶ These questions could be raised in a formal language (e.g., in the quantified modal language of Kripke 1963) even if all singular terms and specifically all individual constants were eliminated. Variables have values but do not refer.

Quite apart from any metaphysical doctrine, the predicates and the noun relate in different ways to their semantic values. Predicates are said to have an extension or denotation or designation (the last is Carnap's 1947 term), which is the *set* of items satisfying them.⁷ If the extension is down to a singleton set, it is still a *set* that is the extension and the same is true even if it is this fixed singleton set that serves as the sole ("rigid") extension of the predicate across all possible worlds. We can say then that the extension is *modally* rigid but in spite of the spellbinding effect this phrase has had in philosophy this still just means: a certain set has been coming up consistently as the extension of the predicate across worlds. In this respect whether the set is a singleton, a doubleton ("is a square root of four") or an infinite set ("is a prime") does not alter the fact that the *set*, not an individual or a kind, has served as the *extension* (not as the *referent*) for the predicate in all worlds. On the other hand, the proper nouns "Aristotle" and "Omega" refer to particular individuals, an ancient Greek and the first infinite ordinal, regardless of the satisfaction of any predicate by the man or the number. The question of what the noun refers to (Aristotle, Omega) is prior to any predication of that man or that number, let alone modalized (necessary, essentialist) predications.

The pattern we have just observed with proper nouns recurs with common nouns. If we consider the trio of kind-describing predicates "is Obama's favorite kind of animal," "is the kind of animal with DNA D" and "is the same kind as Shere Khan's actual infima species," we encounter predicates whose extension is, respectively, contingently correlated to the referent of "tiger" (the kind tigers), necessarily so related, and logically necessarily so related.⁸ The extensions of the predicates, rigid or not, are not (are never!) the referent of the word "tiger," the kind tigers. If we now approach the kind, as reductive metaphysics has urged, by means of trans-world *extensions* of the kind (from which we *construct* the kind), the

⁷ We ignore here predicative locutions such as "is an ordinal (a set)," which may have, not in a model but in the absolute universe *V*, a correlate too large to be comprehended as a set.

⁸ We assume it a logical validity of the pertinent modal logic "If actually *P*, then necessarily actually *P*."

difference between predicate-designation and noun-reference recurs. If we consider predicates of individual animals not of the kind proper, e.g., “is an animal that is a member of Obama’s favorite kind”, “is an animal with DNA D” and “is an animal of the same kind as Shere Khan’s actual kind,” we get as extensions three sets. None of these sets of animals is the kind (which is never a set). In a nutshell, proper and common nouns that *refer* do not have (rigid) extensions and predicates that have extensions (rigidly or not) do not refer.

2.2 *Modalizing extensions*

The foregoing discussion should simply dissolve a problem deemed grave in the transition from proper to common nouns in modalized semantics. It is often said that the key fact concerning the semantics of a proper noun such as “Aristotle” is that it *rigidly designates* Aristotle. When we want to extend this allegedly key notion from proper to common nouns, a crisis strikes: the common noun “tiger” seems to designate different sets (of tigers) in different possible worlds. Thus “tiger” would be a non-rigid designator.

The problem is bogus and could have been seen to be such by either considering a case such as “prime” where the alleged extension (designation) would be rigid or assuming for the sake of the argument a metaphysics, like Spinoza’s and other modal determinists’, in which there are no counterfactual worlds, the way the world *is* is the only way it *might* have been. In such a set up only one set, the actual set of tigers, would be designated by “tiger.” But in both cases, be it that of “prime” or “tiger,” this would still, rigid extension and all, get things wrong because these sets are not what “prime” and “tiger” refer to. The sets are still *assembled* only by way of *satisfaction* by each of their members of a certain key predicate: they depend on truths such as *two is a prime, three is a prime, five is a prime* and *Shere Khan is a tiger, Tony is a tiger, Tigger is a tiger*, etc. This is the way in which we may assemble the rigid extension (in our modal deterministic set up) of the predicate “is an animal with stripes etc.” or “is a number divisible only by itself and one”. These two sets are the (rigid) *extensions (designations)* of the two predicates but they are not the *referents* of the two nouns. We simply evalu-

ate the predicate world by world and in each get an extension, a certain set of individuals. It may then turn out that one and the same set is obtained throughout the worlds. But whether it is the same set in all worlds or not, the referent of "tiger" and "prime" is another thing.

This is exactly as it is with proper nouns and their alleged rigid "designations." The word "Aristotle" *refers* to Aristotle; it has no rigid extension (designation) because it has no extension (designation) to begin with. What we want to say rather is that the individual the noun "Aristotle" refers to, Aristotle himself, is the entity that is relevant to evaluations of modal predications, be it in a primitive modal language ("might not have been a philosopher," "is necessarily human") or in the possible world alternative vocabulary ("is a philosopher (human) in *w*").

The notion of designation, which applies to predicates, is indeed *world-relative*. A special case of it is *rigid* designation, wherein the same designation keeps coming up throughout the spectrum of worlds. In contrast, the notion of reference is not world-relative at all: the neologism "refers in *w*" has been an error from the outset confusing *model theory* (which does define extension (designation) at a model (world)) and *semantics* and the *mundane* relation of referring.

"'Aristotle' refers to Aristotle" is absolutely either true or false, period. In this case, it is true and the referent, Aristotle himself, is the only thing that matters for modal predication. Should the claim be false, as in "'Aristotle' refers to Plato," it is false once and for all. It is for this simple reason that Kripke's (1972, 24, 156-8) insight both about the empty proper noun "Vulcan" and the empty common noun "unicorn" is so important: if the noun is actually empty, if it *fails* to refer, that is it; there is no redeeming of the failure in other worlds. On the other hand, a predicate such as "is an animal with one horn looking like a horse," whose extension is empty in the real world, could of course have a non-empty extension in alternative worlds. In a similar vein, notice that a predicate such as "is an even prime that is not two" has an empty extension in all worlds because as we keep evaluating, no satisfier ever comes up. This leaves the compound predicative expression meaningful. It is a case very different from that of

the noun “unicorn,” which fails to refer to anything whatsoever. It is truly empty of any semantic value.

To sum up: nouns do not designate (have extensions), they refer (or fail to refer). This much is prior to any truth of a predication about the referent. It is predicates that designate, rigidly or not, depending now on the satisfaction of the predicate by candidate individuals/kinds across worlds. The intuition that in saying “Trump (tigers) might have lost the battle” we assess “might have lost the battle” of the *actual* referent, the individual Trump and the kind tigers, is correct: of that referent we consider a modal predication or a predication holding of it in an alternative world *w*. Nowhere is there any question of reassessing the *reference* of “Trump” (“tiger”) in another world.

2.3 *Different kind of kind, different semantics?*

Let us come now to the third metaphysical intrusion into the semantics of common nouns. It has often been suggested that *artifactual* kinds such as that of pencils metaphysically differ from *natural* kinds such as that of tigers.⁹ E.g., at the level of *individual essentialism* it has been claimed that whereas an individual tiger is of necessity a tiger, a pencil might not be of necessity a pencil. More critical yet, at the level of *kind essentialism* it has been pointed out that to be a member of the kind pencils something needs to have a certain function (and a certain appearance) perhaps due to stipulations (intentions) of the *designer* of the artifact. In contrast, to be a member of the kind tigers something must have a certain DNA and descend from tigers and this is beyond the control of any designer. And now, in a final step of *semantic reflection*, this purported metaphysical difference between the kinds is projected in the semantics of the corresponding nouns: “tiger” would be governed by the deep structure kind-essentialist condition but “pencil” would have a classical descriptive meaning given by a functional or appearance level description.¹⁰

⁹ See, e.g., Schwartz 1978 and 1980.

¹⁰ Another, non-equivalent but to many related, way of making the point is that to be a member of the kind tigers one must bear the same X-relation to some actual paradigm tigers but no such theoretical relation is

Two claims are made here, one belonging to metaphysics about the kinds proper, the other about the reputedly reflective semantics of the nouns. Our purpose in this semantic paper is not to discuss the metaphysics of kinds (this independence is indeed one of our points), but we note in passing that the metaphysical claim about the kinds is anything but obvious.

First, the distinction between artifactual and natural kinds often seems to be hastily overdrawn. The fact that a certain kind depends for its existence on the actions of thinking (human) beings is not sufficient, because such beings produce distinct kinds of products, e.g., distinct types of shadows or sweat or noises or liquids that are unique to those kinds (and to individuals of the kind: a human being's shadow of the human walking could not have existed if humans were not walking and our walking-shadow can only exist if we produce it).

If Aristotle is the inspiration in separating natural and artifactual products, one may point to a key distinction in terms of *intentions* and goals and why not *final causes* governing the artifacts but not the natural products. This is a common philosophical distinction, e.g., between two isomorphic rock-made objects, a rock naturally shaped by an erupting volcano and a rock shaped by a sculptor who carved an ashtray out of it. But the distinction may presuppose a dubious metaphysics of humanly uncaused original acts, of some freely chosen actions outside the frame of natural laws and totally segregated inside the heads of intenders outside space and time causation. The common philosophical presumption of a sort of *actus originarius* outside the causal framework whereby the designer is creating a new kind out of nothing by means of an inner template seems to be an abstraction from the process of handling concrete materials (e.g., the way in which ashtrays are fashioned from hardened lava materials).

at work in the case of membership in the kind pencils. And now, having made the point about the kinds proper, it is urged that the noun "tiger" expresses as its meaning the deep structural relation to a paradigm. For some criticisms of the *semantic reflection* step, see Bianchi 2022.

Secondly, it seems that a leap from epistemic considerations to metaphysical assertions is at work. What has been called the *reference fixing* or *identifying* description by means of which the kind is introduced to an immaculate audience, thus giving the audience epistemic access to *which* kind is in question, takes the metaphysical role of *defining* the kind tout court. This conversion seems incorrect, for often artifactual kinds turn out not to abide by the original designer's identification; the kind has a life of its own and it mutates so as to be made now, e.g., of new alloys not previously available or of synthetic rubber or genetically engineered materials. Likewise what was intended by the designer for purposes of religious worship may find a use/function in saving the lives of the tribe's babies. No original stipulation can control forever what happens to the kind. Just like a natural living kind, it evolves and mutates, exactly as natural-historical individuals do. The original designer is not the metaphysical controller.

Finally, as pointed out by Putnam and especially by Burge in a series of landmark papers in the late Seventies, even if it were true that metaphysically some constitutive condition governs any possible pencil or sofa, this is far from having this kind of condition available in the head of a common user of the word "pencil" or "sofa." The competent user may be just as much in the dark about iPhones and gaskets as she is about elms and beeches.

The foregoing is meant to note *en passant* that any idea that the artifactual kinds proper are somewhat controlled by the recipes we have in our head is dubious. But now, to return to the main, semantic, point of this paper, let us just assume that the artifactual kinds are indeed metaphysically different from the natural kinds. We may even assume that to be a pencil is essentially to look like normal pencils and be used like them, whereas to be a tiger it is neither necessary nor sufficient to look like normal tigers and act like them. So, let us, for the purpose of the discussion, admit two categories of kinds, those governed by deep structure and natural-historical conditions and those controlled by designers' definitions. To add to the menu, we may further consider *mathematical* kinds which, at least in some views in the philosophy of mathematics, are given by *a priori* definitions and could not turn out any different from how they have been defined. How does

this affect our account of the semantics of the nouns we use to refer to those kinds?

The simple answer we give is: it does not affect it at all. Again, the case of individual essences and proper noun reference to the individuals having these essences should offer the clear simple model. Let us suppose that the noun "Nixon" refers to the human being Nixon who, as part of his true metaphysics, had to originate in gametes X. At the same time, the noun "Shmixon" refers to a certain *person* related to the human being. But, as Locke observed long ago, *person* is a "forensic." Many who would let the person Shmixon be individuated by his memories or other psychological profiles would surely skip over the sperm and egg origin (just as those who are focused on the human being Nixon originating in that zygote do not make the memories criterial). And of course, we can introduce a succession of such nouns for forensically defined items, all the way to a pure Cartesian ego ("Dixon"), who may not need a body at all to exist. So there; the entities Nixon, Shmixon, Dixon etc. surely differ in their existence and identity conditions. Nonetheless, the nouns refer to these three (and other such) in the same way, directly and not by means of the satisfaction of any condition. It is true that each of the three referents satisfies a different structural condition but it is not true that what makes the entities the *referents* of the three nouns is satisfaction of such conditions. Semantic reflection is false: the difference in the metaphysical profiles of the entities is not reflected in a difference in the type of semantics for the three nouns. The nouns refer to the three entities, each noun having as its sole semantic function to refer. The entities referred to are of course substantially different metaphysically. In like manner, it may well be that what constitutes a biological vs. forensic (or artifactual) vs. mathematical kind involves different types of conditions. This purported difference in metaphysical profiles of the kinds is not reflected in a difference in the type of semantics for the related common nouns: each of them has as its sole semantic function to refer to a kind.

A potent example by which we may encapsulate this separation between semantics and metaphysics is Putnam's own famous case of the word "jade" (1975, 241). According to Putnam, as a matter of actual historical fact the word refers to

two different substances, jadeite and nephrite. Many options have been tried against this example. One idea is that the word “jade” is after all synonymous with a description detailing the surface features shared by (pieces of) jadeite and nephrite. Another option, at the other end, is that there are two words “jade” (as there might be two words “bank”) each referring directly to a separate substance. A third option, not to be confused with the first, is that the word “jade” refers to one kind only, the kind (pieces of) jade, membership in which requires being a piece of either jadeite or nephrite (wherein satisfaction of the surface description is neither sufficient nor necessary).

We need not immediately make the choice of the correct resolution but we do need to exclude some incorrect options. The word “jade” is not synonymous with a surface description. Indeed, the user of the word may use it without having even that surface description “in the head,” simply by receiving it from fellow users (who may or may not have a ready description to provide). In receiving the word, the new user goes on to *refer* to whatever her predecessors did without any guarantee that she will be as informed about the appearance of jade.

Should we say that there are two words “jade,” each referring to its own chemical kind or should we say we have a single word that refers to the kind jade, membership in which involves being a piece of either jadeite or nephrite? We note that such questions recur both with proper and common nouns, wherein a single surface appearance can be received by the user carrying more than one meaning (referent). Thus the word “Aristotle” names various Greek men (and we may well suppose some of them look alike). In Putnam’s case of the Twin Earth use of “water,” which may well arise in two different ecologies on Earth, we again have one word, or two homonymous words *loaded* with two different substances, made to have a similar qualitative appearance.

To develop a stance on such cases we need to take our last step and understand the semantic relation of *reference*.

3. The fulcrum of semantics: user's (back-)reference

At the beginning of this paper, we read Putnam as reorienting semantics to focus on lexical items, in particular common nouns. Once we refocused on semantic investigations in this way, we observed, also following Putnam's inspiration, that such words as simple (proper and common) nouns *refer* rather than *denote* (*designate*). This is in sharp contrast with the long *reductionist* tradition(s) emanating from Frege, Russell, Quine, Carnap and Montague of those who held that they are in fact ("disguised") compound terms. This semantic reductionism sought out a dual semantic theory with a separation of meaning and something else, a semantic X-factor, so that, (1), meaning *determines* X (in a world, in a context). Furthermore, (2), this X-factor, the denotation or extension, is a *subsidiary* semantic value of the expression. Finally, coming to cognition, (3), what the user grasps or has in mind in using the expression is the primary semantic value, the meaning.

We saw that Putnam's reorientation of semantics towards lexical items came hand in hand with a reorientation concerning the fundamental semantic relations. Indeed, the reorientation revealed that there is a *unitary* such semantic relation, not a duality of meaning and denotation. This unitary relation we called *reference*. In contrast to denotation, reference does not run from an immaculate word to the object (kind) but rather in the opposite direction, from the object (kind) to the user; the referent is loaded into the word the user receives. Furthermore and related to this, semantics essentially involves the receiver mentioned, the user of words. Upon reception of a given word, the user *acts* with it to refer back to whatever object the word was already loaded with. Our semantics is one of (*back-*)*referring users* and *their uses*.

This much unites most modern referential theories. But differences emerge when one tries to reflect on what this unitary semantic relation of (back-)reference is. Often the differences simmer over test cases in which we witness a split over *which* objectual candidates the user is (back-)referring to. This is not a dispute about whether it is *reference* (e.g., as opposed to *denotation*) that is taking place, it is a dispute among referentialists over precisely *what* relation semantic reference is.

In speaking of the (user's) *semantic referent* of a noun we mean just that: the referent as semantically relevant (indeed, as the noun's sole semantic value). We must take care here not to read into our terminology the popular *theoretical* distinction introduced by Kripke (1977) between *semantic* reference and *speaker's* reference. The distinction has become standard nomenclature, as if theoretically innocuous. We shall not criticize it here but nor shall we use it.¹¹ Rather, we introduce our own terminology, *user's semantic (back-)reference*.

Our terminology is meant to record two key facts that could be missed by someone attending to Kripke's way of cutting the pie. We think it is essential to *natural* language that it is *users (agents)* who refer, using words as instruments. For us at the heart of semantics is the question of what the *user* refers to, by using a given word on an occasion of use. So the allusion to the user's actions is key.

4. The nature of semantics

Let us take stock and ponder what we have learned by attending to Putnam's game-changing paper.

We see a double-edged message. The first is *intra*-semantic: the discovery concerns internally the semantics of common nouns. The issue here is what kind of semantic values should be assigned to them by the semantic theory. The second is *meta*-semantic, as it concerns the very character of semantics as a science: what is the domain of semantics and what other investigations (pre- and post-semantic) need be separated.

The two levels are related for Putnam. They were already related in the history of the subject, in the days of Frege, Wittgenstein's *Tractatus*, Church, Carnap, Katz, Montague, Lewis and a host of other modern semantic theorists. We might think of the framework as inspired by Frege and brought into a modern form by way of the intension/extension systematic account offered by Carnap in his aptly called *Meaning and Necessity* (1947).

Within this framework, the crux of semantics is the *meanings* assigned to words in stage 1 of the semantics. We may

¹¹ For two somewhat divergent critical discussions of Kripke's distinction, see Almog 2012 and Bianchi 2019.

call the meanings *senses* or *intensions* or *concepts* (in the common, non-Fregean, sense of the word). Given such a meaning assignment and given a factual parameter (a model, a possible world, the real world), a derivative value is determined, e.g., the planet Venus, the set of planets (in a world, model etc.). The meanings operate at two critical levels: (1) they determine the worldly-extensions, external values that go into a calculation of truth values (Is Venus in the set of planets?); (2) they are *internalized* by competent language users of the words (grasping the meanings is what it takes to *understand* sentences, prior to any extension/truth value determination), and what determines translations between languages. Thus, they are the fundamental materials of semantics. This intra-semantic claim has consequences at the meta-semantic level: semantics is a self-sustaining science with words and compounds *already* endowed with meanings in stage 1 *before* we move to the next, evaluational, stage 2 of seeking the *post-semantic* and fact-dependent extensions, be they objects, sets or truth values associated with the linguistic media. The world enters this picture at a later stage, not until post-semantic stage 2, when we need to compute post-semantic extensional information. By this time, the language proper is fully semantically functional, expressing meaningful sentences, allowing translations and ready for understanding by the competent speakers, from whom we demand grasp of the basic meanings and ability to compose them using their syntactic competence. What is important to notice is that here there is a trade-off between (i) the self-sufficient internality of the science of semantics and (ii) the demotion of the real world from being a key determiner (it merely plays a post-semantic role as an extension-provider).

Putnam taught us to reject the double-edged thesis, both inside semantics and at the meta-semantic level.

His famous Twin Earth thought-experiments urge upon us the *impossibility result* that the meaning (at least of words like "water") cannot be both (1) what determines the worldly extension and (2) what is known by the competent speaker. Putnam produces cases where what the speaker knows (has "in the head") is simply not sufficient to determine the worldly extension.

Read literally, Putnam confronts us with a choice: (A) keep the meanings accessible to the speaker's head and give up their role as determiners of the worldly extensions or (B) acknowledge that the determination of extension operates in a quite different way and thus give up on the idea that meanings are available transparently to competent users. However, we prefer to read Putnam as questioning *both* (A) and (B), and to see the reflections on common nouns he offers as a verifying *test case*. The postulation of *meanings* is the original sin. Meanings have gone by the board and are not missed; they do not determine extensions, but, just as much, they are not what is known by competent speakers.

Thus, Putnam rejects the generalization of meanings-semantics *first*, then evaluation at many indices. He points to the need to ask for a reconfigured *meaning-free* and thoroughly *referential* semantics. But how on Earth did the words get their reference?

Now the world comes in not as a post-semantic evaluation point (where we look at a whole spectrum of possible worlds only one of which is "real"). The world that comes into play for Putnam is only the real world and its web of connections and it comes *prior* to semantics: we explain the very *possibility* of semantics by looking at the *origin* of our uses. The world, by its actions of dubbing, word generation, word transfer and causation of speakers to use words, determines the semantics of our uses, all the way down as in natural science. In this way, we isolate preconditions for semantics. There is a prior stage in which real world materials have (i) to *exist* and (ii) to be appropriately *linked* into a world-wide-web of *connected structure*. Real world processes made it the case that "Nixon" and "tiger" have a semantics (they refer to Nixon and to the kind tigers, respectively). In contrast, "Vulcan" and "unicorn" do not have a semantics, because there is no individual and no kind that has been connected to the users of the two words.

It is at this level of background facts of existence and connections that epistemological puzzles get resolved. How can a true identity sentence be informative, i.e., what *internal meaning* will make it so? How can we determine from inside the head the difference between "Neptune," which does refer, and "Vulcan," which does not, what meaning would do this

job? How can we determine from inside the head, without a causal background of connections to the users, whether they speak of Smith or Jones when they utter “Smith is raking the leaves”?

Putnam directs us to semantically deflating answers. In traditional semantics, we are looking for the key under the lamppost of meanings, when we should look at the dark side of the street; no meanings can answer world-involving questions. The answers do not lie in the head, they lie in the real world pre-semantic processes that determine what words are, on an occasion of use, connected with.¹²

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References

- Almog, J. (2012). “Referential Uses and the Foundations of Direct Reference.” In J. Almog and P. Leonardi (eds.), *Having in Mind: The Philosophy of Keith Donnellan*. New York: Oxford University Press, 176–184.
- Barwise, J. and J. Perry (1981). “Semantic Innocence and Uncompromising Situations.” *Midwest Studies in Philosophy* 6, 387–403.
- Bianchi, A. (2019). “Speaker’s Reference, Semantic Reference, and the Gricean Project. Some Notes from a Non-Believer.” *Croatian Journal of Philosophy* 19, 423–448.
- Bianchi, A. (2022). “Kind Terms and Semantic Uniformity.” *Philosophia* 50, 7–17.
- Carnap, R. (1947). *Meaning and Necessity: A Study in Semantics and Modal Logic*. Chicago: The University of Chicago Press.
- Davidson, D. (1968–9). “On Saying That.” *Synthese* 19, 130–146. Reprinted in D. Davidson, *Inquiries Into Truth and Interpretation*. Oxford: Clarendon Press 1984, 93–108. (Page numbers given relate to the latter volume.)
- Donnellan, K. (1983). “Kripke and Putnam on Natural Kind Terms.” In C. Ginet and S. Shoemaker (eds.), *Knowledge and Mind: Philosophical Es-*

¹² We would like to thank Panu Raatikainen for his invitation to contribute to this volume and Paolo Leonardi, Ernesto Napoli, and Gabriel Sandu for their comments to previous drafts. We dedicate this work to the memory of Hilary Putnam and Saul Kripke, who were generous and inspiring to both of us in different ways over many years.

- says. New York: Oxford University Press, 84–104. Reprinted in K. Donnellan, *Essays on Reference, Language, and Mind* (edited by J. Almog and P. Leonardi). New York: Oxford University Press 2012, 179–203.
- Kripke, S.A. (1963). "Semantical Considerations on Modal Logic." *Acta Philosophica Fennica* 16, 83–94.
- Kripke, S.A. (1972). "Naming and Necessity." In D. Davidson and G. Harman (eds.), *Semantics of Natural Language*. Dordrecht: Reidel, 253–355, 763–769. Reprinted with a new introduction as *Naming and Necessity*. Oxford: Blackwell 1980. (Page numbers given relate to the latter volume.)
- Kripke, S.A. (1977). "Speaker's Reference and Semantic Reference." *Midwest Studies in Philosophy* 2, 255–276.
- Montague, R. (1970a). "English as a Formal Language." In B. Visentini (ed.), *Linguaggi nella società e nella tecnica*. Milano: Edizioni di Comunità, 189–223. Reprinted in R. Montague, *Formal Philosophy* (edited by R.H. Thomason). New Haven: Yale University Press 1974, 188–221.
- Montague, R. (1970b). "Universal Grammar." *Theoria* 36, 373–398. Reprinted in R. Montague, *Formal Philosophy* (edited by R.H. Thomason). New Haven: Yale University Press 1974, 222–246.
- Montague, R. (1973). "The Proper Treatment of Quantification in Ordinary English." In J. Hintikka, J. Moravcsik, and P. Suppes (eds.), *Approaches to Natural Language: Proceedings of the 1970 Stanford Workshop on Grammar and Semantics*. Dordrecht: Reidel, 221–242. Reprinted in R. Montague, *Formal Philosophy* (edited by R.H. Thomason). New Haven: Yale University Press 1974, 247–270.
- Partee, B.H. (1979). "Semantics – Mathematics or Psychology?" In R. Bäuerle, U. Egli, and A. von Stechow (eds.), *Semantics from Different Points of View*. Berlin: Springer Verlag, 1–14.
- Putnam, H. (1970). "Is Semantics Possible?" *Metaphilosophy* 1, 187–201. Reprinted in H. Putnam, *Mind, Language and Reality: Philosophical Papers, Volume 2*. Cambridge: Cambridge University Press 1975, 139–152.
- Putnam, H. (1975). "The Meaning of 'Meaning'." In K. Gunderson (ed.), *Language, Mind, and Knowledge: Minnesota Studies in the Philosophy of Science* 7. Minneapolis: University of Minnesota Press, 131–193. Reprinted in H. Putnam, *Mind, Language and Reality: Philosophical Papers, Volume 2*. Cambridge: Cambridge University Press 1975, 215–271. (Page numbers given relate to the latter volume.)
- Schwartz, S.P. (1978). "Putnam on Artifacts." *Philosophical Review* 87, 566–574.

Schwartz, S.P. (1980). "Natural Kinds and Nominal Kinds." *Mind* 89, 182-195.