

The semantics of artifactual words

Is the semantics of artifactual words, like *table* and *pencil*, externalist? The semantics of a referential expression is externalist if it is not the case that its reference is determined by some uniquely identifying marks, some unique properties satisfied by the referent and known or believed to be true of that referent by the speaker (Kripke 1980: 106). Saul Kripke, Hilary Putnam, Tyler Burge, and others have given arguments, which most philosophers have found convincing, to show that the semantics of proper names and of the names of natural kinds is externalist. What about artifactual words? Kripke never paid much attention to them.¹ Putnam claimed, at some point, that they too have an externalist semantics (Putnam 1975: 242-244). A few years later, David Kaplan suggested that *all* terms obeying the same syntactic principles ought to share the same semantics and ‘is a bachelor’, e.g., ought to be treated in the same way as ‘is a horse’.² If this is so, then - *bachelor* being the paragon of a term for which a property uniquely identifying the reference seems to be readily available - *bachelor*, *table* and *horse* are on a par and externalism holds true across the board.

¹ At least in his published works.

² “I would treat ‘is a bachelor’ in the same way as ‘is a horse’. While acknowledging the *metaphysical* differences between a species and *bachelorhood*, the syntactical unity of ‘horse’ and ‘bachelor’ suggests an analogous *semantical* treatment” (Kaplan 1989: 581 n. 30).

More recently, semantic uniformity has been forcefully challenged. As far as I can tell, only a minority of philosophers would now be prepared to grant that the semantics of artifactual words is externalist. Some hold a hybrid view, to the effect that “against generalized externalism, ... artifactual words come in (at least) three different semantic varieties: a few have an externalist semantics, others have an internalist semantics, still others have neither but rather behave as ‘family names’ in Wittgenstein’s sense.” (Marconi 2013: 1)

I am convinced, to the contrary, that generalized externalism holds true. Arguments in favor of it, like those put forward by Kornblith (1980, 2007), have been underestimated, in my opinion. However, I do not attempt a reappraisal here. Instead, I try an utterly different strategy.

By *radical externalism* concerning artifactual words, I mean the following two theses:

- (a) Members of an artifactual word’s extension share a common nature, i.e., a set of necessary features,
- (b) Possession of such features determines the word’s extension independently of whether the linguistic community is aware of them (ignorance) or can accurately describe them (error).

There is some vagueness in these theses, due to the term *nature*. If it is taken to mean something like *essence*, then (a) is unnecessarily strong. Externalism is not committed to that. However, under another reading to be explained shortly, I will defend both theses as phrased above.

Here is my strategy. First, I argue that the words of all languages, even though they are unlikely to occur to anyone as primary instances of artifacts, *are* in fact prototypical artifacts and the kind of all words is a prototypical artifactual kind. Second, since, in most cases, it is a determinate matter which uttered sounds and inscriptions count as words (as opposed to, say, mere noises such as grunts and hiccups), and it can hardly be supposed that some count as words for one reason, some for another, words are likely to have a common nature. However, even though they are most familiar to us, and most easily produced by us, their metaphysics is still very much disputed among philosophers. Since philosophers are as competent speakers as any, it is uncontentious that the nature of words is unknown to some - in fact, to most, if not all - competent speakers. Conditions (a) and (b) above are therefore satisfied for a particular artifactual word, namely *word*.

I also tend to endorse David Kaplan's *common currency conception* of words, without claiming to *know* that it is correct.³ The gist of Kaplan's view, which stands opposed to a Platonic conception of words as abstract forms, is that a necessary condition for two inscriptions or utterances to be *of* the same particular word - any word, be it a proper name such as *David*, or a noun, such as *color* - is for them to have a common ancestry, in a suitably defined sense. This can be put in the form of a principle - the Principle of Common Ancestry: *Two utterances or inscriptions belong to the same word only if they have some common ancestor*. Without amounting to anything like an essence of words in general, the fact that each one of them obeys this principle is a significant trait of their common nature.

³ Kaplan's conception is set forth in his (1990) paper. Hawthorne and Lepore criticise it in theirs (2011). (Kaplan 2012) is a response to that paper.

What is most important is that a corresponding condition clearly holds for any two specimens to belong to the same biological species. I will show that such a structural condition is precisely what is needed for the main arguments for externalism to carry through in the case of species words. It is debatable that species essentialism makes much sense. But Twin Earth thought experiments do not depend on essences. In order to prove that what is known to competent speakers does not determine membership in a natural species, all they have to show is that at least one case is imaginable where two organisms have exactly the same traits, which are known to all competent speakers, and yet do not belong to the same species. This is the case with, e.g., tigers and Twin Earth tigers, precisely because, *ex hypothesi*, they have no common ancestry. Neither do Kripke's arguments for externalism depend on essences.

In order to complete my defense of externalism concerning artifactual words in general, I only have to show that the metaphysics of *all* artifacts obeys something like the Principle of Common Ancestry. In order to show this, I draw on the works by Paul Bloom and Jerrold Levinson, who have defended some version of the Principle, albeit using different terminology. In the following sections, I start to present my argument.

Words as prototypical artifacts

By any reasonable standard, the words of all languages, both natural and formal, belong to the category of prototypical artifacts. They are produced by humans and, unlike, for example, homes and shelters, which many kinds of animals are also able to build, *only* by

humans, either directly or indirectly (e.g., by means of speech synthesizers).⁴ Unlike a large number of artifacts, such as paths, villages, and cities, which are mostly produced by humans not intentionally, words are almost invariably produced *intentionally*.⁵ Unlike some artifacts that are intentionally produced but not intended, such as pollution, scraps, and footprints,⁶ words are almost always *intended*.⁷ Unlike some borderline artifacts such as *objets trouvés*, and stones used as doorstops, which are not produced by humans, words are almost always the product of conscious and purposeful activity.

Dan Sperber characterizes prototypical artifacts as follows: “Prototypical artifacts are middle-sized, spatially and temporally continuous material objects” (Sperber 2007: 125). Whisky, drugs, plastic, etc. are not spatially and temporally continuous. Cities and the DNA of GMOs are not middle-sized. Multiplication tables, institutions of all kinds, possibly money itself, are abstract or at least not invariably material objects. On the other hand, written words - inscriptions - are middle-sized, spatially continuous material objects. If they are not continuous, e.g., when some fonts are used, they can easily be made continuous, with no kind of loss.

Utterances are temporally continuous acoustic events. Words in a sign language are corporeal events. Now, of course an event is not, properly speaking, an *object*. But I wonder if Sperber really means to exclude all kinds of music, cinema, performances, not to

⁴ See, e.g., (Gould 2007) for a vast array of animal artefacts. Most of what is in this section applies both to *word types* and to *word tokens*. The distinction type/token itself, in the case of words, has been questioned by Kaplan, as I explain shortly. For the time being, however, this does not matter much.

⁵ See Thomasson (2007).

⁶ See Thomasson (2007).

⁷ Instances of unintended words are rare. Kaplan: “It seems to me that cases in which one utters a word other than the one intended must be exotic indeed” (1990: 105).

mention poetry, audio books, and the rest, from the typical artifacts. Note that we directly perceive all words by means of our senses - we see, hear, even touch them (e.g., if they are Brailled).

Not all artifacts have proper functions to discharge. There are breeds of dogs that owe their existence to human intervention, and are in this sense artificial, even though they have neither a function nor a proper function.⁸ Dishes of all kinds have no specific function, except that they are all for eating. We would be hard put to find the function of artworks and I am not even sure one could *use* them.⁹ In so far as they have no specific function or use, one could take these to be atypical artifacts (even though I wonder if one could think of anything more clearly artifactual than a work of art). But, in any case, words are not like that: they have a very clear function, in so far as they are meant to be used as means of communication and are mostly irreplaceable in this function. Needless to say, words are by far the most widespread artifacts on Earth.¹⁰

A basic distinction has sometimes been made concerning the kind of dependence artifacts have on our thoughts and intentions. Amy Thomasson distinguishes dependence of origin from dependence of continuing existence and properties (1999, 2007). A knife, for example, owes its origin to a designer and a factory but the rest of its existence is

⁸ I am using “proper function” in the sense of Ruth Millikan’s “direct proper function”, as some function that past members of a kind successfully performed, and such that *because of* that functioning other members of the kind were produced. See (Millikan, 1993: 13-14).

⁹ Kant famously held that what is proper to artworks is that they lack both function and purpose.

¹⁰ It must be mentioned that Sperber hesitates to include words among typical artifacts: “Is a multiplication table an artifact, in spite of being an abstract object? Is a word?” (2007: 125). But he seems to take it for granted that words are abstract. I shall come back shortly to this particular conception of words as abstract forms.

independent of them. Money, on the other hand, depends for its very existence on the continuing attitude of an indefinitely large number of people. To which side of the divide do words belong? To both, as they depend on the thoughts and intentions of the speakers of their respective languages both for their origin and for their continuing existence.

I shall only mention in passing that the whole point of distinguishing natural entities from artifacts metaphysically must have something to do with the contrast between nature and culture - i.e., between what could exist even if mankind had never come into existence and what owes its existence to human minds, intentions, and activities. If the contrast makes any sense at all, there is little doubt that language is the paragon of all that falls on the side of culture.

The nature of words

In the debate on artifacts and externalism, the metaphysical notion of *nature* looms large. What is generally meant is something like Locke's *real essence*. As far as natural substances and species are concerned, it is clear that their natures can be known to none, or almost none, of the speakers in a linguistic community. In fact, most natures are normally unknown until the community reaches a fairly advanced stage in scientific development. It then follows that an individual speaker, or even the totality of speakers as a whole, can be competent in the use of a natural-kind word even if nothing much is known concerning the conditions for belonging to its extension. This is enough to show that requirement (b), in the definition of externalism in general, is satisfied for natural kind

words, if requirement (a) is. It is generally agreed that natural kinds have a common nature, in the sense of a set of necessary features for belonging to them.

As to artifactual words, some philosophers claim that this is not so. First, artifacts have no nature that can be hidden.¹¹ Since artifacts are made by us, we - perhaps not individually, but rather as the linguistic community taken as a whole, in which experts are bound to exist for each kind of artifact - must know what they are, i.e., their function, their use, how they are manufactured, etc.. Moreover if, in the case of artifacts, *nature* means more or less what it does in the case of natural kinds, then how can artifacts be possessed of a nature if the specimens of most artifacts are made of different materials (think of, e.g., spoons), have different shapes and work according to different physical principles (e.g., telephones), and even have different proper functions (e.g., aspirin before and after 1950, when it started being used to prevent blood-clotting).¹²

Since artifacts have no hidden nature, speakers competent in the use of an artifactual word must grasp what it takes to fall within its extension - such conditions being contained in the meaning of the word, which they know *ex hypothesi*. Words like *spoon*, *telephone*, and *aspirin* are like *bachelor* on this score. Much as a competent speaker of English knows that a bachelor is an unmarried man, so must she know that a spoon is an instrument with a certain shape and function and ... Thus, neither condition (a) nor condition (b) in the definition of externalism are satisfied in the case of artifactual words.

¹¹ "I believe ... that there is no such underlying nature of pencils, nor is there a presumption of such a nature. What makes something a pencil are superficial characteristics such as a certain form and function. There is nothing underlying about these features." (Schwartz 1978: 571) See also (Schwartz 1977, "Introduction."), (Schwartz 1980), (Schwartz 1983).

¹² For this kind of argument, which is fairly frequent in the literature, see, e.g., Marconi (2013).

That was the main argument against generalized externalism. I shall now show that the argument fails. Note, first of all, that the notion of nature, as used here, is far from clear. If it is assumed that most natural kinds have a nature, much as chemical elements have atomic numbers and a natural phenomenon like heat is the motion of molecules - i.e., if it is assumed that their nature is, or is related to, their *essence* - this is likely to be false. Species, which loom large in Kripke's and Putnam's arguments for externalism, don't have essences according to present-day biologists.

In a pre Darwinian age, species essentialism made sense. Such essentialism, however, is out of step with contemporary evolutionary theory. Evolutionary theory ... tells us that a number of forces conspire against the existence of a trait in all and only the members of a species. (Ereshefsky 2001: sec. 2.1).¹³

Because it varies considerably even within the same species, not even DNA is of much use in this respect. Kripke's and Putnam's arguments, which are quite convincing, cannot therefore rely on such a simpleminded notion of nature. The notion they use must be distinct from that of essence. Now, whatever it is, it has not been shown that artifacts lack it. In fact, they do have their own nature, as I now proceed to show.

I begin with words. Whether or not words have essences, they surely have nothing comparable to either DNA or atomic numbers. But it is quite likely that they do have a nature, in the sense that necessary features exist for being a word (as opposed. e.g., to a mere noise). A few distinguished philosophers are busy discussing what it is and of course

¹³ That species do not have essences is cited by Richard Grandy as "a complication of the standard story", i.e., "the explanation of how our biological terms refer (independently of the descriptions we may associate with the term)" (Grandy 2007: 23). I will show, to the contrary, that it is no complication at all.

their discussion makes good sense.¹⁴ The very fact that the discussion is still going on is proof enough that the nature of words in general is not yet known, or not generally known.

In his seminal paper “Words” (1990), David Kaplan contrasts two main conceptions of the metaphysics of words, the *orthographic conception* and the *stage-continuant model*, which is the one he favors. I shall present the outline of Kaplan’s views here, since it will prove very useful when I consider artifacts other than words.

The orthographic conception is the conventional token/type theory, according to which words are abstract objects, types, exemplified by utterances and inscriptions, which are their tokens. Types are identified as strings of letters corresponding to sounds.

“Expressions of the language consist of strings of atoms called ‘letters’, certain strings form words.” (98)¹⁵ Meanings, and semantic properties in general, are not appealed to in order to identify words. It is worth quoting a comment by Kaplan on the Platonic character of this conception:

It seems to me in many ways that this is a sort of updated version of the Platonic notion of abstract form. The eternal, unchanging Platonic forms (shapes, perhaps) are the types, and their physical embodiments, which *reflect* these abstract forms, are the tokens. (98).

¹⁴ For scholarly references to the sparse literature on the topic, see (Hawthorne & Lepore 2011). See also (Sainsbury to appear).

¹⁵ Among those who uphold this view, Hawthorne & Lepore quote Davidson (1979: 90); Haack: “[expressions are] either a pattern which similar tokens exemplify, or a class of similar tokens” (Haack 1978: 75); Hugly and Sayward: “expressions ... can be construed as classes of perceptible particulars similar in some physical respect to given perceptible particulars.” (Hugly and Sayward 1981 :184); Gillon: “An expression is a phonic or graphic form: the former has acoustic properties and the latter spatial ones” (Gillon 2004: 162), and (Lyons 1977: 18).

The view that Kaplan himself upholds is the *stage-continuant model* or the *common currency conception*.¹⁶ Let us begin with how Kaplan envisages the creation and the transmission of a word like *Hesperus*.

I have a story about how the word 'Hesperus' came to us. The story is surely incorrect ... but it gives the flavor of my views. I imagine that at some point some Babylonian looked up in the sky one evening and said (in Babylonian) "Oh, there's a beauty. Let's call it ---", and then he introduced the name. What he did was to create a word. He created a word as a name, a tag, for this beautiful heavenly body. He then passed that word on to other people through inscriptions and utterances. Those people passed that word on to others and so on. [...] As it went through different communities, the way this word was pronounced and written changed in very dramatic ways, through whatever processes account for dialectal variation. The presupposition of these processes of change are the principles of continuity in accordance with which a changing word retains its identity. [...] Changes in pronunciation and spelling need not suggest the notion of replacement of one word by another, which then takes up the task in the manner of a relay race. Rather, we can use the notion of a single entity undergoing change. (100-101).

The "principles of continuity" Kaplan is appealing to here can be stated concisely as a single principle:

Principle of Common Ancestry: *Two utterances or inscriptions belong to the same word only if they have some common ancestor - where an utterance or inscription is an ancestor*

¹⁶ This conception owes much to the picture presented by Kripke in *Naming and Necessity* of how a name originates and is circulated within the linguistic community. A few years before Kaplan, Ruth Millikan had given a unified theory about language and biological categories that is reminiscent of that conception: "what makes tokens of a word ... tokens of the *same* word ... is, in the first instance, *history*, not form or function" (Millikan 1984: 72–3).

*of another if whoever uttered or wrote the latter intended to repeat the former or some intermediate utterance or inscription that was similarly intended as a repetition of it.*¹⁷

Even though Kaplan does not put much emphasis on the artifactuality of words, it is only to be expected that the intentions of the maker have to be taken into account in order to determine which artifact she produces.¹⁸

The difference in sound or shape or spelling of any two utterances or inscriptions can be just about as great as you would like it to be and yet they can be of the same word (e.g., *color/colour, centre/center*), provided the intentions of their users are appropriately related. The contrast with the orthographic conception is stark.

¹⁷ This principle is not to be found in (Kaplan 1990) as such, but I take it to be implicit, e.g., in the following passage: “The identification of a word uttered or inscribed with one heard or read is not a matter of resemblance between the two physical embodiments (the two utterances, the two inscriptions, or the one utterance and one inscription). Rather it is a matter of intrapersonal continuity, a matter of intention: Was it *repetition*? We depend heavily on resemblance between utterances and inscriptions [...] in order to divine these critical intentions. If it sounds like “duck”, it probably is “duck”. But we also take account of accent and idiolect and all the usual clues to intention. It is the latter that decides the matter.” (Kaplan 1990: 104). Also “This notion of repetition is central to my conception”, (104). (Kaplan 2011) states the principle thus: “What makes two utterances utterances of the same word is that they descend from a common ancestor” (509). In this paper, Kaplan also advances a closely related principle, which might be called the *Principle of the Authority of the Speaker*: in order to establish what words exactly were uttered or written, “Ask what the speaker would say of his or her own performance”. Kaplan contrasts it with another principle that was put forward by Hawthorne and Lepore (2011: 463) - “*Tolerance**: Performance p is of a word w only if p meets relevant *local* performance standards on w”. I shall come back to the relation between the Principle of Common Ancestry and the Authority of the Speaker.

¹⁸ There is nothing in the orthographic conception that depends on words being artifacts. Strings of sounds and marks as such could be produced by other animals besides humans, or even by chance, as far as the orthographic conception is concerned. On the other hand, once intentions are taken to be crucial in identifying words, as on Kaplan’s conception, it becomes clear that words must be human artifacts.

Note that, *normally*, i.e., if no misunderstanding occurs, the histories of two words that originated in distinct events stay distinct, in the sense that they have no utterance or inscription in common. In particular, names that originated in distinct baptism ceremonies are distinct. Suppose that two distinct persons were named *David*. Clearly, their baptisms are distinct events, in which their names originate. Since the origins are distinct, the names are distinct. Thus we have *two* names *David*. It is incorrect to say that David Kaplan and David Israel, e.g., share the same name. They have distinct names.¹⁹ By the same token, if an object such as Venus is baptized twice, in two distinct baptism ceremonies, as *Hesperus*, it has two distinct names that sound the same and are spelled the same, and even have the same referent and yet are distinct. They are two *phonographs*, in Kaplan's terminology.

The model emerging from all this is the *stage-continuant model*. A word is a four-dimensional continuant with various utterances or inscriptions as its stages: "...utterances and inscriptions [i.e. the actual concrete sounds and figures] are *stages* of words, which are *continuants* made up of these interpersonal stages along with ... *intrapersonal stages*" (98).²⁰ A particular utterance or inscription of a word *w* thus turns out to be a spatial-temporal part of *w*: *w* is a fusion of its spatial-temporal parts or "stages".

¹⁹ They have the same *generic* name, though. I shall not consider here the notion of generic name.

²⁰ As a matter of fact, even though his terminology suggests the adoption of a four-dimensionalist metaphysics, which takes things to be space-time worms or, at any rate, things that do not change but only have temporal parts, Kaplan disavows any such adoption. "This was certainly not what I had in mind. In fact, my paper emphasises the notion of change for words, especially changes in spelling and pronunciation." (Kaplan 2012: 508). It is crucial to Kaplan's conception that some of the stages of a word are mental stages, when the word is stored in memory.

Kaplan's conception is subtle and rich in interesting consequences but further details are not needed for our purposes.²¹ He is clearly aiming at establishing the metaphysics, i.e., the nature, of words. The main tenet of his conception is the Principle of Common Ancestry. It is to be noted that this principle gives us nothing like a notion of *essence* for words, the reason being that an essence for any kind of entity consists in some property or other that is common to all and only the individual members of that kind, whereas the Principle of Common Ancestry only sets a necessary condition for *pairs* of utterances and inscriptions to belong to the same word. (*Some* relations produce interesting properties. For example, from an equivalence relation, such as *being parallel* for lines, one can define, by abstraction, the notion of *direction*, and then the property of having a definite direction. However, the relation of *having a common ancestor* is definitely *not* an equivalence relation.)²² Even so, the Principle amounts to a substantial requirement concerning the nature of words in general.

It is important to realize that being intentionally related in the manner specified above is a *necessary*, not a *sufficient* condition for two utterances or inscriptions to belong to the same word. All sorts of changes, in meaning as well as in reference, might intervene in between. For instance, *incense*, in present day English, is certainly related to the Latin word *incensum*, in so far as an uninterrupted chain exists from users of the latter to present day users of the former, all the proper intentions being in place. In this sense, therefore, they are the same word. However, as they have different meanings, for

²¹ I myself have tried to draw some consequences of it that bear on Kripke's puzzles about belief, in

²² It is easy enough to give examples, involving misunderstanding of various kinds, of three utterances of proper names, *a*, *b*, and *c*, such that *a* and *b* have a common ancestor as well as *b* and *c*, even though *a* and *c* have none. This can happen, e.g., when two common currency names are taken to be one by some speaker and then linked and stored together in a single location. See (Kaplan 1990: 109).

whatever reason, there also is a sense in which they are *not* the same word. As another example, it is debatable whether the name *Madagascar*, as used by some of Marco Polo's informants to refer to a region on the African mainland, is the same word as *our Madagascar* referring to the great African island.²³

I stressed above that words are artifacts, and prototypical ones at that. However, there also is a sense in which they are entirely natural objects, as Kaplan himself points out: "Common currency names (and other common currency words) are not abstract constructions, they are *natural* objects" [my emphasis] (116). There is no contradiction here, as there is no reason to suppose that natural entities and artifacts belong to disjoint realms.²⁴ There is a substantial reason why words are best thought of as natural entities.

We saw above that the *Principle of Common Ancestry* holds for words in general - if Kaplan's conception is on the right track. (Note that nothing in the argument I am presenting depends on Kaplan's conception being exactly right. For the argument to go through, the mere possibility that it is approximately correct concerning the nature of words is quite sufficient.) The same structural principle holds for all biological species, which can, but need not, be taken as the fusion of their spatial-temporal parts, i.e., their specimens, much as words are the fusion of all their utterances and inscriptions and all of their intrapersonal stages.

²³ ...

²⁴ It might be thought that whether artifacts and natural kinds are disjoint depends entirely on how one defines the former. For instance, if we follow Risto Hilpinen (2004) in characterizing an artifact as "an object that has been intentionally made or produced for a certain purpose", then of course artifacts and natural kinds are disjoint, by definition. However, we would be hard put to deny that canine breeds are entirely natural, even though they were intentionally originated by breeders. Concerning generic names, Kaplan writes: "Generic names are the genera, or species, of our individual common currency names" (Kaplan 1990: 108). A few pages later, he adds that generic names are "naturalistic objects. They live in the world, not in Plato's heaven. They are cultural artifacts, created by us, transmitted by us, stored in us." (1990: 111)

Principle of Common Ancestry for Species: *For two individual organisms to belong to the same species it is a necessary condition that they share some ancestors.*

Here, *ancestor* is to be understood in its ordinary, biological, sense. Of course, having ancestors in common is a necessary, not a sufficient condition for belonging to the same species, as shown by the fact that we belong to a different species than monkeys, even though some of our ancestors are also theirs. This falls far short of giving anything like the essence of biological species in general, for the same reasons specified above - namely, it gives no property that is necessarily common to all and only specimens of a species, and only sets a necessary condition for *pairs* of specimens to belong to the same species.²⁵ It is also perfectly compatible with all sorts of variations in size, shape, behavior, and even DNA, occurring within the same species. Still, it is a condition that tells us something quite important concerning the nature of species.^{26 27}

²⁵ In view of the fact that all living organisms on Earth are likely to come from the same primeval cells, it might look as though the relation of having a common ancestry is transitive in general. However, instances of non-transitivity can be concocted resorting to science fiction.

²⁶ Nowhere does Kaplan explicitly say that common currency names and words in general are species. However, I believe this comes pretty close to what he has in mind. For one thing, he points out that the Platonic, pre-Darwinian, conception of species stands opposed to the naturalistic, Darwinian, conception much as the orthographic conception of words stands opposed to his own, common currency, conception: "I recently read a book about Darwin in which it was said that an enormous amount of evidence for evolutionary ideas was already available when Darwin was working. One of the things that stopped people from putting it all together was this Platonic idea of the fixed, eternal, and unchanging form setting the limits of variation for the shadowy objects of the sensible world. They were carried away from the thought that there could be natural kinds which went through the dramatic transmutations claimed by evolutionary theory. As I said earlier, I think of my conception as being naturalistic, as owing more to the theory of evolution than to algebra" (1990: 100, ft 9). Also, he explicitly says that *generic names* are species (see the previous footnote). There is nothing in the same vein, though, concerning the common currency names themselves in his 1990 paper.

It is important to realize that the Principle of Common Ancestry both for words and for species is independent of the stage-continuant conception. Perhaps, even the type/token conception can accommodate the intuition that historical-relational features are crucial for an individual to belong to a particular word or species. The Principle of Common Ancestry stands opposed only to the idea that what determines membership in a word or species are overt properties like form, sound, and physical appearance - i.e., that an animal looking just like a tiger cannot fail to be a tiger.

Note that the Principle of Common Ancestry for species is sufficient to validate the arguments given by Kripke and Putnam for externalism in the case of natural kind words. I only consider here the Twin Earth thought experiment. Suppose that, on Twin Earth, a species of animals exists, each specimen of which is molecule for molecule indistinguishable from some of our tigers. Therefore, even their DNA is the same. Would they be tigers? Of course not since, as can be assumed, they have no common ancestor.

The corresponding argument goes through in the case of nouns referring to any one of those particular artifacts that are the words of any language, natural or artificial. Suppose that on Twin Earth a word exists that is spelled exactly as our word *tiger* and is pronounced exactly the same. Is it the same word as our *tiger*? If Kaplan's conception is

²⁷ To repeat, for the overall argument in favour of externalism to carry through, no robust notion of nature, or essence, of a kind, either natural or artifactual, is needed, as distinct from the set of necessary conditions for membership in it. The robust notion of nature is what Kit Fine is after in his (1994). Fine points out that, e.g. everyone necessarily belongs to the singleton of which one is the only member, but this is no part of one's own nature. On the other hand, any necessary condition for membership of an individual in a kind, that competent speakers might be unaware of, is quite sufficient for externalism. Even less, necessary conditions for two individuals to belong to the same kind are sufficient.

on the right track and the Principle of Common Ancestry holds for words, it is not - unless some linguistic exchange took place between Earth and Twin Earth, and those words have a common origin.

But even if Kaplan's conception is not on the right track, the two words must differ as to their referents, because there are no tigers on Twin Earth, for the reason given above. If sameness of reference is a necessary condition for being the same word, this shows that our *tiger* and their *tiger* are not the same word. What holds for *tiger* holds for all words referring to biological species and, of course, for proper names referring either to Earthlings or to Twin Earthlings. What about those Twin Earth words that coincide with some English words in spelling, pronunciation, and also reference? Suppose that, by some fantastic coincidence, a remote Indonesian tribe has a word that is pronounced like *Sun* and also refers to the Sun. Would we say that it is the same word? I think we would say that it is just a curious coincidence, unless it can be proved that the tribe had some contact in the past with English speakers. This, of course, confirms that the Principle of Common Ancestry is on the right track.

Let us take stock. I claimed that words are prototypical artifacts. It is also apparent that, whether or not they have an essence, words have an objective nature, i.e., that necessary conditions exist for being a word. Since philosophers are generally competent speakers and are still debating what their nature is, it cannot be claimed that every competent speaker as such knows what it takes to belong to the extension of such an artifactual word as *word*. (Also, note that ordinary speakers are in the dark not only as to the nature of words in general, but also as to the nature of particular words. Is it necessary, for instance,

that any particular word has the reference it does? No ordinary speaker knows.) Thus the main argument against externalism fails, at least for this particular artifactual kind - words.

Other artifacts and their nature

Words are artifacts. Collectively, they form a species of sorts. What about other artifacts? Before considering whether any general principle can be given, comparable to the *Principle of Common Ancestry* and encompassing all artifacts, let us see if the story told by Kaplan, concerning the creation and transmission of a word like *Hesperus*, can be repeated, *mutatis mutandis*, for other artifacts.

Here is a story concerning that ancient implement for writing, the stylus. The story is certainly incorrect but it gives the flavor of my views. I imagine that at some point some Egyptian scribe thought "Hieroglyphs could be drawn on wax-covered tablets more easily by using something like this ---, rather than the twigs we have been using so far". He managed to have the instrument he had in mind made for him by some craftsman, after explaining what exactly he intended as to the shape, the material to be used and so on. What he did, with the help of the craftsman, was to create an artifact. The craftsman, even though he was illiterate and did not understand much about the function of the artifact and how to use it, realized that he could sell copies of it to other scribes. So he made copies which went around and were sold to other scribes, who passed them on to other craftsmen to copy and so on and so forth. As it went through different communities - I am repeating here Kaplan's words, quoted above - the ways this instrument was made and perhaps also used changed in very dramatic ways, through whatever processes account for this sort of

variation. The presupposition for these processes of change are the principles of continuity in accordance with which a changing instrument retains its identity. ... Changes in shape and use need not suggest the notion of replacement of one instrument by another, which then takes up the task in the manner of a relay race. Rather, we can use the notion of a single entity undergoing change.

The principles of continuity involved here amount to this: if a craftsman intends to make a specimen of the same artifact as the one he takes as a model, then, if all goes well, he makes a specimen of the same artifact, whether or not he knows anything about its function, its use, the name given to it by other speakers, and even if he makes some significant changes, either unwittingly or on purpose, e.g. in order to make it more efficient or cheaper. It must be borne in mind that *repetition*, which is as important for artifacts as it is for words, requires very little knowledge and understanding on the part of those doing it, as shown by children, who can repeat any word at a very early age, long before they show any tendency to philosophize and to pore over the nature of words. The same holds for other artifacts. Note that a craftsman making an artifact of any given kind - e.g., a stylus - need not even be aware that a kind already exists, or will exist, over and above the specimen he is working on and, possibly, the one he takes as his model.²⁸

The conception of artifacts in general that is closest in spirit to the one I defend here is Paul Bloom's. Bloom generalizes to all artifacts an idea put forward by Jerry Levinson concerning artworks: something is a member of the kind artwork if it was successfully

²⁸ Thomasson (2007) maintains that a substantive conception of an artifact kind K must be involved in the intentional production of an artifact of that kind. My little story concerning the origin of the stylus seems to go against her claim.

created with the intention that it should belong to that kind.²⁹ In general, “We construe the extension of artifact kind X to be those entities that have been successfully created with the intention that they belong to the same kind as current and previous Xs.” (Bloom, 1996: 10).

As Bloom points out, this is not meant as a definition of the kind word “X”. Take for instance the kind chairs. It would not do to define chairs as being those objects that are successfully created with the intention that they be chairs, if only because “chair” occurs on both sides of the “definition”. By the same token, the characterization above does not give the essence of chairs.

This remark is to be compared with something Kripke says concerning his own views about the reference of proper names. He says he does not mean to give a set of necessary and sufficient conditions that will work for a term like *reference* (Kripke 1980: 93). “Such conditions would be very complicated, but what is true is that it’s in virtue of our connection with other speakers in the community, going back to the referent himself, that we refer to a certain man.” (94) Now - and this is the crucial point - “[w]hen the name is ‘passed from link to link’, the receiver of the name must, I think, intend when he learns it to use it with the same reference as the man from whom he heard it.” (96) He adds: “Notice that the preceding outline hardly eliminates the notion of reference; on the contrary, it takes the notion of intending to use the same reference as a given.” (97)

If the intention to make *something like* the artifact one takes as a model is a necessary condition for the two products to belong to the same artifactual species - I use the term

²⁹ See Levinson (1979), (1989), (1993).

species here on purpose, of course - then a *Principle of Common Ancestry for Artifacts* holds in general. Once again, it does not amount to a sufficient condition. A craftsman might intend to make a stylus only a bit different from its model, that can leave marks not only on wax-covered tablets but also on other surfaces, and the product of his work might end up being classified by the linguistic community under a different name - e.g., *ballpoint pen*. Another craftsman might intend to make a caravel and, for lack of wood, end up being the inventor of the sloop. And so on.³⁰

How much change in function, shape, material, working principles, etc., is allowed (or required) for the name of an artifact to be kept (or changed) is completely unpredictable. Different linguistic communities have different policies. For instance, the difference between a blender and a hand processor has been taken by the English speaking community to be conspicuous enough to require a change of name, whereas the Italian speaking community has kept the former name *frullatore* (only adding the qualifier phrase *a immersione*).³¹ It is nonsense, of course, to suppose that the English policy is better than the Italian one, or vice versa. There is no fact of the matter concerning how an artifact

³⁰ To see that the relation of having a common ancestry for artefacts is not transitive, consider an old fashioned telephone, a smartphone and a computer. The first and the second have a common ancestor, as well as the second and the third. But the first and the third do not.

³¹ The example is taken from (Marconi 2013). I simply assume that Marconi is right in holding that the intersection between the kind of hand processors and that of blenders is empty - i.e., that no hand processor is also a blender. As another example, in some Mediterranean cuisines pita bread can be either stuffed or topped with all sorts of vegetables and meat without the name of the resulting dish changing in the least: "In Palestinian, Lebanese, Israeli, Egyptian and Syrian cuisine, almost every savoury dish can be eaten in or on a pita, from falafel, lamb or chicken shawarma, kebab, omelettes such as shakshoula (eggs and tomatoes), hummus and other mezes" (*Wikipedia*, "Pita"). In Italian cuisine, on the contrary, *pizza* (the word is clearly related to "pita" - it might even be the same word, on Kaplan's conception) is clearly to be distinguished from *calzone*, which is made of exactly the same ingredients stuffed inside the bread, instead of topping it. As a further example, consider the armchair. The English classify it as a chair - if the composition of the word is to be taken seriously. The French do not, as *fauteuils* are definitely not chairs.

ought to be named. Sometimes, a change in name matches no change whatever in the thing: it is conceivable that the same firm producing aspirin might change its name into, e.g., *cardiolin*, in order to better advertise the beneficial effects it has on the heart, without changing the chemical composition. In this case, it would be true that aspirin *is* cardiolin. A hand processor, on the other hand, is definitely *not* a blender.

The unpredictability of these variations and their effects on how artifacts are classified, e.g. by what names, parallels that concerning organisms. How conspicuous can variations in DNA, shape, color, behavior, etc. be without affecting membership in the same species as one's ancestors? Not being a biologist myself, I have no firm opinion, but I suspect that in drawing the boundaries between species many factors have to be taken into account and weighted against one another. Ample room is left, therefore, for the biologists' educated but not completely constrained judgment.³²

How are we to think of the kinds of artifacts - chairs, pencils, blenders, aspirin etc.? Once again, I suggest that biological species offer us a useful model. Thus, the kind of chairs, for example, might be conceived of as a four-dimensional continuant with the individual chairs as its stages, i.e. as the fusion of the archipelago of its specimens. As to the semantics of their names, are there thought experiments of the Putnam kind available to show that it is externalist in kind? Let us see.

I pointed out above that even without resorting to the notion of essence for tigers, Putnam's main argument for the externalist semantics of the word *tiger* holds since, there

³² I understand that the contemporary notion of biological species differs from the traditional one, which was defined by interbreeding. Even the notion of a planet admits of no simple definition.

being no ancestors common to our tigers and to twin-tigers, twin-tigers are not tigers, even though they are physically indistinguishable from them. The Principle of Common Ancestry is the only assumption needed here.

Now, let us consider any artifact we like. The Pearsall Mousetrap will do. (The Pearsall Mousetrap is an artifact, the function of which can easily be guessed, invented by one Ralph E. Pearsall. It is carefully described by a 1968 U.S. patent.) Suppose that Twin Earth is even more similar to Earth than Putnam makes it in so far as, not only *is* twin-water H₂O but also, for every Pearsall mousetrap existing on Earth, an object exists on Twin Earth that is physically indistinguishable from it. Would the latter be a Pearsall mousetrap? We are entitled to assume that Mr. Pearsall and his invention are completely unknown on Twin Earth.

Two cases are to be distinguished: *the Pearsall Mousetrap* could be either a definite description or a name. It might be thought that, in both cases, the obvious answer is that the Twin Earth artifact *is* a Pearsall mousetrap. Is it not obvious that the same artifact can be independently invented in different places by different inventors?³³

³³ As a matter of fact, independent inventions of the same artefact are much less common than one might suppose. Apparently, the alphabet was invented only once in the history of mankind. See J.Diamond, *Guns, Germs, and Steel*. The same might hold true even for spaghetti. At this point, it is appropriate to point out that the general case of artefacts resembles that of words more closely than is generally realised. At first sight, artefacts and words look very different. For one thing, one might suppose that most artefacts are due to inventors who can be identified relatively easily. It is indeed true that we actually know the names of those who invented the ball-point pen, the zip, the safety razor, aspirin, the blender - not to mention the computer and every other patented invention. On the other hand, we would hard put to find almost any inventor of a word. The vast majority of words come from other words by slight and hardly perceptible variations. Is this not a significant difference between words and other artefacts? Not really. We are overly impressed, I think, by the huge number of new patented inventions that have come into being in the last century or so. The vast majority of artefacts come from other artefacts by slight and hardly perceptible variations. Almost everything

Suppose that *the Pearsall Mousetrap* is a definite description. Then it cannot denote the Twin Earth artifact which, for one thing, was not invented by Ralph E. Pearsall - or, in any case, not by *our* Ralph E. Pearsall - and, for another, is not a mousetrap and must have a different proper function than our Pearsall Mousetrap, since there are no mice on Twin Earth, the Twin Earth rodents indistinguishable from our mice not being mice.

Now suppose that *the Pearsall Mousetrap* is the name of a kind of artifact. Do the Twin Earth artifacts belong to the same kind as our Pearsall Mousetraps? They are physically indistinguishable, to be sure. But this is not sufficient.³⁴ Even forgoing the difference in their proper functions, a further difference is that, while our Pearsall Mousetraps are all related in so far as they are “descendants” of the first mousetrap produced by Ralph E. Pearsall, the Twin Earth artifacts are not so related. In order to see that this militates against conflating the Twin Earth artifactual kind with ours, consider a second example.

It cannot be doubted that, when the blender, but not yet the hand processor, existed, the Italian translation of the English word *blender* was *frullatore*. Then the hand processor was invented, which Italians called *frullatore a immersione*. Different communities are entirely at liberty to adopt different naming policies concerning any object - artifacts among others. Now suppose that, on Twin Earth, someone completely unaware of what goes on on Earth invents and manufactures an electric contraption, with a rotating blade, for chopping and

that pertains to food, clothing, agriculture, and traditional ways of life has a long history, the origin of which is lost in a distant past.

³⁴ I understand that the rights legally granted to the author of a patented artefact do not cover artefacts even physically indistinguishable but independently originated. This seems to confirm the point made in the main text.

mixing food in bowls, large goblets, pans, etc., that is physically indistinguishable from an ordinary hand processor. Is it a hand processor? To see that the answer must be in the negative, suppose it is a hand processor. Then it is also what Italians call *a frullatore a immersione*, since this is the Italian name for the same kind of artifact. Then - *frullatori a immersione* being *frullatori*, albeit of a special kind - it is also a *frullatore*. Then it is also a blender, since *blender* and *frullatore* translate each other and it cannot be supposed that that translation became incorrect when the hand processor was invented and so named by the English speaking community. But this is absurd, since a hand processor is *not* a blender - as we have assumed. (More about this later on.)

This shows, I take it, that the physical constitution by itself is insufficient to settle whether an artifact belongs to any given artifactual kind. It is possible that, more generally, physical constitution by itself is insufficient to settle how anything ought to be named.³⁵ What else is needed? Artifacts or, at least, prototypical artifacts are intentionally produced by humans. The *intentions* of their makers are all important and this is precisely what makes the *Principle of Common Ancestry for Artifacts* hold true.

This might be the place to comment on some differences between words and artifacts in general. Kaplan has a principle for words which might be called the Principle of the Authority of the Speaker: in order to establish what words exactly were uttered or written, “Ask what the speaker would say of his or her own performance”. In other words, as far as the identity of words is concerned, it is only the speaker’s intentions that count. The linguistic community has no say in these matters and no authority to force the speaker to

³⁵ This issue is clearly related to the Wittgensteinian puzzles discussed by Kripke in his (1982) paper. See, in particular, his example of the chair found at the base of the Eiffel Tower (19). I cannot dwell on this vast topic here.

abide by prevalent standards. This is not to say that things always go smoothly. *The speaker himself* might harbor more than one intention in uttering a word. As Kripke convincingly showed, cases exist in which a speaker uses an extant name, but neither intends to give it a new referent nor merely repeats it with whatever referent it may already have. In these cases, the speaker intends to use the name to refer to a particular referent that he somehow has in mind. If, as may happen, that particular referent is not the same as the name's original one, it is not quite determined what exactly happens. The name, particularly if the speaker sets a precedent for others, might change its referent in due time. Or - this is another possibility - it might be substituted by a new name with a new referent, retaining the appearance of the former.³⁶

In the case of artifacts, something similar is not unlikely to happen. The intentions of craftsmen and engineers always count in establishing what they make or design. However, as a matter of course they harbor both the intention of making a new specimen of an extant artifact and that of improving on the prevalent design. It is up to others - the sales department, the users, the linguistic community as a whole - to decide whether the innovations are sufficiently significant to conclude that a new kind of artifact, deserving a new name, has come into existence. We can imagine that this is what happened with the hand processor. Possibly, its inventor's intention was only to produce yet another blender with minor changes. However, the linguistic community as a whole, possibly influenced by the manufacturer's sales department, decided otherwise: in the end, that artifact comes to be known as the hand processor, which is something other than the blender. In this case,

³⁶ "I find it plausible that a diachronic account of the evolution of language is likely to suggest that what was originally a mere speaker's reference may, if it becomes habitual in a community, evolve into a semantic reference. And this consideration may be *one* of the factors needed to clear up some puzzles in the theory of reference" (Kripke 1977: 271). This issue is discussed at length in my

both the maker's intentions and those of the linguistic community count equally, even though the latter prevail in the long run.

Are there cases in which the maker's intentions count for nothing from the start and only those of the community matter? Artworks, it seems to me, are a case in point. Children and amateurs often intend to make artworks and fail. Why they fail is not quite clear, but it is possible that our current notion of the artistic has a lot in common with the notion of what is fashionable.³⁷

Let us briefly go back to the hand processor, the pita, the armchair and the different policies of different linguistic communities. Let us consider, for example, a particular armchair and ask: Is it a chair? It can be supposed that most English speakers would answer that it is - an *armchair* being a chair - whereas no French competent speaker is likely to assent - as there is a sharp divide, in French, between *fauteuils* and *chaises*. This is only natural if the speakers' intentions and intuitions are to count in identifying artifactual kinds, and it is conceivable that intuitions are partly moulded by linguistic usage. We have here a kind of linguistic relativity, albeit of a benign kind. In itself, this is no more surprising than the fact that the question whether a particular action by a particular person is a legal

³⁷ Levinson (2007) takes a nearly opposite view: "As regards artworks, ..., it is far from clear that any such non-purely-historical conception of arthood is in play, or that there is any minimal success condition of a substantive sort on the making involved. Why is that so? It helps to recall what, in the post-Duchampian era, are two salient features of art-making in contrast to standard artefact-making. First, one can more or less simply *declare* something a work of art, and it becomes such. Or at least one can, in certain contexts, or with certain standing, do so. Second, *anything*, whatever its material constitution, cultural, category, or ontological status, can become, or can be incorporated into, a work of art." (79)

crime might receive different answers in different countries.³⁸ Of course, this also raises the problem of the metaphysical reality of artifactual kinds, but we are only interested here in the semantics of artifactual words and we can put it aside.

To conclude, since competent speakers usually (but not invariably) have some idea concerning the function and possibly even the shape of an artifact, but are normally unaware of the intentions of its maker (not to mention those of the linguistic community as a whole), they are in the same position with respect to artifacts as they are concerning natural kinds. Thought experiments of the Kripke and Putnam kind can always be run concerning artifactual names. I conclude that externalism holds true for the latter as much as for the names of natural kinds.³⁹

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³⁸ "According to the ordinary use of language, an action *a* of a certain person is called *legal crime* if the penal law of the country in which that person lives places the description of a kind of action to which *a* belongs in the list of crimes" (Carnap 2000: 308). See also the half-serious remark attributed to Arnold Schoenberg who, in his Hollywood exile, was once asked by a journalist if it was true that he played ping-pong. "No!", replied the composer, "When I play ping-pong, it is table tennis. But when my wife plays table tennis, then it is ping-pong."

³⁹

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