

# An Ontology of Words

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**ABSTRACT.** Words are indispensable linguistic tools for beings like us. However, there is not much philosophical work done about what words really are. In this paper, I develop a new ontology for words. I argue that a) words are abstract artifacts that are created to fulfil various kinds of purposes, and b) words are abstract in the sense that they are not located in space but they have a beginning and may have an end in time given that certain conditions are met. What follows from this two-fold argument is that words, from an ontological point of view, are more like musical works, fictional characters or computer programs, than numbers or sets.

Even though we, philosophers, cannot do without words, embarrassingly little attention is paid to the ontology of words. More specifically, there are only a few works in the metaphysics literature dedicated explicitly to words.<sup>1</sup> I will argue that the previous accounts have serious shortcomings. They either fail to do justice to the artifactual nature of words, or to recognize them as abstract entities. In this paper, I develop an account of words that is motivated by these two basic ideas. I argue that words are abstract artifacts that are created for a purpose (or a set of purposes). They are artifacts since they are created by an individual or a linguistic community at a time. They are abstract since, although they are in time, they lack spatial location. Therefore, it is crucial for us not to confuse them with other abstracta, like numbers or sets. I suggest that words are better understood in analogy with other abstract artifacts such as musical and literary works, and software.<sup>2</sup>

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<sup>1</sup> See for example, Kaplan (1990; 2011), Katz (2000), Wetzel (2009), and the following papers mostly as responses to Kaplan's paper: McCulloch (1991), Hawthorne&Lepore (2011), Bromberger (2011).

<sup>2</sup> For similar accounts about these objects see Levinson (1980), Thomasson (1999), Irmak (2012).

The main goal of this paper is to lay out an ontological account of words; to answer the question what words are. The paper consists of four main sections. Section one briefly reviews the literature on the metaphysics of words and attempts to extract some criteria for a successful account of words. Section two articulates and defends the thesis that words are abstract artifacts. Relying on the ontological framework defended in section two, section three explores further ontological questions concerning words, such as “How are words individuated?” or “What makes two instances instances of the same word?”. Section four responds to some of the objections levelled against theories of abstract artifacts in general, compares the present theory against mostly its Platonist competitors in the literature, and brings out its advantages over its rivals.

Throughout this paper two controversial assumptions are made for which I will not directly argue. The first is an existential assumption, namely, that there are words. I don’t think words are fundamental entities, in any interesting sense of “fundamental”. Yet this should not prevent us taking words seriously from an ontological point of view.

The second assumption is a methodological one. I take it that our linguistic and non-linguistic practices are our main guides for understanding and constructing an ontological theory of words. This point fits very well with one of the central claims I argue for in this paper, namely the claim that words are creations of beings with linguistic abilities; that words are artifacts. So, it is only natural to look at our linguistic and non-linguistic practices, if we are to understand what words are.

Before going any further, I would like to clarify the sense in which I use the word *word*. The term *word* is polysemous, and sometimes it is very difficult to distinguish different uses associated with the word. Quite often when we use *word* we intend to refer to one of its particular instances, its tokens. Word tokens are typically thought of as physical media in virtue of which words are

communicated. A token can be an inscription; a kind of physical entity, an utterance; a particular kind of sound event; or a sequence of signs in a sign language. In other words, word tokens come in various forms. However, words have abstract instances as well. Think of the following line:

A rose is a rose is a rose.

How many words are there in this line? If we were to count words themselves, not their instances, the answer is three: *rose*, *is*, and *a*. If we were to count the concrete instances we see on a piece of paper, the answer is eight. The line, however, can be taken as an abstract type; a sequence of shapes. It seems that there is a sense in which the line, on this reading too, contains eight words. Some philosophers claim that the number eight cannot be of word types nor word tokens; as according to the former sense there are only three words, whereas words in the latter sense are concrete particulars and thus cannot be properly applied here. Linda Wetzel, for instance, argues that the proper answer to this question must employ the notion of occurrence (Wetzel 2009). There is, therefore, a further distinction between types, tokens, and occurrences:

It is that between a thing, or type of thing, and an occurrence of it—where an occurrence is not necessarily a token (Wetzel 2014).

On this view, then, the line itself has three word types and eight occurrences. Once we acknowledge, however, that words can have abstract as well as concrete instances, the need to postulate a different kind of object, an occurrence, vanishes.<sup>3</sup> The line, both as an inscription on a piece of paper and as a sequence of shapes, consists of the same number of word instances: eight (concrete or abstract) instances of the words *rose*, *is*, and *a*. In this paper, I mainly focus on words themselves, not their instances. However, I will address some of the ontological issues concerning word instances as they become relevant to the metaphysics of words as abstract artifacts.

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<sup>3</sup> This is not to claim that Wetzel's account of types could do without the notion of occurrence. For further discussion on occurrence see Wetzel (2009).

Linguists distinguish four senses of *word*. The orthographic word is the written form, which has a space at each end. The phonological word is understood in terms of sound, which behaves as a unit of pronunciation. The grammatical (or morphological) word is an uninterrupted and movable form that can be identified on the basis of its morphological structure. The lexical (or semantic) word is based on meaning. It's a unit of a given lexicon with identifiable meaning or function (Murphy, 2010). One immediate question is whether these four senses of *word* correspond to the same linguistic unit. The linguistic evidence suggests a negative answer. It seems clear that these senses of *word* do not map onto the same linguistic unit, and require their own criteria of identity (Dixon&Aikhenvald, 34-35). Take the orthographic word, for instance. It is clear that the same word might have different written forms; i.e. 'color' and 'colour', or different words might have the same spelling; i.e. 'bank' (financial institution) and 'bank' (edge of a river). Variations in spelling and the existence of homographs imply that taking the orthographic form as a unit of ontological analysis leads us to miss a crucial sense of *word*, which is prevalent in linguistics and in our everyday language use. I do not argue, however, that we should ignore the orthographic word altogether. The point, rather, is that I am interested in whether there is a more general sense of the word *word* that could capture the above claims about word identity. A similar argument can be made for the phonological word. There are words that have different pronunciations within the same language; i.e. /'ʃɛdʒu:l/ and /'skɛdʒu:l/ for the word *schedule*, and there are different words with the same phonological form, namely homophones; e.g. *two* and *too*. Semantic word creates similar problems, as there are words with the same meaning, synonyms, and words with multiple meanings, polysemies. The grammatical word is useful to distinguish, for example, words from bound morphemes, such as prefixes or suffixes. However, there is more to words, such as meaning, than their position in phrases or their morphological structure. It seems

clear that these different senses of *word* pick out different entities and each deserves their own ontological analysis. Although I think all these senses of *word* present interesting questions for the ontology of words in general, there are reasons to look for a more comprehensive sense of the word, if any, which will lead to a metaphysically fruitful and theoretically more interesting investigation into the nature of words.

I think there is a familiar and metaphysically more interesting sense of *word* that is sensitive to the concerns I raise above, which is based on the following simple observation. Take the word *red*.<sup>4</sup> Consider various instances of the word *red*: For example;

‘red’

‘RED’

‘**red**’

‘*red*’

‘reδ’

/red/ (the sound event).

Even though these instances are very different in terms of their physical and metaphysical outlook (the first five are physical entities of a particular kind—perhaps digital entities as you see them on your computer screen, whereas the last one is an event), there is a sense of *word* in which they all have something in common; they are different instances of the same word, *red*. The sense

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<sup>4</sup> I use the following notation to distinguish words from various word instances: Strings of letters *a*) in italics, i.e. *red*, stand for words themselves, *b*) in single quotes, i.e. ‘red’, stand for an inscription, a written instance, *c*) in slashes, i.e. /red/, stand for an utterance of the word.

of *word* I have in mind is quite similar to what linguists call *lexeme*, which is often defined as an abstract linguistic unit that “is entered in dictionaries as the fundamental element in the lexicon of a language (Matthews, 26)”. The category of lexemes, as defined and studied in lexical semantics, is useful in understanding the sense of *word* I am interested here. In what follows, unless stated otherwise, I will use the word *word* in this particular sense.<sup>5</sup>

### **1. On words**

Words, according to some metaphysical views in the literature, are eternal abstract types, which have concrete instances such as utterances and inscriptions. This view is usually attributed to C.S. Peirce. Peirce’s account of types is quite complicated.<sup>6</sup> Whether Peirce himself endorsed such a view is an interesting, yet different question. Its discussion would distract us from the main question I am interested in here. So instead I will examine relatively new versions of the same idea, which is carefully defended by Jerrold J. Katz (2000) and Linda Wetzel (2009). Katz’s and Wetzel’s accounts are quite similar: they both defend a Platonist theory of types for words, and sentences; they agree that the relationship between words and their utterances and inscriptions is the relationship of types and tokens; they both reject the idea that there could be temporal abstracta. However, their Platonisms diverge when it comes to the questions of how words, sentences, or language in general change, and whether types have spatiotemporal properties. Below, I will mainly discuss Wetzel’s account and continue with Katz’s view where it differs from Wetzel’s in a way that is important for our purpose here.

Wetzel provides a very comprehensive defense of Platonism about words in her book. Her project is more concerned with defending the existence of Platonist types against nominalist

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<sup>5</sup> This is also the sense in which Kaplan (1990), Wetzel (2009), Hawthorne & Lepore (2011) use the word in their work.

<sup>6</sup> See Hilpinen (2012) for Peirce’s theory of types and tokens.

arguments. I will not get into her rigorous defense of the existence of types. Instead, I will briefly present her Platonist picture of words.

Wetzel argues that words are Platonist types. They can be thought of as a particular kind of universal. The main difference between types and properties (which fall under the general category of universals) is that types, unlike properties, are repeatable *objects* (Wetzel, xiii). The relation between types and their tokens is an instantiation relation. The instantiation relation resists further analysis, and hence is to be taken as primitive. Even though tokens have unique spatiotemporal location, types do not. That does not mean that words as types, on her account, lack spatiotemporal properties. A word type acquires some of its properties, including some spatiotemporal properties, in virtue of the properties that some of its tokens have, and *vice versa* (Wetzel, 121). Perhaps we can think of what Wetzel argues for here as a view according to which there is a distinction between derivative and non-derivative properties. Following a distinction that is introduced by Lynne Baker (2002, 36-37) one can say that a certain word type, say *red*, has a property of being spelled as ‘red’ and a property of being pronounced as /red/ derivatively (in virtue of the characterizations of its tokens), and its meaning non-derivatively.<sup>7</sup> Whereas the word token has the property of being spelled as ‘red’ non-derivatively, it has its meaning, for instance, only derivatively (in virtue of its being a token of the word type *red*). On this reading, one can say that words as types have spatiotemporal properties derivatively, in virtue of their concrete tokens, but they lack non-derivative spatiotemporal properties.<sup>8</sup> It is in this sense that types in general, and word types in particular, are eternal abstract entities; they lack non-derivative spatiotemporal

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<sup>7</sup> Wollheim (1968, 67) defends a similar view where he uses what he calls “transmitted properties” to distinguish types from universals.

<sup>8</sup> One can find various passages in Wetzel’s work, such as the following one, that seem to support this reading: “Many, perhaps all, of a type’s spatiotemporal properties are had in virtue of spatiotemporal properties of its tokens. The species has a range in virtue of where its members are located, but it is not itself “at” that location (Wetzel, 151).”

properties. Hence, a word cannot be created, but only discovered and introduced to a language by creating its first concrete token.

Katz emphasizes the same contrast between discovery of types and creation of their first tokens. His paradigm examples are sentences and languages as a whole, however his account applies to words as well as other linguistic entities. According to Katz, word types are eternal abstract entities that can only be discovered and thus their history can only be a history of their discovery not of creation (Katz, 168-170). On the other hand, creation in the strict sense takes place when a linguistic community creates the first token of a word.

From an ontological point of view, what follows from both Wetzel and Katz's views is that when a new word is added to a language, it simply is a creation of a new token, but not a creation of a new word type. The word type is an abstract eternal entity that can only be discovered by, perhaps, matching the word type with a particular token and putting it into public circulation. This conclusion seems to conflict with our intuition that words and other linguistic entities are artifacts, intentional products of our own creation. Wetzel disagrees. Even though words seem like our own inventions, this does not mean that they are not eternal Platonist objects:

Moreover, words are artifacts, tools for communication. (...). Linguistic tokens are artifacts, our own inventions, and so in a sense are the types and the theory we have of them. This is not to say that linguistic types are not eternal abstract objects (Wetzel, 123).

I think there is a serious tension in this account. It seems clear that words as types cannot be both artifacts and eternal entities. I will argue below that one of the two must go.

David Kaplan challenges this Platonist account of words in his "Words" (1990). He argues that words cannot be understood on the basis of the type/token distinction (97-98). He provides two



simple arguments to show that words are not eternal types. *i.* Words evolve: There are variations of spelling and pronunciation in time and place. Words as types, however, cannot change as they lack spatiotemporal location (100).<sup>9</sup> *ii.* Words are created. Words are worldly objects, which are products of human (inter)action. Words as types, however, cannot be created since they are eternal (111). I think Kaplan is absolutely right. In my own proposal below, I will take his claims that words change and words are created as two indispensable desiderata (henceforth, *Change* and *Creation*) for any successful ontology of words.

According to Kaplan words are continuants that are made up of what he calls “stages”, which are nothing but inscriptions and utterances (98). In a recent paper, Hawthorne and Lepore (2011) argue that the best way to understand the metaphysics of Kaplan’s model is to take words as four-dimensional concrete objects, since they are composed of interpersonal concrete stages (utterances and inscriptions) that exist at different times (Lepore & Hawthorne, 4).<sup>10</sup>

My own proposal, which I call the *artifactual theory of words*, is different than Wetzel’s, Katz’s and Kaplan’s models in two important ways: I construct an ontology of words *a*) by emphasizing the artifactual nature of words, and *b*) by clarifying what kind of abstract objects words are. As for *a*, I argue that words are artifacts that are created to fulfill various kinds of purposes; regarding *b*, I argue that words are abstract in the sense that they are not located in space but they have a beginning and may have an end in time given that certain conditions are met. Therefore, they are not Platonist entities (i.e. eternal, non-spatiotemporal entities), or types, (if types lack spatiotemporal location<sup>11</sup>). What follows from *a* and *b* is that words belong to the same

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<sup>9</sup> More on this point below. See also Levinson (1980) for an argument against Platonism about musical works on the same grounds.

<sup>10</sup> Kaplan, in response to Hawthorne and Lepore, claims that this metaphysical reading is not intended in his paper (Kaplan 2011).

<sup>11</sup> Lee Walters (2013), for example, argues that there are created types. In particular, he defends an ontological view that takes repeatable artworks as created types. “The claim that repeatable

ontological category as musical works, works of literature, and software. To put it differently, words are, ontologically speaking, more like musical and literary works and less like numbers or sets.

## **2. Words as abstract artifacts**

Artifactual theory of words is based on two separate metaphysical claims about words: Words are artifacts and words are abstract. In this section, I elaborate and defend both theses.

### **2.1 Words as artifacts**

Artifacts are products of intentional human activity. Given that words are linguistic tools created for communication, it seems natural to conclude that words are artifacts. However natural this claim may sound, it still needs a justification as it is not exactly clear whether or how intention plays the kind of role it typically plays in paradigmatic examples of artifact creation.<sup>12</sup> What distinguishes random products of human action and artifacts is that the existence of the latter partly depends on the intentions of their creators, whereas no such dependence is required for the former. Specifically, the existence and some of the characteristics of an artifact depend on its creator's intention to make an object of an artifactual kind to serve some purpose (Hilpinen 2011). When we create new words, we usually do it to accomplish a certain purpose. There may be, for example, pragmatic purposes to create a new word to stand for a complex property just to make it easier to talk about it. Or there may be some aesthetic purpose to enhance the poetic effect. It's much more common for new words to have a referential purpose. A referential purpose of

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artworks are types which are created constitutes the barebones of a type-creationist treatment of repeatable artworks, a treatment that can be fleshed out in numerous ways (Walters, 462).” I take it that Walters defends the same view for linguistic entities, including words, which makes our views quite similar, at least in terms of the above criteria: *Creation* and *Change*. My hesitance to classify words as types is mostly due to the common (and perhaps mistaken) perception in metaphysics that types are necessarily eternal abstract entities (more on this below).

<sup>12</sup> I am grateful to an anonymous reviewer for pressing me on this point.

introducing a new word to a language is being able to refer to (or to name) an object, a property, a relation, or an event.

Some words are coined by identifiable authors with explicit intentions to create a new word with a specific purpose. For example, in 1891 George Johnstone Stoney introduced the term *electron* to the language of physics:

In 1891 Stoney proposed, "[I]t will be convenient to call [elementary charges] electrons." (Arabatzis, 70-71).

It would be a mistake, however, to conclude that all words are created in exactly the same way. A significant number of words existing in English language are introduced via derivation: addition of affixes (such as suffixes and prefixes) to an existing word (the base) and changing its meaning and/or word class (from an adjective to a noun, from a noun to a verb, etc.). The rules of word formation in English allow creating new words using derivational affixes. It is difficult, if not impossible, to identify the authors of these words. New words, quite typically, are added to the lexicon by a collective effort rather than an effort of a particular individual. This doesn't mean that those words that cannot be traced back to their authors are not artifacts, or even if they are, they are artifacts to a lesser degree. Although some artifacts have identifiable authors, this is not true of a great many number of artifacts. The chair I am sitting on is an artifact, but it lacks any identifiable author. Most artifacts nowadays are products of co-ordinated actions of various groups, where it is often impossible to identify the individuals in those groups or their exact contribution to the production of such artifacts. The possibility that we cannot identify their creators doesn't change the fact that they are all artifacts. Although the existence of artifacts requires that they have makers, it is not required that those makers are identifiable.

Similarly, creation of new words does not require explicitly stated intentions. In fact, it is very difficult to find examples, such as *electron*, where the new word is introduced with an explicitly specified referential purpose. Words that are added to a language via derivation, borrowing; adopting a word from a different language, or compounding; conjoining two existing words to form a new word, seem to be products of different kinds and levels of intentional human activity. Quite often the intention is implicit rather than explicit, collective rather than individual, and can be inferred from successful coordination directed by the purpose of communication. No matter what exact form and content the intention takes, its existence is a precondition for any successful attempt to introduce new words. If, let's say, without any intention or a purpose to create a new word Donald draws some shapes on a piece of paper or produces some sounds which accidentally happen to follow the rules of word formation in English, he surely fails to create a new word. The reason for his failure is not only that it was not even an attempt to coin a new word, but even if it was, it failed to fulfil further conditions of success for the introduction of new words. Among these conditions the relevant linguistic community's acceptance of it as a new word is of primary importance. It is possible that Donald's random gabbling is accidentally picked up by someone and mistakenly circulated through the community as a proposal to introduce a new word. If successful, this new attempt is also the result of some form of intentionality. This is evident by the fact that communication, which is the primary goal of natural languages, requires mutual understanding and a form of joint commitment that can be tacit rather than explicit. Such mutual understanding and joint commitment for communication imply a certain form of collective intentionality, the kind of intentionality that is required for the creation and survival of new words. In other words, some form of shared group intention and action take part in the preconditions of

successful communication. Therefore, words, not merely random sequences of sounds or symbols, are purposeful, intentional entities; they are artifacts.

## ***2.2 Words as temporal abstracta***

It is very difficult to draw a principled distinction between concrete and abstract objects. I will not attempt to provide criterion for classifying things into abstracta.<sup>13</sup> However, it is clear from what I have already argued that any such criterion (assuming that there is one<sup>14</sup>) cannot include non-temporality. Words, like other abstract artifacts such as musical works, are products of our own creation.<sup>15</sup> Therefore, unlike non-temporal abstract objects, such as numbers, abstract artifacts are contingent objects. It is possible that Beethoven's Symphony No. 7 or the word *youthquake* could have failed to exist.

Objects under the category of temporal abstracta share important metaphysical properties, however, this doesn't mean that there are no significant differences among them. Some temporal abstracta are not artifacts. Impure sets are often classified as abstract yet temporal entities; that is their existence begins at the time their concrete urelements come into being (Rosen 2001). They are, on this view, temporal entities but not artifacts.

Abstract artifacts are not homogenous in terms of their metaphysical properties either. Some abstract artifacts, for instance, are repeatable: they can have various instances in different places at the same time. Words, musical works, computer programs, and literary works are repeatable entities. Some abstract artifacts, on the other hand, are not repeatable. On some fictional realist views, for instance, fictional characters are characterized as individuals, and thus, unlike the literary works they appear in, they are not repeatable entities. The descriptions of fictional

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<sup>13</sup> For a very good survey of various proposals see Rosen (2001).

<sup>14</sup> See Lewis (1986) for a discussion on what he calls the Way of Negation.

<sup>15</sup> I defended this view in my Irmak (2012). Others have defended a similar view for musical works and fictional entities. See, for example, Levinson (1980), and Thomasson (1999).

characters are repeatable in different physical copies of the same fictional work, or in different literary works that feature the very same characters (Thomasson 1999, 37). However, fictional characters themselves are not repeatable. Having these distinctions in mind, I submit that words are abstract artifacts, in the sense that they are temporal, nonspatial, repeatable, contingent entities that exist in virtue of certain purposeful human activities. In what follows, I discuss the first two properties that I have not yet justified ascribing to words, namely temporality and nonspatiality.

Words are part of languages. When created, they are added to an existing language. The English word *red* and the French word *rouge* are not the same words. The word *red* was coined for certain purposes to English and since then it has existed as a part of the English language. It is evident from our ordinary linguistic practices that we think that the word *red* did not exist before the birth of English language. It seems utterly implausible to claim that the word *red* existed during the Big Bang. Similarly, a quick look at linguistics reveals that this simple observation is true of the scientific study on words as well. Here is a sample of a few passages from linguistics literature mostly concerning the ways in which new words are added to a language:

As the examples presented in this section will show, there are various other ways to create new words. [...] Blends are created from nonmorphemic parts of two already existing items. Well known examples of blends include *brunch* from breakfast and lunch (Aranof *et al.*, 138-141).

Words may be created outright to fit some purpose (Fromkin *et al.*, 2014, 351).

Clipping: The new word is created by shortening an existing word –  
for example, *fax* from *facsimile* or *flu* from *influenza*

(Murphy, 16-17).

Such examples can easily be multiplied but I think they clearly demonstrate that words are taken to be creations of linguistic communities in the scientific discourse on words. Philosophers might disagree on how much weight such evidence should carry; however, given the methodology I follow here, it follows that any successful ontology of words must take them to be created entities. Therefore, I conclude that words do not exist prior to the creative acts of their authors. It follows that words are temporal entities. They are temporal in the sense that there is a time at which they are brought into existence. Yet, it seems that they lack spatial location. There is no spatial region where we can reasonably say that the word *red* is located. Most concrete word instances, on the other hand, are located in space. Consider the following question:

**R**      Where is the word red?

**R** is admittedly an odd question, but that's not my point. Rather the point is, **R** is ambiguous in the following way:

**R<sub>1</sub>**      Where is the word instance 'red'?

**R<sub>1</sub>** is a perfectly meaningful question, which can be answered by providing the exact location of the previous word instance 'red' in GPS coordinates.<sup>16</sup>

**R** can also mean the following:

**R<sub>2</sub>**      Where is the word *red*?

I take it to be clear that **R<sub>2</sub>** cannot possibly be answered with an exact or a proximate location, as there is no spatial region where we can reasonably say that the word *red* is located. I conclude that word instances might have spatial locations, however words themselves are not located in space.

Locating words in time allows us to speak about their change through time. I agree with Kaplan that words change. He focuses more on synchronic and diachronic variations in their spelling and

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<sup>16</sup> Note that I have the printed copy in mind here.

pronunciation. Take, for example, the word *color*. The word has two modern (‘color’ and ‘colour’), and apparently eighteen historical different spellings (Hawthorne & Lepore, 5). Similarly, the word *schedule* has different pronunciations in British and American English: /‘ʃɛdju:l/ and /‘skɛdʒu:l/ respectively.

To this, I would like to add that words change by alterations in their meanings. Consider the English word *artificial*. Its meaning used to be “man-made, artful, skillfully constructed”, compared to its contemporary meaning “not natural or real: made, produced, or done to seem like something natural” it seems that the word has changed in a significant way. The kind of change the word *artificial* has gone through is more about the word itself as an abstract object, especially once compared to the kind of changes its typical instances may undergo. As linguistic communities evolve, so does the language itself. Part of the evolution of natural languages is changes in the meanings of words.

### **3. Individuation of Words**

The theoretical framework provided above can guide us in answering further questions about the ontology of words. The question about word identity is one such question. It is crucial, however, to note that there are two separate questions in the vicinity. The first question, which I mainly focus here, concerns the individuation of words themselves as abstract artifacts, not of their instances. The second question is about word instances: What makes two instances instances of the same word? I begin with the first, and move on the second question. But before let me clarify that the particular account defended here is only one of the alternatives for someone who accepts that words are abstract artifacts. That is, the particular account of word identity (both for words and their instances) below is informed by but remains independent of the view that words are abstract artifacts.



Kaplan quickly eliminates form-theoretic answers to the problem of word identity, that is the kind of answers that use orthographic or phonological forms to individuate words. He argues, rightfully, that the same word might have different spellings or pronunciations, or that different words might have the same phonological or orthographic forms (Kaplan, 106). Examples are easy to produce. The word *schedule*, for instance, have two different pronunciations in American and British English respectively: /'skɛdʒu:l/ and /'ʃɛdju:l/. The existence of homophones, different words with the same pronunciation, such as *two* and *too*, and interlingual homophones such as *kou* (Dutch, \ 'kau\, *cold*) and *cow* (English) show that phonological form cannot be a criterion of individuation for words. Similar problems occur when using the orthographic form as a criterion: variations in spelling within a single language, such as *color* and *colour*, the existence of homographs, different words with the same spelling, such as *bear* (n) and *bear* (v), and interlingual homographs such as *angel* (Dutch, / 'aŋəl/, *sting*) and *angel* (English) are examples where the same orthographic form fails as a criterion of word identity. This is not surprising given that the relation between a word and the forms of its spoken or inscribed instances are arbitrary (except perhaps for onomatopoeic words).

There remain at least two more candidates for the individuation of words: meaning and origin. Both alternatives, however, face similar problems. There are different words, for instance, with the same meaning within and across languages. Although perfect or complete synonyms, if any, are very rare, the existence of near synonyms is quite common in natural languages (Lyons, 148). Furthermore, it is clear that words go under semantic change throughout their history, even to the extent that a word may acquire a meaning radically different to its original use. This shows that appealing to word meaning alone produces wrong results both for the synchronic and diachronic individuation of words.

Let's consider the fourth attempt at a criterion of word identity: historical origin. Hawthorne and Lepore (2011, 31) attributes the following view to Mark Richard and Ruth Millikan: words are identical if and only if they have the same originating event (ibid.). Leaving aside their concern that origin, assuming that there is indeed a unique originating event for all words, may not be as informative as one may expect, it is clear that there are distinct words with exactly the same origin. English lexicon contains many doublets, different words that originally come from the same source, following, of course, different paths, dialects, borrowings. For instance, the words *frail* and *fragile* both ultimately originated from the same Latin root *fragilis*. However, the former was borrowed from Old French word *fraile* in mid 14.c, which ultimately originated from the Latin word *fragilis*, whereas the latter was directly borrowed from Latin (*fragilis*) circa 16.c (Oxford English Dictionary). Examples can be multiplied, but it is clear that historical origin fails to provide a successful criterion of word identity.

Even though all the proposals above fail we can salvage an account that preserves and makes use of their virtues. Given the methodology guiding the overall ontological account defended here, it is not surprising that the theory of word identity provided below corresponds to the relevant aspect of the scientific study of languages, namely etymology, the study of word history. On this account words are individuated via their histories:

*History*: Words  $w_1$  and  $w_2$  are identical if and only if they have the same history.

Whether two words have the same history or not is determined by examining the changes they go under, tracing a continuous historical path each word follows, and reaching, if possible, the originating events of their ultimate sources. The kind of changes relevant for this purpose are the changes in their orthographic and phonological forms, and meanings and/or functions. It is in this sense that *History* employs each of the proposals explored above, not as standalone criteria of

word identity but as tools for tracing their history, the evolution of words throughout their careers. Etymology, then, is not merely an empirical investigation concerning the history of words as linguistic units, but also a proper investigation of word identity.

For both the synchronic and diachronic questions of word identity *History* gives us the right answers. Synchronic variations in spelling and pronunciation as in the case of the words *color* and *colour* are rendered insignificant for their identity as they share the same history.

Homophones, homographs, and synonyms are rendered distinct words on this account because their histories are different. In virtue of significant differences in their histories, specifically the particular way and the time they were borrowed from the donor language, doublets are successfully rendered different yet cognate words despite sharing a common root.

Although *History* does considerably well in all the problematic cases described above, it is not free of problems. Perhaps the most important problem is determining how much similarity and difference two words can accommodate in their histories to be identified as the same or distinct. That is, there seems to be no exact criteria as to how much and what kind of similarities two word histories must share to establish their identity. This problem, which is a particular form of the general problem of change, is not in any way unique to the individuation of words. The same problem arises for most ontological accounts of artifacts, if not of all objects. Instead of postulating a metaphysical principle that might provide exact but somewhat arbitrary borders concerning the difficult cases of change, I defer to the scientific study of word histories. It is important to remember that the existence and the nature of words depend to a significant degree on human activities, or so I argued. This does not imply that there are no objective facts about the individuation of words. There are. After all, etymology is a significant part of the scientific investigation of human languages. What it implies, however, is that looking for precise boundaries

for word identity will either result in determinate answers to complicated cases where major revisions are required in our linguistic practices concerning word identity, or in so far as it attempts to respect and even justify such practices it will eventually fail. It must be noted that for the vast majority of cases the problem does not even arise. The concern here is about those cases where the similarities and differences in word histories are not even nearly decisive.

Note that *History* is proposed as a criterion of individuation for words, not word instances. Word instances are dependent entities; they are instances *of* words. A word instance, whether abstract or concrete, is a realization of a word. Concrete word instances, just like words themselves, are artifacts. They are intentional products of their creators. Therefore, whether a given object, or an arrangement of objects, or a sound event is an instance of a word partly depends on how it comes into existence. Think of a certain arrangement of pebbles, call it  $S_h$ , such that it has the following shape:

HELP

Whether  $S_h$  is an instance of the word *help* depends not only on how much it resembles the standard instances of the word, but also how it came into existence. If it exists as a result of some natural phenomena such as waves on a beach, it fails to be an instance of *help*. If, on the other hand, it is put together by someone with the intention of using the word *help*, then it is an instance of that word. Thus, the same arrangement of pebbles, depending on how it is brought into existence, may or may not be an instance of the word. It seems to follow that we cannot identify word instances solely in virtue of their phonological or orthographic forms. There are further reasons why form-theoretic accounts fail. A pair of instances, for example, that share the same exact physical form might be instances of different words. Specifically, the existence of homophones and homographs make it impossible to use form-theoretic account alone for the

identity of word instances. This is as it should be because word instances are not mere strings of inscribed symbols or sound events, they are instances of words.

Like all artifacts, intentionality plays an important role in the individuation of word instances. What makes two performances performances of the same word is partly determined by the intentions of their author. Kaplan thought that this intention is the intention to repeat the same word. On Kaplan's view performances  $p_1$  and  $p_2$  are the performances of the same word  $w$  just in case S intends to repeat  $w$  in both performances (Kaplan, 103-104). This proposal has several problems. As Hawthorne and Lepore argued it is too demanding in the sense that it requires that when we utter a word we intend to repeat the word that we store in our mental vocabulary, which then presumably is traced back to the first time we were introduced to the word (Hawthorne&Lepore, 15). In other words, the problem is that when we use words we don't seem to intend to repeat the word we acquired before. Instead, if there is any intention at all, it is the intention to use the word to communicate. Although I agree with Kaplan that intentionality has an important role to play for the identity of word instances, he was mistaken to insist that it is the speaker's intention to repeat the word. The required intention, which may or may not be explicit in the mind of a speaker, is the intention to use a word. When someone uttered /'ber/ whether that instance is an instance of the word *bear* (an animal) or the verb *bear* (to tolerate) is partly determined by the utterer's intention. However, if instead of uttering /'ber/ he merely grunted, he failed to utter the word. This is true even if his intention was to use the word *bear* (to tolerate). Therefore, intention alone cannot have the constitutive role; some further conditions of success are needed. Hawthorne and Lepore rightly argue that these conditions which constitute the standards of performance are determined by a local language community (Hawthorne & Lepore, 17-19). These local standards of success constrain what counts as a successful performance of a word and

evolve along with the language and the community. Therefore, requiring such standards of success allows semantic, phonological, and orthographic change.

#### **4. *Advantages of artifactual theory of words***

Why should we prefer artifactual theory of words as opposed to its rivals discussed above? First, note that the artifactual theory of words satisfies the desiderata (*Creation* and *Change*) that I have adopted from Kaplan. Platonist models by Wetzel and Katz, on the other hand, fail on *Creation* and it is difficult to see how they can account for *Change*. Let's begin with *Creation*. Even though Wetzel seems to accept that words are linguistic artifacts, it is not clear to me how one can allow creation if they are eternal types the existence of which purportedly does not depend on spatiotemporal beings like us. Notice that the claim is not about word instances. Concrete instances are spatiotemporal entities that are created by linguistic communities or individuals. The source of the tension is Wetzel's claim that words as types are eternal beings. A different, yet closely related, tension is between the way she thinks ontological questions concerning words should be answered, and the basic ontological categories she employs to classify words and similar abstract entities. Some passages make clear that she is following a similar methodology for answering ontological questions about words as I do here. That is, she too emphasizes the importance of basing the ontological theory of words on linguistics and our ordinary linguistic practices. When she argues against the nominalist accounts of words, species, musical works and the like, for instance, she claims that the relevant scientific discourse must be taken seriously (Wetzel, 103). However, if we are indeed trying to construct an ontology based on, and is suitable, for linguistics, then it seems clear from the sample I provided in the previous section that we should accept that words, as well as word instances are created social entities. More precisely, we should accept that words have non-derivative temporal properties, the kind of properties that they

have in virtue of their own intrinsic nature, *not* because of the temporal properties that their instances have non-derivatively. Wetzel does not say how these two crucial claims, words as linguistic artifacts and as eternal abstract entities, are to be compatible. In the absence of such an account it is clear that one of the two has to be abandoned.

Katz does not seem to be moved by such intuitions or our ordinary and scientific understanding of words where they are treated as artifacts. He argues that a distinction between discovery and creation can explain away these intuitions. On Katz's view, there is no history of a word as a type, only the history of a discovery of a word (Katz, 134). What seems to follow is that linguists are wildly mistaken about their characterization of etymology as the study of the history and origins of words. The very idea of 'history of a word' on Katz's view is incoherent. I find this conclusion quite unsettling. I think an ontology of words that does not require such radical revisions on how we think and talk about words should be preferred to the kind of revisionary ontology Katz proposes.

Platonists might respond that even though their view might require some revisions on how we ordinarily think about words, this is next to nothing in terms of the theoretical costs creationist views, such as the one defended here, require. It seems that creationism is only tenable when some of the most intuitive ontological principles are rejected. More specifically, they might argue that abstract objects by their nature are not the kind of objects that can be created. This is so, they might continue, because abstract objects are causally inert. Since creation requires being caused to exist, abstract objects cannot be created. The very idea of creatable abstracta on this view is "simply miraculous" (Cameron 2012), a "metaphysical monstrosity" (Udhir 2012). Call this the argument against creation.<sup>17</sup> Many creationist authors, mostly in the ontology of music, resist this argument by rejecting the causal inefficacy of abstracta. They argue that abstract objects such as

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<sup>17</sup> See Deutsch (1991), Dodd (2000), Udhir (2012).

musical works participate in causal relations in various ways including, but not limited to, being caused to exist.<sup>18</sup> I think creationists need not reject causal inertness of abstracta. There is a different understanding of creation available to creationists that does not require causal interactions between an individual and an abstract entity. This alternative conception of creation is not causal in nature. A possibility of non-causal creation has been briefly considered in the literature but quickly dismissed as being metaphysically mysterious (Uidhir 2012; French and Vickers 2011). The account of non-causal creation, I argue, need not rely on some obscure metaphysical principle but rather on an appropriate notion of ontological dependence. Ontological dependence is a commonplace relation between objects, properties, and state of affairs. For instance, a non-empty set is ontologically dependent on its members, a hole ontologically depends on its host for its existence, a human being to its biological origin, etc. There is a family of ontological dependence relations that are supposed to explain different kinds of dependence relations between the elements of various ontological categories.<sup>19</sup> For simplicity, I will take one of the most general forms of ontological dependence and illustrate how non-causal creation of abstracta is not only a theoretically possible but also a metaphysically respectable view. Existential ontological dependence in its most general form can be expressed in the following way:

(EOD) x cannot exist unless y exists.

The kind of modality at play in (EOD) is not logical, conceptual or nomological, but distinctively metaphysical in nature. (EOD) is admittedly very rough and ready and can be interpreted in various different ways.<sup>20</sup> The right interpretation of (EOD) for the creation of words requires many

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<sup>18</sup> See, for instance, Howell (2002); Trivedi (2008); Walters (2013).

<sup>19</sup> For various surveys and discussions on ontological dependence see Tahko and Lowe (2015), Koslicki (2013).

<sup>20</sup> See Correia (2008) for different interpretations of (EOD).



important metaphysical decisions about the identity and survival conditions for words.<sup>21</sup> Much could be said about those decisions and the reasons behind them. However, given that my purpose here is to show how this metaphysical machinery could explain away the mystery surrounding the creation of abstract artifacts I shall leave that for another occasion.

We can use (EOD) to formulate the existential dependence relation between a word and various kinds of objects and state of affairs. On this view, a particular word  $w$  existentially depends on the existence of various kinds of objects and state of affairs, including the existence of certain linguistic community, its intentional and coordinated activities that associate  $w$  with a certain semantic value, and the creation of certain concrete objects, namely instances of the word at some time  $t$ . Therefore, once all these conditions are satisfied a new word  $w$  is brought into existence.

One might argue that even if we accept this account it does not explain how one gets to create a word; it still sounds like a magic. This is an important worry as some of the classical examples of ontological dependence, i.e. sets ontologically depend on their members, tropes depend on their bearers, etc., do not seem to be cases of creation. Creation of an artifact requires an intentional action; not all human action creates an artifact. Once members of a certain linguistic community with the intention of introducing a new word to a language bring about the conditions that the existence of a word ontologically depends on, they create a new word. Ontological dependence plays a generative role in the creation of abstract artifacts. Note that even though creation on this view is not causal, it still requires certain kind of causal interactions between individuals and

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<sup>21</sup> For instance, if (EOD) expresses a rigid existential dependence then the existence and the identity of a word rigidly depends on particular entities and state of affairs. If, on the other hand, one prefers more coarse-grained conditions of individuation and existence, (EOD) can be taken as a generic existential dependence, where the existence of a word does not depend on any particular object or a state of affairs. See Thomasson (1999), Koslicki (2013), Tahko and Lowe (2015), and Correia (2008) for such decisions and their consequences with respect to different kinds of objects, properties and state of affairs.

events. However, causation takes place in the world of concreta, so the principle of causal inefficacy of abstract objects is not violated.

Things get a little complicated with respect to *Change*, i.e. the idea that words evolve. Although it is difficult to see how eternal entities can change, Wetzel's theory has the resources to account for some change in word types. Since word types, on her view, have spatiotemporal properties (yet no unique spatiotemporal location) derivatively (i.e. in virtue of the properties of their tokens), words can evolve as their tokens acquire or lose some spatiotemporal properties. The problem is that I cannot see how she can explain the kind of change that words themselves seem to undergo, such as changes in word meaning and word history; that is, the kind of change in properties that words seem to have non-derivatively, or intrinsically, if you will. It is not clear to me how Wetzel's view can explain such a change, given that a change in words' non-derivational properties seems to require at least that words themselves are located in time.

Katz argues that his linguistic realism can account for linguistic change. His primary concern is "language change". Even though he does not explicitly address words and how they change, if they change at all, his discussion on language change is instructive. On Katz's view, language change is nothing but a change in the epistemic states of its speakers: More specifically, on Katz's view:

[W]hat happens in "language change" is that the members of a speech community acquire knowledge of a different natural language (or dialect) from the one that they had knowledge of prior to the change. The original competence, *C*, is knowledge of a language (or dialect) *L*, namely, the one with the properties that *C* represents its object as having. The resulting competence, *C'*, is knowledge of the language (or dialect) *L'* —namely, the one with the properties that *C'* represents its object as

having. Hence, what happens in language change is that the members of a community end up with the new competence  $C'$ . But, in virtue of having  $C'$ , they stand in the knowledge of relation to an abstract object  $L'$  different from the abstract object  $L$  to which they stood in the knowledge of relation prior to the change (Katz, 136).

Therefore, according to Katz, language as an eternal type does not change, what changes is some external relation, namely competence or the relation of 'the knowledge of'. By the same token, Katz would argue that "word change" is not a change in words as types, but a change in our relation, use, or knowledge of them. Therefore, assuming that words are individuated partly by their meanings, semantic change, i.e. change in word meaning, is not a change in the word itself, but rather it is a change in our epistemic states. Take the word *meat*, which is one of the common examples of semantic change (more specifically, an example of semantic narrowing/extension). *Meat* in Old English used to mean "food, item of food". Its current meaning, "flesh used as food" is first attested in 13<sup>th</sup> century. Let's call the word, which has the meaning "food"  $meat^1$  and the word with the meaning "flesh used as food"  $meat^2$ . Let's also assume that  $C^1$  and  $C^2$  represent our competences of  $meat^1$  and  $meat^2$  respectively. On Katz's linguistic realism the word *meat* in the Old English, i.e.  $meat^1$ , has not changed. Rather what has changed is our competence: a change from  $C^1$  to  $C^2$ . In other words,  $C^1$  and  $C^2$  are competences of two different words. If this is the case, however, how can we claim that our competence of the word has changed? Competence of which word? It seems clear that  $C^1$  and  $C^2$  are different competences, and thus semantic change reduces to a succession of different competences of different words. This conclusion squares rather badly not only with our ordinary understanding of word change but also with linguistics that focuses on semantic change and etymology.

Perhaps linguistic realist might argue that instead of individuating words via their meanings, we can individuate words with sets of meanings.<sup>22</sup> Then it seems that we can claim that  $C^1$  and  $C^2$  are the competences of the same word *meat*, which is individuated by the set of meanings including members such as “food” and “flesh used as food”. This response does not seem to leave space for semantic change either. The word *meat* does not go through change in its meaning, as the set of meanings it has exists eternally. The competence of the word *meat* does not go through change either, as  $C^1$  and  $C^2$  are competences of the same word. Furthermore, given that sets have their members necessarily, linguistic realists cannot claim that the word *meat*, or any word for that matter, could not have had a different meaning than it actually does, or it could not have more or fewer meanings. The claim that it is metaphysically impossible that the word *meat* has one more or one less meaning than it actually has seems, to put it mildly, quite controversial. Therefore, if we have an ontological account of words, where we can account for the artifactual nature of words and semantic change we have a good reason to choose it over its Platonist competitors.

How does the artifactual theory of words compare with Kaplan’s account of words? I argue that my model, as opposed to Kaplan’s, can account for the idea that there is something shared, something in common among various word instances: the word itself. On my view, it is the abstract and artifactual nature of word itself that explains that a word is to be identified with what is shared among its different instances. We, as the creators of these artifacts, make it such that the ordered symbols ‘red’ and the sound event /red/ are instances of the same word *red*. We should not look for any other metaphysical explanation except for the facts about our linguistic conventions regarding the word *red*. Kaplan’s model, on the other hand, seems to fail to account for this common element, as he takes words to be composed of utterances and inscriptions. On his

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<sup>22</sup> Katz (138) seems to adopt a similar response in his discussion of Bob Hale’s objection to Platonist account of language change (Hale, 49).

view, the word instances ‘red’, ‘RED’, and /red/ are among those that compose the word *red*. Thus, *red* is not some abstract and repeatable entity that is expressed by these various instances, but is a concrete aggregate made up of the concrete instances. It is worth mentioning here that following Hawthorne and Lepore’s reading, Kaplan’s account has odd consequences for words. One example is the following: If words are made up of utterances and inscriptions, then it seems that every time a word is uttered or inscribed, it gets bigger; becomes a larger four-dimensional object. One would think that a mere use of a word does not change its size, if, of course, talking about the size of a word makes any sense at all.

## **5. Conclusion**

I argued that words are abstract artifacts that are created to fulfill various kinds of purposes, and that words are abstract in the sense that they are not located in space but have a beginning and may have an end in time. What follows from these two claims is that words, from an ontological point of view, are more like musical or literary works, than numbers or sets.

I believe my account has a better chance of explaining both our ordinary and our scientific conceptions (the one in linguistics, for example) of words. This is not a surprising result. Given the methodology I followed in this paper, it is only natural to arrive at an ontological account of words that is consistent with ordinary and scientific discourse on words. One of the more important criteria of success for my proposal, then, is its consistency with our linguistic and non-linguistic practices concerning words.

As I explained in the very beginning, this can only be a beginning of a complete ontological account of words. In this paper, my goal is to sketch an account of words that has significant advantages over some of its rivals. Even though the account is far from being complete, it is still able to give us a basic and, hopefully, a robust theoretical ground to answer sophisticated

questions belonging to the ontology of words. Thankfully we have all the words that are necessary for their answers. We only need to put them in the correct order.

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