

Semantic relations of opposition in the construction of arguments.

Relaciones semánticas de oposición
en la construcción de argumentos.

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Abstract

In this paper, we seek to answer the question of what contribution semantic oppositional relations make to the production of argumentative texts. To answer this question, we analysed 100 randomly selected arguments. Our response to this question, which we will present in this article, is as follows: (i) to a large extent, the meaning of some lexical units and other syntactically more complex linguistic constructions is constructed within the text, resulting in new semantic relations of opposition, mainly antonymy and complementarity; (ii) that antonymy and complementarity constitute the semantic relations of opposition most frequently used in the elaboration of argumentative texts in philosophy; (iii) that the use of oppositions indicates that one thesis is being defended in opposition to another or others; and (iv) that oppositions are used for the purpose of expressing aspects related to the conception of the nature of phenomena or entities in the real world.

Keywords: Text. Argument. Semantic relationship. Opposition. Antonymy. Complementarity. Inversion.

Resumen

En este trabajo nos interesa responder a la pregunta sobre cuál es la contribución que hacen las relaciones semánticas de oposición en la producción de textos argumentativos. Con el propósito de responder a esta pregunta se realizó un análisis de 100 argumentos seleccionados aleatoriamente. Como respuesta a esta pregunta y es lo que mostraremos en este artículo es lo siguiente: (i) que en gran medida el significado de algunas unidades léxicas y otras construcciones lingüísticas sintácticamente más complejas se construye en el interior del texto dando como resultado nuevas relaciones semánticas de oposición, principalmente de antonimia y de complementariedad; (ii) que la antonimia y la complementariedad constituyen las relaciones semánticas de oposición más frecuentemente empleadas en la elaboración de textos argumentativos en filosofía; (iii) que el uso de oposiciones señala que se está defendiendo una tesis en oposición a otra u otras; y (iv) que las oposiciones se emplean con el propósito de expresar aspectos relacionados con la concepción que se tiene de la naturaleza de los fenómenos o entidades del mundo real.

Palabras clave: Texto. Argumento. Relación semántica. Oposición. Antonimia. Complementariedad. Inversión.

Introduction

An argument is a type of textual construction that prototypically consists of sentences that form the premises and others that form the conclusion(s), as well as other lexical units or more complex linguistic constructions through which these relationships, traditionally called inferential, are established, although they can also be conceived as those in which the support, justification, guarantee or reason for maintaining an opinion or thesis is expressed. These features of arguments are what make them different from, for example, a narrative, a descriptive text or an explanatory text, among others. In addition to these constitutive properties of arguments, like other types of texts, they are characterised by coherence, cohesion and intentionality.

However, in any type of text we find various semantic relationships at work, such as synonymy, homonymy, hyperonymy, holonymy, among others. This paper aims to answer how semantic relations of opposition cooperate and interact in the production of arguments, in other words, what is the contribution of semantic relations in the production of argumentative texts and, in turn, how does the elaboration of an argumentative text operate in establishing the meaning of the linguistic units or constructions that compose it, so that new semantic relations are established within the text, as well as others that are already more conventionalised. Thus, this work will focus

on the cohesion and coherence achieved through the various relationships between the lexical units that constitute a text. The lexical relationships that interest us here are the so-called *semantic relations of opposition*, among which are antonymy, complementarity and inversion.

The methodology used is both qualitative and quantitative, as the analysis was based on a *corpus* of 100 philosophical texts, making it a study of discourses presented in graphic form and written conception (Koch & Oesterreicher, 2007). These arguments were taken at random from a collection of arguments. It should be noted that most of the examples are translations; however, they represent possibilities for use in the way semantic relationships are expressed in Spanish.

The decision to use 100 arguments was arbitrary. Perhaps the only justification I have is that 100 arguments is not an overwhelming number and serves to indicate at least a trend. In fact, and as a curious fact, initially only 50 arguments had been considered, but given the question of how representative that number would be, it was increased to 100, and what was observed was a constant. Just to give one example, when 50 arguments were studied, antonymy appeared in 47 of 497 case types, representing 9.45674044%, and when there were 100, it appeared in 76 of 886 case types, representing 8.586229811%, a difference of 0.870%. This was repeated for the other cases, and this unexpected result influenced the decision to leave it at 100 arguments. A typical case is when the same pair of terms appears more than once in the same argument, but it is only counted as one case.

In terms of quality, semantic relationships that directly contribute to the development of the argument were taken into account, i.e. the relationships between lexical units that are decisive in expressing the content of the argument. The fundamental criteria taken into account to maintain that they contribute to the argument are as follows: whether the semantic relationship operates to establish coherence, whether the semantic relationship achieves the establishment of the topic, and whether these semantic relationships provide thematic continuity. In addition, other functions performed by semantic relationships in the construction of arguments were considered.

Relationships based on the operation of opposition.

In languages, lexical units and morphosyntactically more complex linguistic constructions have semantic features through which relationships can be established. These relationships are due to the fact that there is some kind of similarity, either in terms of meaning, for example, in synonymy or

polysemy, or in terms of the form of the word or construction, although with a variation in meaning, for example, homophony or homography. Other semantic relationships occur because one term encompasses or implies others due to its meaning, as in the case of holonymy and meronymy or hyponymy and hypernymy. On the other hand, in natural languages there are words such as 'wind' and 'table' that are semantically incompatible, as the meaning of one is not related at all to the meaning of the other. Therefore, these terms have an incompatible relationship, since if we say that an entity is the wind, then we cannot say that the same entity is a table. Consequently, sentences formed with incompatible terms will be contradictory (cf. Palmer, 1976).

This relationship of incompatibility also occurs among co-hyponyms, for example, among *poplar*, *oak*, *pine*, *olive*, *willow*... whose meaning is common to their hypernym *tree*, but they have specific features that allow us to differentiate one type of tree from another. Thus, although both *poplar* and *oak* are *trees*, a tree cannot be both a *poplar* and an *oak*, because their respective defining features are incompatible. "Expressed in terms of extensional sets, we can say that the characteristic feature of the exclusion relationship is that the respective sets have no common members" (Escandell, 2007, p. 71).

However, these differences in meaning are not of great interest in themselves, since it is to be expected that a large vocabulary will contain lexical units with different meanings and therefore incompatible with each other (Palmer, 1976, p. 71). However, the interesting differences are those in which a relationship is established that derives from their semantic opposition. In most languages, not to assert something as compromising as in all languages, there are words that maintain a semantic relationship thanks to an operation of relative opposition in their meaning. In this way, we recognise a certain connection of opposition between *big* and *small*, *male* and *female*, as well as between *buying* and *selling*; however, the relationship between these pairs is not of the same type, which is why different types of opposition have been distinguished (Espinal *et al.* 2014, p. 75-76; Löbner, 2002, pp. 87-88). This operation of opposition between semantic features has given rise to a wide range of semantic relationships, among which the following stand out, according to the classification of Espinal *et al.* (2014) and Croft and Cruse (2004): *antonymy*, *complementarity* and *inversion or reciprocity*.

According to Escandell Vidal, who follows Cruse (2000: § 9.2), *opposition* occurs when the following requirements are met:

Binary nature: Opposition occurs only when there are two mutually exclusive terms: *inside/outside, open/closed*. The opposition relationship is therefore a binary relationship. In this sense, it differs from the cases of incompatibility presented above, as those were established between series of more than two elements.

Inherent nature: In order to speak of opposition, the two terms must be inherently opposed, rather than accidentally, inferentially, contextually or pragmatically opposed. For example, the opposition between *up* and *down* is inherent, since movement along a vertical axis only allows for two possibilities. On the other hand, if I want to plant a tree in my garden and have to choose between a *spring tree* or a *jacaranda*, this does not make these terms opposites, as they are not terms that are essentially opposed. I could have chosen a pine tree, a poplar tree, a tabachín tree, etc.

Patent character: The opposition must be explicitly codified, not implicitly. For example, *yesterday* and *tomorrow* are explicitly opposites because they indicate opposite directions with respect to movement on an axis that has *today* as its starting point, which is why *yesterday* and *tomorrow* are opposites. (Escandell Vidal, 2007, p. 72; Croft and Cruse, 2004, pp. 164-165)

Sîrbu maintains that through syntagmatic analysis, the laws of antonym use in discourse can be established, that is, it is possible to identify what is typical in a given context for two semantically opposite words to appear in discourse, according to one or more distinctive semantic features (Sîrbu, 1979, p. 166). In this regard, Novikov points out that, from a syntagmatic point of view, opposites are defined as words that are characterised by the fact that they can often be found in specific contexts, in which one of their typical textual functions is performed, such as confrontation, comparison, conjunction, among others (Novikov 1973, p. 95; cited by Mettinger, 1994, p. 36). Thus, in line with this line of thought, Mettinger argues that there are contextual-syntagmatic environments that favour the application of opposites and that the most important observation confirmed by the facts is that opposites in texts are in many cases characterised by contiguous arrangement (Mettinger, 1994, pp. 35-47). This explains the tendency or regularity with which opposite terms appear contiguously in specific texts. This fact is evidenced in each of the cases studied in this work.

Finally, it should be noted that for an opposition to take place, a third element is also required to place the terms in a relationship of similarity. For example, the pair *married* and *single* are opposites, but they are similar with respect to the more general concept of *marriage*. The rest of this paper will focus on the way in which these relationships appear and contribute to the development of arguments.

Antonymy.

Antonymy is understood to be when at least two lexical units have meanings that are opposite to each other. They are opposites in the sense that one term negates the meaning of the other or vice versa. However, their meanings can also be illustrated by a scale of age, size, diameter, quality, brightness, difficulty, etc., which is open at both ends (Löbner, 2002, p. 89). According to Lyons (1977, pp. 270-271), binary opposition is one of the fundamental principles governing the structure of languages, with antonymy representing its most obvious manifestation in terms of vocabulary.

Examples of prototypical antonyms are adjectives such as *old/young*, *old/new*, *big/small*, *thick/thin*, *good/bad*, *light/dark*, *easy/difficult*, *alive/dead*, *tall/short*, *long/short*, *wide/narrow*, *little/much*, *full/empty*, *intelligent/stupid*, *expensive/cheap*, *strong/weak*, *slow/fast*, *broad/narrow*, *dirty/clean*, *safe/dangerous*, *sober/drunken*, *smooth/rough*, *happy/cheerful/sad*, *despise/admire*. Antonyms are not limited to adjectives; there are also nouns such as *war/peace*, *love/hate*, *wisdom/ignorance*, *hell/paradise*. Pairs of adverbs are antonyms: *everything/nothing*, *always/never*, *often/rarely*, *everywhere/nowhere*, *never/always*. The prepositions 'with' and 'without' are also antonyms. There are also some pairs of antonymous verbs: *to like/to dislike*, *to love/to hate*, or *to encourage/to discourage*.

Authors such as Gutiérrez Ordóñez and Lyons distinguish genuine antonyms, which are those that negate the meaning of a positive term, so that, for example, the antonym of *running* is not *walking* or *standing still*, but *not running*; however, Spanish has not yet developed a specialised term to express this opposition, as it has done in other cases (Gutiérrez Ordóñez 1996. pp.131-132; Lyons, 1977, p. 275). A rich source that Spanish has found for producing antonymy is derivational morphology, especially through prefixation. Thus, we find genuine antonyms in the following pairs: *gnostic/agnostic*, *rhythmic/arrhythmic*, *to please/to displease*, *to fold/to unfold*, *known/unknown*, *interested/uninterested*, *sympathy/antipathy*, *accessible/inaccessible*, *to comply/to fail to comply*,

logical/illogical, happy/unhappy, mortal/immortal, pleasant/unpleasant, adequate/inadequate, probable/improbable, rational/irrational, marked/unmarked, hope/despair, among many others. However, these authors warn that we must be careful because, due to certain processes that occur within a linguistic system, these prefixes do not always negate the meaning of the base word. For example, *indifferent* is not the negation of *different*, *inform* is not the opposite of *form*, *destroy* is not the opposite of *chop*, and *dismiss* is not the opposite of *ask*, among other cases that we can find in Spanish.

Antonymy can originate from a directional opposition, a phenomenon also known as reversals (Palmer, 1976, p. 82; Cruse, 1987, pp. 223–226). This type of relationship can be observed in pairs such as the following: *front/back*, *right/left*, *up/down*, *above/below*, *go up/go down*, *ascend/descend*, *move forward/move backward*, *advance/delay*, *take/bring*, and *north/south*. There are also antonyms that are temporally opposed, such as *before/after*, *late/early*, *from/to*, *today/yesterday/tomorrow*, *last/first*, and *always/never*, among others.

Cruse (1987, pp. 227–239) also points out the existence of opposite events, exemplified in pairs such as *tying/untying*, *mooring/unmooring*, *packing/unpacking*, *turning off/turning on*, *putting on/taking off*, *start/finish*, *open/close*, *dress/undress*, *wrap/unwrap*, *go up/go down*, *embark/disembark*, *load/unload*, *enter/exit*, *stop/start*, *sleep/wake up*, *appear/disappear*, *obey/disobey*, and *assemble/disassemble*, among others.

A fundamental aspect of antonyms is their ability to admit gradation, especially in the case of adjectives. Thus, gradable adjectives are arranged on a continuous and open scale, in which a comparison is implied. This occurs because gradation allows for the formation of comparative expressions, as in the example: *Mario has a more cheerful temperament than Juan*. Based on this gradual nature, two main types of antonyms can be distinguished. Firstly, there are polar antonyms (also called monoscalar antonyms), which are defined by the fact that the two terms at the extremes of the scale are gradable; that is, they can be combined with modifiers of intensity such as *little*, *much*, *quite* or *too much*. This group includes pairs of adjectives such as *big/small*, *strong/weak*, *tall/short* and *long/short*. Secondly, there are equipollent (or biscalar) antonyms, which designate properties always expressed in a positive degree, as if they belonged to different scales. These antonyms are usually related to perceptual sensations or emotional states, and some examples are *cold/hot*, *sweet/salty* and *sad/happy*.

In summary, gradable antonyms are those whose members express different degrees of the same variable property. When these terms are intensified, each one moves in the opposite direction along the scale representing the degrees of that property (Cruse, 1987, p. 204). This implies that there is a range of intermediate values between the opposite poles, without the terms completely delimiting the domain. For this reason, relationships such as those observed between *cold* and *hot* can be established. If one of the scales is extended beyond its limits, a new continuous gradation emerges, covering, for example, *hot–warm–cold–icy*.

Another essential aspect of antonyms is that they are logically opposite, unlike complementary terms, which are contradictory from a logical point of view (Espinal *et al.*, 2014, p. 76; Escandell, 2007, p. 74). This means that the affirmation of one of the terms implies the negation of the other. For example, *Pedro is tall* implies that *Pedro is not short*, and *Antonio is short* is equivalent to *Antonio is not tall*. However, the negation of one of the terms does not necessarily imply the affirmation of its opposite; thus, *Luis is not tall* does not mean that *Luis is short*, nor does *Andrés is not short* imply that *Andrés is tall*.

Thus, a semantic property of gradable antonyms is that they cannot be applied simultaneously to the same referent at the same time. That is, they cannot both be true, although they can both be false (Espinal *et al.*, 2014, p. 76; Escandell, 2007, p. 74; Löbner, 2002, p. 89; Lyons, 1977, p. 272). This type of relationship can be represented by the following diagram:

The affirmation of A implies the negation of B, and
The negation of A does not imply the affirmation of B

This explains the following example:

If X is cold, it implies that X is not hot, but if X is not cold, it does not imply that X is hot, since it may be slightly hot, warm, or lukewarm, which are the terms used in Spanish to express gradations of temperature.

Below, I will present three examples in which antonymy clearly appears as a central component of an argument. I will begin with this argument by Descartes, which clearly shows that the relationship between various antonyms serves to provide both coherence and thematic continuity:

Well, among the particles of air, although some are very large—like the atoms that can be seen—in comparison with others, they also move very slowly; and if there are some that move *faster*, then they are smaller. But among the parts of the flame, although there are smaller ones than in the air, there are also larger ones, or at least there are a large number that are equal to the larger ones in the air, which means that they move *very quickly*; and it is these latter that have the power to burn.

That there are *very small* particles in the flame can be conjectured from the fact that they penetrate through numerous bodies whose pores are so narrow that not even air can enter. That there are larger ones than in the air, or ones that are just as large but in greater numbers, is clearly seen from the fact that air alone is not enough to feed the flame. That they move faster is sufficiently proven by the violence of their action. And, in short, that the larger particles—and not the others—are the ones with the power to burn is shown by the fact that the flame of brandy or other *very subtle* bodies barely burns, while the one engendered in *hard* and heavy bodies is very hot. (R. Descartes, in *Chapter III: On Hardness and Fluidity of The World. Treatise on Light*, Madrid, Anthropos, 1989.)

According to Descartes, all bodies are made up of particles. Particles vary in size and movement. Fire is composed of very small and very fast particles, so that when these particles interact with those of hard and heavy bodies, they cause them to burn. With this simplification of the argument, we can see the central role that antonymy plays in it.

Other relationships between antonyms can be found between the terms *large* and *small*, *slowly* and *quickly*, *slowly* and *quickly*, *hard* and *subtle*, *heavy* and *subtle*. We can apply the scheme to any of these relationships to prove that this is indeed the relationship between these terms. For example, *if we say that an object moves slowly, it implies that it does not move quickly. However, if we deny that an object moves slowly, it does not imply that it moves quickly.* With the second part of the scheme, the possibility of gradation is realised. We could add something like, *"It is true that it does not move slowly, but that does not imply that it moves quickly either; it moves a little faster than another object that is also slow."* This test applies to the other cases.

It is possible to see in the argument that a synonymous relationship is established between *quickly* and *hastily*, which makes it possible to contrast these terms with the term *slowly*. On the other hand, the word *subtle* is related to *hard* and *heavy*, which are not synonyms of each other, but are

opposites of *subtle*. This shows that the relationships between words are not one-to-one, but are more varied, and are generated and established in the writing of texts.

Let us now consider the following argumentative fragment:

Between a philosopher's ideas and his life there are only ambiguous relationships; they are two worlds that touch only by accident, by *misunderstanding*, by confusion. It is said of Kant that he was *precise* and *punctual* to the point of pedantry; but what matters to us is that his philosophy is *precise* and *punctual*, not his life; for it is as conceivable and real for a punctual thinker to have an *imprecise* thought as it is for a man of *disorderly* life to have precise and accurate ideas. Socrates' *ugliness* coexists with the *beauty* of his thought, unless it is said that he was beautiful *on the inside* in order to safeguard the desired correspondence at all costs. (Emilio Uranga, letter to José Gaos on the philosophical vocation, 1956).

This argument is very interesting for several reasons. The first is that, once again, the argument is coherent and is based on the relationships between antonyms, as will be shown below. Secondly, the establishment of relationships between antonyms is striking, as it opposes *punctual* to *inaccurate*, *accurate* (*precise*) to *disorderly*, and *ugliness* to *beauty*. At first glance, and considering only the linguistic system, the antonym of *punctual* is *unpunctual*, however, in the text, it is chosen to oppose it to *inaccurate*; in the same way, the antonym of *disorderly* is *orderly*, but in the text it is related to *accurate*. The establishment of these oppositions is understood in the light of the argument as a whole.

Three different domains are presented in this argument: (A) that of thought, intellect and philosophy; (B) that of people's way of life; and (C) that of people's physicality. Domain (A) is opposed to domains (B) and (C), the latter two being different from each other, although they are located in the same order.

With regard to domain (A), someone's thinking can be accurate or inaccurate, and can even be *more (in)accurate* than someone else's, with *accurate* being understood as 'something that is appropriate, correct or true'. However, if *punctual* is understood as 'relating to a detail of something or to only one of its points; such as fulfilling, covering or considering something in detail; doing something taking into account all its points and in an organised manner' (cf. DEM. Meanings 3 and 4), then it is logically possible for someone's thinking or philosophy to be *inaccurate* and *punctual*. This is because there is really no opposition between precise and inaccurate; these terms refer to

different things. In this context, presenting these terms as antonyms allows us to capture an opposition between inferences or expectations derived from relating the meaning of these two terms within dimension (A), since someone who is *precise* is inferred or expected to be accurate and vice versa. However, what the text expresses is that this expectation or inference may not be satisfied. Therefore, the opposition is between the expected and the unexpected, between what can be inferred in a defeatable or undefeatable manner.

On the other hand, *exact* (*precise*) and *disorderly* are not terms with opposite meanings either. As already stated, the opposite of *organised* is *disorganised*, so to say that X is organised and disorganised would be a contradiction. At most, one could say that X is neither organised nor disorganised, that it is not completely (dis)organised, that it is more or less (dis)organised, but always maintaining the relationship between those two terms. Something similar would apply to the units ' ' and 'accurate and inaccurate'. If this is the case, then why oppose *exact* (*precise*) with *disordered*? If we consider the argument, we observe that domain (A) is opposed to domain (B), and it is this opposition that allows us to establish the antonymy between *exact* (*precise*) and *disordered* without falling into a contradiction, since one can be disorderly in one's way of life, whatever that may mean and imply, and at the same time, one can be exact in one's thinking under the meaning explained above. That being the case, the antonymy is not properly indicated by the meaning of these two terms, but is based on the opposition of the domains in which each term is located. From this follows something similar to the previous case: presenting these terms as antonyms allows us to capture an opposition between inferences or expectations. The expectation is that someone who is organised in their life will have precise thinking or a precise philosophy and vice versa, but that inference and/or expectation can be defeated. Now, the opposition between the expected and the unexpected and between the defeatable and the undefeatable derives from relating those two dimensions (A) and (B).

The antonymic relationship between *beauty* and *ugliness* is not surprising, as they clearly have opposite meanings. What is surprising here is that they are qualities attributed to the same person or thing, as this would give rise to a contradiction, but that is not what is being expressed. *Beauty* and *ugliness* are not predicated of the same thing, but are attributed to different domains. Now domains (A) and (C) come into play, which are also in opposition. In this way, *beauty* is attributed to thought or philosophy, in this case that of Socrates, and *ugliness* is attributed to physical

appearance, in this case also that of Socrates. Thus, although thought and physical appearance belong to the same person, Socrates, they are aspects that belong to different domains, and therefore cannot coincide.

This section of the argument is interesting because it appeals to analogy through example. Socrates is a great example of how dimensions (B) and (C) are opposites of dimension (A) and yet, despite this opposition, they can coincide in the same subject or thing, of course, because they are different dimensions. This shows that the antonymy between *punctual* and *inaccurate* and between *accurate* and *disordered* occurs within the text and can only be understood on the basis of these opposing dimensions configured within the argument. In turn, establishing this pair of antonyms in the argument allows us to capture opposing expectations and inferences, where the opposition is between the expected and the unexpected, between what can be inferred in a defeatable or undefeatable manner.

There is still something else about this argument: with regard to the pair *beauty/ugliness*, we are faced with a diffuse case that lies on the border between antonymy and complementarity, due to the intervention of a morphosyntactic variation that takes place in that text. In principle, pairs of adjectives are being related, such as *exact*, *disorderly* and *punctual*, from there we move on to the nouns *beauty* and *ugliness*, which from a semantic point of view share many features of meaning with the adjectives beautiful and ugly respectively, but they are different grammatical categories. When it comes to adjectives, we are dealing with a clear example of antonymy, as they can clearly be graded and comparisons can be made, more beautiful/ugly than, less beautiful/ugly than, and they even accept terms closer to one extreme, such as gorgeous and horrible. However, when it comes to nouns, things change, as they do not allow for gradation, as they appear in this argument. Thus, the sentence **The ugliness of Socrates coexists with the beauty of his thinking* is not possible, *but the sentences Socrates is uglier than his thinking and Socrates' thinking is more beautiful than his physical appearance are possible*, which in a way is what is expressed in the argument. In this sense, we would have to argue that we are dealing with a case of complementarity and not antonymy. However, although examples are scarce, it is possible to find constructions in which the noun beauty is graded with the adverbs *most* and *least*¹. Thus, a sentence such as *"we can find more beauty in Socrates'*

¹ In the Corpus de Referencia del Español Actual (CREA) we find only 13 cases of *greater beauty* in 13 documents, only 1 case of *lesser beauty* and none of *greater ugliness* or *lesser ugliness*.

thinking than in his physical appearance" is acceptable, as it is semantically similar to what is expressed in Uranga's argument. What we can use as evidence to support the claim that this is a clear case of antonymy, although things do not end here, because now we have to explain why something like "*we can find less ugliness in Socrates' thinking than in his physical appearance*" or "*we can find more ugliness in Socrates' physical appearance than in his thinking*" is not productive or preferable if what is expressed is semantically equivalent to what is expressed in Uranga's argument.

Finally, let us consider this argument:

Repetition and memory are one and the same movement, only in opposite directions, because what is remembered has already been repeated and is thus repeated backwards, while genuine *repetition* is remembered forwards. Repetition, if possible, makes a person *happy*, while *memory* makes them *unhappy*, assuming, of course, that they actually take the time to live and do not find, immediately after their birth, an excuse, such as having forgotten something, to slip away from life again (Søren Kierkegaard, *Repetition*, first paragraph, translation by M. G. Piety).

The antonyms on which the coherence of this argument depends are found between *repetition* and memory and between *happy* and *unhappy*. Again, in this example, it is not difficult to find the antonymy between happy and unhappy, although it is more complicated to find this relationship between *repeating* and *remembering*. The antonymy between these terms is generated in the text itself, so that because of the meaning these words acquire in the argument, they are mutually exclusive, and although they are not inherently opposed, they are inferentially so. Let us see how repeat and remember become antonyms, although on this occasion the procedure will be to appeal to our intuition or knowledge about the meaning of these two verbs. Suppose that a heterosexual man who is an admirer of Emma Watson is fortunate enough to kiss her on one occasion. After that event, he never has the opportunity to see her up close again, which prevents the event from repeating itself. In such circumstances, he will only have the memory of that event. Now, if this man were asked what he prefers: to remember kissing Emma Watson or to repeat (continuously) kissing her, the answer is clearly complicated if we include contextual and philosophical factors, but *prima facie*, the answer would lean towards repetition. Similarly, if we ask a man who is even less fortunate whether he would rather remember the pain caused by a decayed

tooth or have that pain repeated, we also know where the answer is going. This example clarifies the relationship between the antonyms *happy* and *unhappy* and *repeat* and *remember* in Kierkegaard's argument. Put in terms of an argument, it would be expressed as follows: in life, we are happy when certain events are repeated, which implies that we are unhappy if they are not repeated and we only remember them; but it is also the case that we are *unhappy* when certain events are *repeated*, which implies that we are *happy* if some events are not repeated and we only *remember* them. Needless to say, it is only in an argument such as this that these two terms can be antonyms; there will be other arguments in which they have no semantic relationship of opposition whatsoever.

In these and other cases that will be studied later, what has been recognised as 'systematic semantic opposition' and 'non-systematic opposition' is at work. This distinction derives from structural semantics, specifically with regard to the understanding of lexical fields. On this subject, Coseriu states the following:

A lexical field is, from a structural point of view, a lexical paradigm that results from the distribution of continuous lexical content among different units given in the language as words that are immediately opposed to each other by means of minimal distinctive features. Thus, for example, the series *jung -neu-alt* ("young" - "new" - "old") is, in German, a lexical field. But a lexical field can also be included in another, higher-level field. Every unit given in the language as a word is a lexeme. A semantic unit that is equivalent to the unitary content of an entire lexical field is an archilexeme. (Coseriu, 1981, p. 146)

From a structuralist point of view, one of the systems that make up languages is the semantic level, which is organised according to uniform principles where the relationships between meanings are relatively stable and independent of the contexts of use. These relationships and principles are anchored in the semantic structure of a given language, that is, in the linguistic system. At this level, semantic opposition takes place in the (abstract) system of language. These oppositions are inherent to lexical units and involve a contrast between the semantic features that constitute the meaning of lexical terms. It is at this level that oppositions such as *punctual – unpunctual*, *love – hate*, *ugliness – beauty*, *life – death*, etc. are explained.

Non-systematic opposition is pragmatic, resolved through inferences or implicatures – à la Grice. It requires recourse to our encyclopaedic knowledge, as well as to certain conventions and communicative objectives of those who produce this type of opposition. They are interpreted in a

situation, that is, they are highly context-dependent and involve a certain connotative component (Mettinger, 1994 pp. 62-72). This explains the opposition between terms such as *feet – head, soul – body, nature – civilisation, curly – straight*, or as in the following examples:

They did it for *love* or for *money*, but they did it...

Sometimes it was a *cat*, other times it was a poor little mouse...

Are you travelling for *pleasure* or *business*?

Where the opposition is not part of the semantic features of the words in the language system. This supports the hypothesis that in arguments, through textual pragmatics, new oppositions are generated, semantic oppositions that only have a place in an argument or discourse, where the opposition between the meanings of lexical units is established and preserved, although it may eventually transcend the text itself by becoming conventionalised and fixed in a particular language.

The antonymic relationship was observed in 43% of the arguments, where the record of typical cases was 76 out of 886, representing 8.586229811%. With these numbers, it can be concluded that the use of this semantic relationship in the development of arguments is quite high.

As observed in one of the examples presented above, there is eventually a rather blurred line between antonymy and the relationship of complementarity, which I will discuss below.

Complementarity.

Complementarity occurs when there is opposition between two terms whose meanings are mutually exclusive. Thus, between a pair of complementary terms, there is a division between two mutually exclusive conceptual domains, from which it follows that what does not fall into one domain necessarily falls into the other, and for this reason, there is no middle ground between the two units.

Words that have a complementary relationship are characterised by being non-gradable, which means that they cannot be simultaneously true or simultaneously false. This is because such relationships divide the universe of discourse into two completely separate subsets. In other words, complementary terms segment a conceptual domain into two mutually exclusive categories, so that anything that does not belong to one must necessarily be included in the other.

In this type of relationship, there is no neutral term or third intermediate possibility, as gradation is not applicable. Consequently, the affirmation of a term is logically equivalent to the

negation of its complementary opposite. Unlike antonyms, complementary terms are contradictory, which means that propositions p and q cannot be both true and false at the same time (Espinal et al., 2014, p. 76; Escandell Vidal, 2007, p. 73; Croft and Cruse, 2004, p. 167; Cruse, 1987, pp. 198-199; Lyons, 1977, p. 272).

To summarise this complementarity, we can express it as follows:

The negation of A implies B and

The negation of B implies A

With this in mind, the following pairs of words are complementary: *single/married, male/female, war/peace, buy/steal, horse/mare, true/false, dry/wet, know/ignore, man/woman, day/night, alive/dead, open/closed, pass/fail, succeed/fail, search/find, win/lose, attack/defend, accept/reject, enter/exit, concave/convex*, to mention a few examples. In the lexicon, morphological units can be found in complementary opposition, such as organic and inorganic (Espinal et al. 2014, 77). The way to prove that they are complementary is with the above scheme and using the verb to be:

If it is not alive, then it is dead, and

if it is not dead, then it is alive.

An interesting aspect of the complementary relationship is that contrasts often involve more than just two terms. It can occur between a term and a set of terms that are part of a closed class of words. This occurs between terms that designate the days of the week, months, and seasons of the year. Here, the test is performed in the same way as in the previous case:

If it is not September, then it is October or November, ... and

If it is not September or October, ... then it is November.

This relationship makes it possible that if something like "Registration will be in September" is stated, it implies that all other months are excluded. This relationship operates for co-hyponyms that are related to the same hypernym. For example, *if it is a pineapple, then it is not a mango, a tangerine, or a pineapple, etc.* Mentioning one excludes the rest. Indeed, this can be taken to such degrees of abstraction that under the hypernym 'entity', if 'pineapple' is selected, not only are other fruits excluded, but also cars, forests, penguins, etc.

In everyday language use, it is possible to find constructions in which complementary terms are used in a graded manner. In most cases, this is a pragmatic choice, as the aim is to express an implicature or add particular connotations to the statement. Thus, expressions such as *Marciano is more of a man than Polo or Macario is much more married than Tito* can be produced. Another possible explanation for the use of graded complementary terms is that the boundaries between a concept and its opposite may vary depending on the domain or discursive situation. For example, when stating *Macario is dead*, it is generally understood that Macario is outside the zone of uncertainty, that is, beyond the point where he could be considered alive. However, the same statement can be used for specific communicative purposes, such as in a medical discussion about whether or not to continue attempts to keep a patient alive who has no chance of recovery. In these contexts, the logical relationship of complementarity is weakened, similar to what happens in stories about zombies or vampires, where the distinction between *alive* and *dead* becomes blurred. Something similar occurs in colloquial exchanges such as: *Hey, did Macario die yet?*

— *No, in fact, Macario is more alive than ever.*

In this case, vitality is graded, so that the notion of death is conceptualised as a state of "zero vitality" (cf. Croft and Cruse, 2004, p. 168).

These examples show that whenever gradation is introduced into a complementary term, a conceptual or pragmatic variation occurs: either the way in which the event or object is cognitively conceived changes, or a pragmatic effect is generated, expressing an implicature or adding a particular connotation to the term used.

Below, I will present two arguments in which complementary terms contribute to their formulation to express their content, to provide coherence and thematic continuity.

There is nothing terrible in life for those who are truly convinced that there is nothing terrible in not living. So it is foolish to say that one fears death, not because it causes suffering

when it comes, but because it causes suffering while one waits for it: indeed, what does not disturb us when it comes is absurd to make us suffer while we wait for it. Thus, the most terrifying of evils, death, is nothing to us, since while we are, death is not present, and when death is present, then we are not. It does not exist, then, either for the living or for the dead, for the former it is not yet, and the latter are no longer. (Epicurus, Letter to Menoeceus, reported by Diogenes Laertius, Book X, §§21-35).

This argument is supported and coherent thanks to the antonymy and complementarity between the terms and constructions *life/death*, *to be present* and *to wait*, *to be present* and *not to be present*, *to be* and *not to be*, and *alive* and *dead*. For each of these pairs, the pattern allows us to know that they are complementary. As already mentioned in this work, the text manages to give new meanings to the terms and, based on this, establish unexpected semantic relationships. In this argument, a novel complementarity is established between *presenting oneself* and *waiting*, between what is present and what is expected, which is different from the more understandable opposition between *being present* and *not being present*. As it works in this argument and when applying the test, it would be as if *M is something that is present, then M is something that is not expected, or if M is something that is expected, then M is something that is not present*. It works in this argument because 'M' represents death, which is something that happens over time. It would not work in the same way if the term were *poverty*, among others, although it could work if accompanied by the term 'book' in a context where one has the desire to read a book that one does not own and that is going to arrive in the post. However, in other contexts, complementarity does not occur, as in the following: *Murakami's latest book is not present (on my bookshelves or desk), but it is something I am not expecting*.

A special case based on complementarity occurs in the Kantian argument presented in Theorem 5, entitled *The possibility of matter requires a force of attraction as a second essential, fundamental force of matter*, the demonstration of which is as follows:

Impenetrability, as a fundamental property of matter by which the space of our external senses is first revealed as something real, is nothing more than the capacity of matter to extend (Theorem 2). Now, an essential driving force, by which the parts of matter escape from each other, cannot, first and for , be unlimited in itself; because matter is impelled by such a force to continually expand the space it fills; secondly, it cannot be fixed by space alone

to a certain limit of extension; space may indeed contain the basis that with the increase in volume of an expanding matter, the extensive force becomes, in inverse proportion, weaker; but since every driving force can have increasingly smaller degrees to infinity, space will never contain the basis by which this force will cease somewhere. Therefore, matter, by its repulsive force alone (which contains the basis of its impenetrability), and if no other driving force acts against it, would have no limit to contain it in its extension, that is, it would disperse to infinity, and no assignable quantity of matter could be found in any assignable space. Consequently, with the purely repulsive forces of matter, all spaces would be empty, and thus there would be no matter proper. Therefore, all matter requires, for its existence, forces that are opposite to the extensive ones, that is, compressive forces. But these cannot be sought, in turn, originally in the tendency to oppose other matter; for this other matter is required in order to be matter itself, a compressive force. Consequently, an original force of matter must be assumed that acts in a direction opposite to the repulsive force and, therefore, acts by approximation, that is, an attractive force. Now, insofar as this attractive force belongs to the possibility of matter as matter in general and, consequently, precedes all differentiations of matter, it must not be attributed merely to a particular kind of matter, but to all matter in general and originally. Thus, all matter is endowed with an original attraction as a fundamental force belonging to its essence. (I. Kant. First Metaphysical Principles of Natural Science. Mexico, UNAM, Classical Studies Collection, 1993, pp. 142-143).

This argument is very interesting because it establishes a synonymous relationship between *comprehensive force* and *attractive force*, but what is fundamental to the argument is the complementary relationship between *attractive force* and *repulsive force*, which are, according to this argument, inherent and essential to matter, to the very existence of matter. So, speaking of matter and according to what is expressed in this argument, *if it is not repulsive force, then it is attractive force, and if it is not attractive force, then it is repulsive force*. In other words, there are only two forces that make matter itself possible, and they are in complementary opposition.

Antonymy and complementarity are the most commonly used semantic relationships in the construction of arguments, after repetition and synonymy. Complementarity was observed in 31% of the arguments, with 52 cases of complementarity, representing 5.86907449% of the total cases. This places antonymy in third place among the most commonly used semantic relationships in the

development of philosophical argumentative texts and complementarity in fourth place. Next, I will focus on the last of the oppositional relationships that I wanted to study in this work.

Inversion.

Inversion, also known as reciprocity, refers to a relationship that expresses a change in opposite directions between two states. In essence, it is the same relationship observed from opposite perspectives. In other words, there is inversion between two lexemes when both denote the same semantic relationship, but with an exchange of roles between the participants. Formally, this relationship can be represented as a two- or three-place relationship R , whose inverse R' is obtained by exchanging the terms of the relationship. Thus, in the two-argument case, $R(x, y) = R'(y, x)$, and in the three-argument case, $R(x, o, y) = R'(y, o, x)$.

In semantic terms, each pair of words that maintains this type of relationship implies an argument inversion, either two-argument, as in *if X is the husband of Y, then Y is the wife of X*; or three-argument, as in *if X buys O from Z, then Z sells O to X*. (Espinal *et al.*, 2014, p. 78; Lyons, 1977, p. 280; Croft and Cruse, 2004, p. 166).

Put succinctly, this relationship can be expressed as follows:

A implies B and B implies A

Not A implies not B and not B implies not A

Lexical units that express this relationship are as follows: *father/son, uncle/nephew, grandfather/grandson, doctor/patient, creditor/debtor, teacher/student, father-in-law/son-in-law, husband/wife, sell/buy, give/receive, ask/answer*. In adjectives such as *ancestor/descendant, prey/predator, host/guest*. There is inversion between words that express temporality or spatiality: *above/below, in front/behind, up/down, before/after*. Other words that express this relationship refer to social relationships such as *doctor/patient, creditor/debtor, teacher/student*; and kinship relationships such as *father/son, father-in-law/son-in-law, grandfather/grandson*. It can be noted that some of the units that establish antonymy or complementarity relationships can also express a reversal relationship. These are sets that eventually overlap, or words that are part of two different sets.

A simple way to show that there is inversion in each case is to use the existential verb 'to have'. For example:

If there is a patient, then there is a doctor, and if there is a doctor, then there is a patient, but if there is no patient, then there is no doctor, and if there is no doctor, then there is no patient.

The relationship of opposition in the case under review may consist of the perspective from which the event is presented (conceptualised). A clear case is the relationship between "buy" and "sell":

(28) Jesús bought a book from Juan

(29) John sold a book to Jesús

From a propositional or logical point of view, both statements express the same content, although not identically from a linguistic perspective. At this level, the difference lies in the opposite focus of the participants involved in the event. In this type of relationship, the event involves a transfer of an object, in which one person pays and, as a result, a change of ownership occurs. In one case, the focus is on the participant who receives the object and makes the payment, while in the other, the focus is on the person who delivers the object and receives the payment. The inversion can also manifest itself in terms of spatiality (directionality) or temporality, depending on how the event unfolds. In this way, lexical pairs such as *go/come*, *take/bring*, *ask/answer* and *offer/accept* arise, representing inverse relationships on these different planes.

The following is an argumentative fragment in which the inversion relationship plays a central role:

[...] and in addition to these reasons, for cheerfully proposing as a principle any of the simple bodies, with the exception of the earth, without stopping to consider how they will make possible the reciprocal generation of these bodies, that is, fire, water, earth, and air. Of course, they are generated from one another, some by mixture and others by separation, and this is of utmost importance with regard to their reciprocal anteriority and posteriority. On the one hand, it would indeed be thought that, among all of them, the most elementary is the first from which the others are generated by mixture, and that this must be the one with

the smallest particles and the most subtle of bodies. (Aristotle, *Metaphysics*, Book I, Chapter 8, Critique of Pre-Platonic Philosophers, Gredos, 2011).

In this case, the terms that maintain a relationship of correlativity or semantic inversion are *mixture* and *separation*, as well as *anteriority* and *posteriority*. The verbs *to mix* and *to separate* refer to the same process, but considered from different temporal perspectives, or to the same action performed in reverse. It is not possible to separate something that has not been previously mixed, just as it is not possible to mix something that has not been previously separated. Consequently, if something is mixed, a previous state of separation is presupposed; and if something is separated, a previous condition of mixing is inferred. Thus, if there is no mixing, there can be no separation, and vice versa. This principle can also be applied to the pair *anteriority/posteriority*. The reciprocal relationship between these terms is fundamental to reasoning, since, according to Aristotle, if—following the pre-Platonic tradition—it is accepted that the four simple bodies (*fire, water, earth, and air*) are generated mutually through mixing and separation, then the existence of a more primordial and prior element must be postulated, from which all others originate through the same processes. This first body would therefore be the most elementary, composed of the smallest and most subtle particles.

The inversion relationship is quite conservative in two ways. On the one hand, no cases of innovation were found in the texts studied, in which an unexpected reciprocal relationship is established, as in the case of antonymy and complementarity. On the other hand, it is a little-used resource in the production of philosophical arguments, as it only appears in 9% of the arguments analysed, with 11 cases – type 886, i.e. 1.24153499%. Inversion is the semantic relationship that follows homonymy, which only has one occurrence, as can be seen in the table below.

Conclusions.

Some partial conclusions reached so far are as follows:

1. Studying semantic relationships in the production of arguments clearly shows how the meaning of linguistic units and constructions is configured. Terms that, by virtue of their meaning, are in principle different and do not intuitively establish antonymic or complementary relationships find links through speakers in the elaboration of texts

to generate such unexpected and novel relationships. This is a good example of linguistic creativity, since establishing semantic connections between terms and linguistic constructions requires the ingenuity of the text producer, who must perform certain operations according to their linguistic competence, know what they are talking about and, above all, what they want to express. However, this rarely happens with the inversion relationship.

2. After repetition and synonymy, the semantic relationships of antonymy and complementarity are the most frequently used in the development of philosophical arguments, at least in the cases analysed in this study. Below, two hypotheses are proposed that seek to offer an explanation for this phenomenon.

(A) Often, defending a thesis implicitly involves refuting or contradicting another thesis or theses. If, for example, someone argues in favour of the innate origin of some of our knowledge or ideas, then they are arguing, explicitly or implicitly, against the experiential origin of our knowledge or ideas. This goes with the old dictum, attributed to Leibniz, that every affirmation implies a negation, that is, that affirming or denying anything is to negate other things. In this way, the presence of antonymous relationships and complementary structures allows us to identify the framework of the discussion in which the topic or problem being analysed is inscribed, as well as the position of the author of the argument and the positions against which opposition is established. This is shown in Aristotle's argument set out above, which is an example of a constant in philosophical argumentation.

(B) In other cases, oppositions are used for the purpose of expressing aspects related to the nature of phenomena or entities, and not to express an assessment or judgement about what is stated. In the case of the opposition between the terms repetition and memory, happy and unhappy, the beauty and ugliness of someone or something, death and life, the present and the

expected, attractive force and repulsive force, in these cases the opposition is not associated with the assessment of a statement or the evaluation of the argument or whether the arguer is correct or not. In these cases it has to do with the nature of things, with how things are believed to be in reality. If something is beautiful, it is intrinsically or inherently opposed to something ugly. In physics, for example, the atom is made up of electrons and protons, which are composed of opposite charges, and there is also the neutron, which, unlike and in opposition to the other two, has no charge. In other words, we conceive of certain aspects of nature as being made up of elements with dual, opposite and discrete features in a real and objective way. This pattern of opposites based on the physical or more concrete, such as life/death, extends to the emotional realm of happy/unhappy and the psychological realm of forgetting/remembering or repetition/memory, until it reaches the most abstract, such as the pairs beauty/ugliness, justice/injustice, negative charge/positive charge, etc. Even now, I am operating with this scheme of dualities and oppositions. You are operating with this mental scheme right now by thinking of things as abstract and concrete, terms between which there is also a relationship of opposition.

3. Something that has already been expressed, but what we want to emphasise is the fact that semantic relationships are not biunivocal, but take place in very different ways, composing a more complex and dynamic system. Furthermore, it is a system of fuzzy sets, since a pair of words identified as having one type of semantic relationship can be identified within another type of semantic relationship. Let's look at this.

The pair dirty/clean exemplifies a case of antonymy, specifically because they are gradable, allowing constructions such as "very dirty/clean" or "cleaner/dirtier than...", and fits into the test schemes outlined above. However, these terms also fall within the relationship of inversion or reciprocity, since clean is only recognised by virtue of dirty and vice versa, thus clean implies dirty and dirty implies clean. This is similar to what is stated in

the DRAE about clean, which is defined as having no stains or dirt. As a result, it is logically inconsistent to assert something like, "I like the house clean, but dirty/but with stains." This is because they are reciprocal, so that recognising one is achieved by recognising the inverse. The second test scheme is more complicated to complete successfully, namely: not A implies not B and not B implies not A. This can only be achieved if the scheme is thought of with the verb 'to have' or 'to exist' in the sense that if clean does not exist, then dirty does not exist, and if dirty does not exist, then clean does not exist. Although this is quite forced, since it only occurs in that existential case and even then, in that context, it implies a categorical change in the terms in question.

Between the accepted/rejected pair there is a relationship of complementarity and antonymy. They are complementary because stating, for example, that Z's speech was not accepted implies that it was rejected, and that Z's speech was not rejected implies that it was accepted. However, in certain contexts gradation is accepted, thus allowing Z's speech to be more/better accepted than Y's.

The true/false pair falls within the relationships of complementarity and inversion. They are complementary because if P is not true, it implies that it is false, and if P is not false, it implies that it is true. They are reciprocal because, as in the case of clean and dirty, one is only conceivable in relation to the other and not in isolation, just as one cannot conceive of a child in isolation, without its inverse, a father.

The pair above/below are complementary, but they are also antonyms and inverses. They are complementary because denying that something is up implies that it is down, and denying that something is down implies that it is up. They are antonyms because they accept gradation, allowing for constructions such as more/very up/down. And they are inverses because something can only be said to be up by virtue of recognising its reciprocal; there is no down independently of up, and vice versa.

These complex relationships go beyond oppositional relationships, since, for example, the pair son and father are inverses and, in turn, are meronyms of "family".

Below is a table summarising what was found regarding the presence of semantic relationships in the construction of philosophical arguments. The middle cells show the number of

typical cases for each of the semantic relationships, with 886 being the total number of occurrences in 100 arguments. The last cell shows the number of arguments in which the semantic relationships appeared out of a total of 100.

Table 1.

Semantic relationship	Number of typical cases out of a total of 886 (c-t)	Cases in N arguments out of 100
Repetition. (1)	557 \equiv 62.866%	99
Synonymy. (2)	138 \equiv 15.575662%	68
<u>Antonymy.</u> (3)	<u>76 \equiv 8.586229811%</u>	<u>43</u>
<u>Complementarity.</u> (4)	<u>52 \equiv 5.86907449%</u>	<u>31</u>
Hyponymy (Hy)- Hyperonymy. (5)	35 \equiv 3.9503386%	24
Meronymy and holonymy. (6)	22 \equiv 2.48306998%	16
<u>Inversion/reciprocity.</u> (7)	<u>11 \equiv 1.24153499%</u>	<u>9</u>
Homonymy. (8)	1 \equiv 0.11286682%	1
Polysemy. (9)	0 \equiv 0%	0

Source: Own elaboration

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