

All Different But Not All Opposite: Contributions To Lexical Relationships Teaching In Primary School

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Abstract

The lexicon allows the expression of particular cosmovisions, which is why there are a wide range of lexical relationships, involving different linguistic particularities (Coseriu, 1991; Teixeira, 2005). We find, however, in teaching context, that these variations are often replaced by dichotomous and decontextualized proposals of lexical organization, presented, for instance, in textbooks and other supporting materials (Baptista et al., 2017).

Thus, our paper is structured in two parts. First, we will try to account for the diversity of lexical relations (Choupina, Costa & Baptista, 2013), considering phonological, morphological, syntactic, semantic, pragmatic-discursive, cognitive and historical criteria (Lehmann & Martin-Berthet, 2008). Secondly, we present an experimental study that aims at verifying if primary school pupils intuitively organize their mental lexicon in a dichotomous way. This study has as its starting point three illustrated stories with words that may establish relations of opposition among themselves. This study was carried out in four second grade Portuguese classes, when formal teaching of lexical relationships begins. Although this content approach starts with antonyms and synonyms (according to Portuguese primary school curriculum), we can see that the students presented different responses, possibly reflecting a cognitive organization of the mental lexicon that escapes the dichotomy of certain oppositions taught in a decontextualized way. We find lexical items grouped according to the same morphological basis, the same sense, the same class of words or specific experiential criteria.

We then believe that, if children intuitive knowledge on words is not confined to oppositional structures and rigid perspectives, it is important to promote lexical relationships heterogeneity awareness through contextualized and scientifically sustained didactic paths, considering lexicon uses as a full exercise of pro-active citizenship.

Introduction

Words may establish a wide range of relationships, concerning their form and/or their meaning (Cruse, 2001). One's mental lexicon, which is a part of our cognitive system that possesses an inventory of all the words we know, stores words in different ways and group them differently, depending on linguistic and non-linguistic criteria (Lehmann & Martin-Berthet, 2008). Each one of us holds a particular cosmovision (Whorf, 1956) and the way we organize our mental lexicon reflects this specificity. That is the reason why we should care about the way lexical

relationships are taught at school, because we need to manage different world views in the classroom, even when we feel they may not be compatible. As a matter of fact, our mental lexical organization influences the way we build knowledge and communicate.

This is the starting point to the research we decided to carry out: if lexicon allows for the expression of particular cosmovisions, that means that mental lexicon may be organised in different ways. Within *Língua e Cidadania: das relações lexicais ao conhecimento do mundo* [Language and citizenship: from lexical relationships to world knowledge] project, which is financed by Calouste Gulbenkian Foundation, we aim at verifying how children tend to structure their mental lexicon and how this should be taken into account in teaching contexts.

The research aims within the project mainly concern the following points:

1. To analyse the linguistic and pedagogical dimensions of lexical relationships – semantic relations (opposition, hierarchy, inclusion and similarity) and morphological and etymological relations (word family) – by considering the interaction between lexicon, culture and citizenship.
2. To realize how mental lexicon interferes with world(s) cognitive processing and with people interactions.
3. To reduce dichotomous thinking and stamped social representations.
4. To promote the awareness of how early manipulation of meronyms and hyponyms has cognitive benefits.

In this article, we turn our attention to relations of opposition, because they are the first to be taught at primary school, according to the Portuguese curriculum, in a way that leaves no place to consider one's particular world views, by reducing this kind of relationships to a dichotomous correspondence between words (Baptista, Choupina, Costa, Querido & Oliveira, 2017).

Firstly, we aim at analyzing relations of opposition following semantic, formal, pragmatic, discursive and cognitive criteria, bearing in mind that *opposition* plays a nuclear role in languages organization and functioning. Then, we will present the first results of an experimental study we undertook in order to verify if primary school pupils intuitively organize their mental lexicon in a dichotomous way, because this seems to be crucial when we are planning language teaching in early years.

1. Lexical Relations – General Assumptions

Language is arbitrary, which means that there isn't a direct link between linguistic structures and the world entities and situations. However, as Coseriu points out, "it is often confused, in the studies of lexicology, the *significatum* (linguistic content) with the *designatum* (extralinguistic reality)" (Coseriu, 1991: 19), leading to some misunderstandings in several fields (cf. confusion between gender and sex, number and quantity, tense and time). As far as sense relations are concerned, this happens when one tries to define (and teach) antonymy and other relations of opposition, as discussed, for example, in our previous work mentioned above (Baptista *et al.*, 2017). In several textbooks and other supporting teaching materials, antonymy is merely presented as a relation of opposition between two words. This has two main consequences: gradability, as an important property of antonyms, is disregarded; and pairs like *thick/thin*, *father/son*, *inside/outside* and *come/go* are treated alike.

In the next section, we will take a closer look at these topics as part of a linguistic characterization of antonymy. For now, we try and explain why this confusion prevails, by bringing up two crucial notions: oppositeness and dichotomization.

Oppositeness is as an essential notion within Structural Linguistics (Saussure, 1916/2006), because any linguistic unit (phonemes, morphemes, words...) has a value in a way that it opposes itself to several other linguistic units, sharing with them something in common but being different from them at the same time. It is thus a central lexical notion (Lyons, 1977; Gutierrez Ordoñez, 1996), because it allows us to distinguish linguistic signs, but also to figure out what they share and how they may be stored in a same paradigm.

From a structural perspective, it is important to remember that the value of meanings results from the oppositions in which they participate (Gutierrez Ordoñez, 1996). Thus, *fresh* may oppose to *hot* (weather) or to *dry* (bread), and, in turn, *dry* may oppose to *wet* (weather), to *greasy* (hair) or to *stewed* (wine). Oppositeness is relevant when we consider antonyms, but also in other lexical relations. *Nose* and *eyes* (meronyms) are parts of a *human face* (holonym), even though they have different forms and roles. *Apple tree* and *pear tree* (hyponyms) are both *fruit trees* (hiperonym) but giving origin to different fruits. We can therefore assume that opposition is so relevant in everyday language uses that it is present in speakers' mind all the time (Lyons, 1977), which makes it easier to recovery it quite often, as we may see in teaching contexts.

Oppositeness leads us to distinguish between one element and several others that differ from the first one in some aspects. Most of the times, we tend to contrast a unit to another one, in such a way that "binary opposition is one of the most important principles governing the structure of languages (Lyons, 1977, p. 271). This is one of the many principles within generative theory, which helps us to understand why this tendency spreads all over the teaching field, even when it is not supposed to, as we may see in gradable contexts.

We may by now emphasize two main problems concerning lexical relations teaching, one being to confine it to a dichotomous antonymy and the other being this reductionist attitude to lexical relations in general, by disregarding its complexity.

Lexical relations occur in the paradigmatic level, by considering words that can replace other ones in a given

syntactic position, and in the syntagmatic level, involving the way words are combined in more complex structures. They occur at the level of the signifier (homonymy, homophony, homography and paronymy) and at the level of signified (which will be discussed below).

There are relations not only between linguistic signs, but also between larger units (expressions, locutions and syntagmas). Therefore, lexicological studies mobilize information from all the linguistic fields of research, concerning phonology, morphology, syntax, semantics and pragmatics (Choupina et al., 2013), so that they can account for words' everyday uses and relations.

As far as sense relations are concerned, we may find different typologies that are a consequence of the diversity we illustrated in the previous paragraph. According to Cruse (2001), sense relations must have an intrinsic interest, meaning that they occur "with significant frequency throughout the vocabulary, and must be capable of supporting significant generalizations" (Cruse, 2001, p. 247).

We may find two different groups of words relations (Cruse, 2001). In the first one (identity and inclusion), there are a class-inclusion relation (hyponymy), a part-whole relation (meronymy) and a similarity relation (synonymy, following three subtypes). In the second one (opposition and exclusion), are placed co-meronyms, co-hyponyms and opposites. Cruse's typology makes it clear that lexical relations strongly rely on perspective: *cat* and *dog* are both members of a given class (*animals*) and therefore exclude one another (a *cat* is not a *dog* and vice-versa); *fingers* and *nails* are part of a human *hand* and therefore are exclusive (a *finger* is not a *nail* and vice-versa). These words are part of a lexical field, gathering words distributed along a *continuum* of lexical content (Coseriu, 1991). Organizing these types a little bit differently, Lehmann and Martin-Berthet (2008) speaks about hierarchy and inclusion; similarity and opposition.

Gutierrez Ordoñez (1996) brings homonymy and polysemy to words relations, while Cruse (2001) puts them under the scope of ambiguity. The Spanish author also analyses synonymy in its different types. For another type of sense relations, Gutierrez Ordoñez (1996) identifies those resulting from differences in content (hiperonymy, hyponymy and co-hyponymy; semantic oppositions and antonymic oppositions), suggesting that antonymy, as we will see later on, is a specific type of opposition.

It is not our goal to go through all these types of lexical relations, but just to give an idea of the complexity underneath every attempting of classification. We are now turning our attention to relations of opposition.

2. Relations Of Opposition

As we have already noticed, oppositeness is both a nuclear and complex notion within lexical semantics. It may apply not only to antonymy, but to every other type of lexical relations, such as synonymy, meronymy and hyponymy. When we want to contrast two or more words (or one or several semantic traits), opposition is closely related to antonymy.

Lyons (1977) distinguish opposition from antonymy, seen as two ways of contrasting. Authors as Coseriu (1991), Gutierrez-Ordoñez (1996) or Cruse (2001) use opposition as a more general term and antonymy as one of its subtypes, but it is also possible to assume antonymy in a large sense as an equivalent term to opposition (Vilela, 1994, Gagné, 2015), even if it keeps its narrow sense which we will be presenting later on (that of gradable opposition). This broader meaning of antonymy suits words like male/female, dead/alive, husband/wife, that "are also considered as antonym pairs, for these words are also opposite in meaning. Therefore, the other two categories, complementarity and converseness, are included in the field of antonymy only in a very broad sense". (Gao & Zheng, 2014, p. 235)

Thus, it is important to build a characterization of opposition, by summing up its several types, following some morphological, syntactic and semantic criteria. Usually, these relations oppose two or more items belonging to the same word class (with some exceptions).

2.1. Opposite types

Bearing in mind that in some contexts (not only at school) different kinds of opposites are treated alike, we built a proposal that is inspired by some seminal works (Lyons, 1977; Coseriu, 1991), but follows also summaries by Ostrá (1987), Vilela (1994), Gutierrez-Ordoñez (1996), Cruse (2001) and Gagné (2015), among others. A general procedure is to divide opposites in binary and non-binary, an option that is supported by the traditional logic.

Binary contrasts are contradictory, because the affirmation of one term implies the negation of the other one and vice-versa: if someone is dead, it means that it is not alive and if someone is alive, it means that it is not dead. On the other hand, non-binary contrasts are contrary, since the affirmation of one item implies the negation of the other one, but not vice-versa: if someone is tall, he is not small; but if he is not small, that does not mean he is tall. This logical distinction is connected to a linguistic criterium (Gutierrez-Ordoñez, 1996), because binary opposites are ungradable, while non-binary ones are gradable, with a *twisted* perspective pragmatically sustained (see 2.2. for details).

Within the binary section, we may find five main types: complementary, privative, equipollent, converse (or symmetric) and directional. The first three groups involve complementarity in a particular way, while the other two are more related to a certain perspective of the situation.

Complementary opposites (*dead/alive; open/close*) are ungradable and the affirmation of one of the items always implies the negation of the other, as far as the term is applicable within a certain universe of discourse. Complementarity does exist with certain terms (*public/private*) in particular contexts, but not in others (*public, semi-public, semiprivate*). *Private* opposites are complementary in a certain way but differ from them because they imply the presence (and the absence) of a specific feature, as in *usual/unusual* or *animate/non-animate*. Most of the times, we are talking about adjectives morphologically related and thus the opposition is morphologically marked (through a-, un-, in-, non-), although some exceptions may be found (*above/below* – adverbs not related). This is a true sign of grammaticalization operating in order to create a linguistic contrast (Lyons, 1977). *Equipollent* opposites, when binary, always imply the presence of a particular trace, acting differently in both items of the pair, such as in *male/female*.

The two last groups deal with a certain perspective. *Converse* opposites concern the same relation under two different perspectives, as in *father/son, husband/wife, sell/buy*. We may find 2-, 3- or even 4-place relations: X is Y's father = Y is X's son (2-place predication); X sold something to Y = Y bought something from X (3-place predication). *Directional* opposites concern movement (*enter/leave*) and again perspective (in this case, the point of perspective) is crucial, because we are talking about the same action seen from different points: when migrants are considered, for instance, we say that they *enter* our country (immigrants), while someone in the country they abandon may say they are leaving this country (emigrants).

As the tendency to dichotomize prevails in languages, binary types are more diversified than non-binary ones. Non-binary opposites mainly involve true antonyms, but also two other (somewhat controversial) categories: ordering and ranking; and cycles. Members of these two groups are often equipollent, because each one of them has the same statute. In *ordering and ranking*, we find examples such as colours (*blue, red, green*), a case where language makes discrete something that in reality falls into a *continuum*; and ordinals like *first, second...* *Cycles* concern days of the week or seasons.

We finally take a look at (true) *antonyms*. Although they are contraries, not all the contraries are usually seen as antonyms (*tree/dog*). This group is formed by adjectives that can be modified (*taller, less interesting, biggest*) and are most of the times morphologically unrelated (*tall/short, big/small*), which means that there is several terms allowed in the same sequence (*huge, tall, short, tiny...*), a linguistic feature that should be taught in the classroom from the very beginning, in order not to make some confusions with complementary opposites.

Cruse (2001) considers three subtypes of antonyms regarding their commitment with what is being asserted: polar antonyms are both impartial (*heavy/light*); overlapping antonyms include one member that is marked (*clean/dirty*); and equipollent antonyms are both committed, such as *happy/sad*. Degree questions may help us to clarify these distinctions (see more details in Cruse, 2001, p. 253-254).

As Cruse's classification already suggests, antonyms are often seen as binary opposites in everyday uses, because polarity is lexically marked. In other terms, "gradable opposites manifest the property of polarity more strikingly than do other opposites" (Lyons, 1977, p. 279). Although private opposites are truly binary and mark it morphologically, antonyms seem to follow a process of lexicalization that strengthens the opposition between the two morphologically unrelated terms. The *good/bad* pair suggests a more intense polarization than *usual/unusual* or *good/not good*, which helps us understand why dichotomization appears so often in teaching practices concerning antonymy. According to Lyons, this is probably due to a conversational implicature: if it is not good, then it is bad.

We can assume that "the definition of antonymy must be lexical as well as semantic. Antonyms need to have "oppositeness of meaning", but they also need to have a strong, well-established lexical relationship with one another" (Gao & Zheng, 2014, p. 235). They are only one of the opposite relations types, as summarized in table 1:

Table 1 – Types of linguistic opposition

Binary	Non-binary
complementary	true antonyms
private	ordering and ranking
equipollent	cycles
converse	
directional	

2.2. A few (more) words on opposites

The proposal to classify opposites we have just presented is not closed, but it may shed some light on a complex subject. Until now, we have called some morphological, syntactic and semantic criteria, but it is useful to also mobilize pragmatics and cognition to understand opposite relations a little bit more. Antonymy may be analyzed in a pragmatic perspective, seen from speakers' point of view, because we are dealing with a relation that "doesn't rely on logical and complex mechanisms, but rather on cognitive and therefore *basic* ones" (Teixeira, 2005, p. 23). We will clarify this idea with three examples.

In Latin, the idea of *old/not old* follows equipollent oppositions inside each pair of the following sequence: *senex, vetulus, vetus* vs *iuvenis, novellus, novus*, being related to people, animals or non-animates. This distinction is not present the same way in modern English, but there is still a difference between *young* and *new*.

Several authors emphasize a close relationship between antonymy and synonymy, since antonymy also implies “a dimension of resemblance” (Ostrá, 1987, p. 11), which means that there is a link between antonymy and synonymy. For instance, in French, *redouter, craindre, avoir peur* are synonyms whose specific value depends on semantic and pragmatic differences, oppositions.

So, we cannot see antonymy “as a maximal degree of meaning difference, but rather as one of the manifestations of dichotomization tendency” (Ostrá, 1987, p. 11), in which it differs from other cases of semantic incompatibility due to this semantic similarity. Antonyms are therefore “terms whose semantic traces are identical with a single exception of one which is not only incompatible but opposite” (Gagné, 2015, p. 3).

A third example underlying the importance of pragmatics and cognition in this field is given by the way conversational implicatures may change antonyms typical features (Lyons, 1977). Ungradable opposites may become gradable, as when we say about someone or something that it is *really alive*. Gradable opposites may become ungradable (as seen before in *tall/short*) when we want to emphasize the polarity. And grading ungradable opposites is a linguistic way to refuse to see them as contradictory, as we know by the debate about how many categories are there besides *male* and *female*. These procedures are not exclusive for antonyms, being available for some subtypes of adjectives: relational adjectives, such as *British*, may be graded when we say that this is *a very British attitude*, by turning a relational adjective into a qualificative one.

After having considered the complexity behind sense relations, specifically behind opposite relations, we will now turn to the experimental study we undertook in four second grade Portuguese classes.

3. Experimental Study

Our starting point to this study was the fact that in the first two grades of schooling in Portugal only synonymy and antonymy are taught (Buescu, Morais, Rocha & Magalhães, 2015), which leads to hinder the diversity of lexical relations. Besides, the teaching of antonymy often conveys a dichotomous perspective, thus limiting grammatical structures study, as verified, for example, in manuals and other pedagogical materials (Baptista et al., 2017). We know, as we have already noticed, that dichotomization is a general tendency in language, but not all the cases of opposite relations fit in the field of polarity, which is something relevant when we are preparing pupils to be future citizens aware of world’s complexity. This dichotomous vision may narrow the perspective that students build on the world.

So, our research questions were:

- 1 – Do children tend to structure their mental lexicon in a dichotomous way?
- 2 – Do children tend to organize their mental lexicon only with opposite items?

Although we knew that oppositeness and dichotomization are central notions in language, we wanted to find out how they really determined the way children in early stages of formal teaching build lexical relations in their mind, because it is an important issue when it comes to prepare scholar curricula and language classes. In this article, we will be presenting first results of this research.

3.1. Methodology

This study was carried out in four second grade Portuguese classes, when formal teaching of lexical relations begins. It started with the presentation of three illustrated stories with words that can establish relations of opposition among themselves, although these oppositions are not exclusive and that sometimes the syntactic and/or pragmatic context transforms oppositional relations into similarity relations within the narrative (see 2.2. for further details on how this change of perspective may occur).

In fact, these relationships allow groupings of words with criteria other than opposition, such as word class (nouns, verbs, adjectives and adverbs), worldviews, sociocultural references or different perspectives. In the first group, words were related to *age*; in the second one to *beauty*; in the third one to *movement* and *spatial localisation*. We could implicitly mobilize different types of opposites to see how children manage them.

The stories were read aloud by the teacher and visualized on a data show. Pupils had to organize the words (of each story) according to different graphic strategies (two bags in a first exercise, ten hangers with two ends each in the second, and a staircase with several steps, in the third). The bags and the hangars were used in each of the three stories, while the staircase was only used in the first and the second ones, because it was the only stories where we had gradable words.

3.2. First results

When analysing data, we decided to focus on two main issues: what kind of strategies children followed to place the words in each image and how did children group words in each exercise. The strategies may give us some information about the importance of dichotomization in children’s mind. The grouping procedures may reveal if oppositeness is really the relation that influences the most their linguistic thought.

As far as strategies are concerned, we realize that children followed different graphic strategies (Figure 1). Some placed the words within the hangers' limits (1) while others used the hangers' ends (2) to write down the items. Not all the children found it necessary to choose only two words per hanger, as we may see in (3).

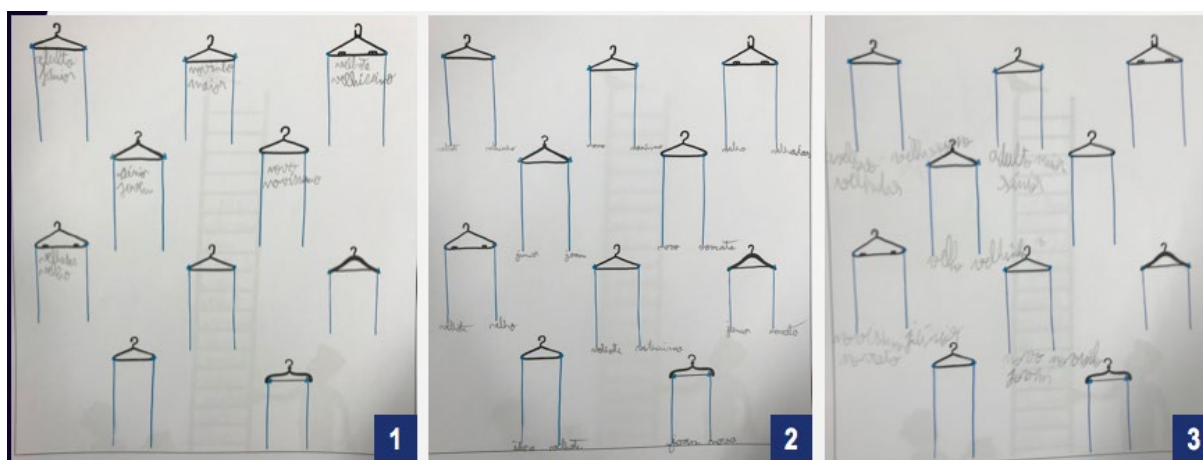


Figure 1 – Graphic strategies children followed to organize the words

These examples suggest that children follow different strategies to organize the words because they organize their mental lexicon differently. Only in (2) we may observe a tendency to dichotomization, but we need a deeper analysis of all the children's productions in order to draw a clearer tendency, if there is one.

Another argument in favor of this diversity is found when children filled in the bags (Figure 2). Some of them just wrote down some words on one of the bags (2), while others filled both of them (1). Sometimes, they felt it would be important to justify their options (3), by telling us why some words fit in one bag and other words in another one.

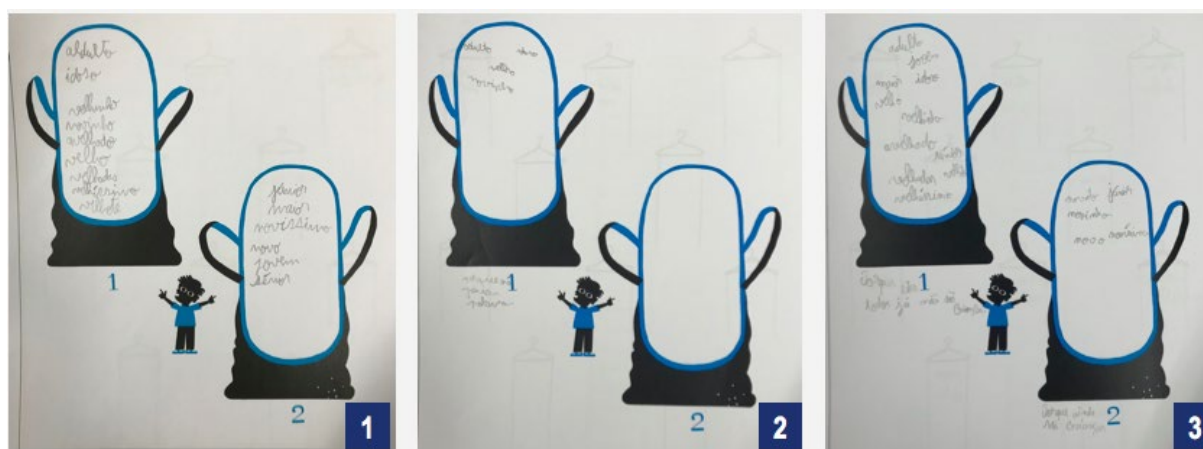


Figure 2 – Strategies children followed to fill in the bags

When it comes to evaluate how children grouped the words, we realized that there were different criteria behind each option, which is coherent with what we know about lexical relations and the role of morphology, syntax, semantics, pragmatics and cognition in characterizing them.

We find lexical items grouped according to different linguistic criteria. Some children grouped words which present the same morphological basis and the same *advanced age* (*velho* [old], *velhote* [old man], *velhissimo* [very old]). Other pupils put together words sharing the same suffix, as in *novissimo* [very young] and *velhissimo*. Children of the second grade also showed they are probably aware of word classes, as they grouped together verbs like *entrar*, *sair*, *ir* [enter, leave, go] and adverbs like *aqui*, *cá* [here]. Some of them were also capable of grading lexical items (Figure 3), even if they had to deal with antonyms which are not easy to grade, because they sometimes involve a slight difference in meaning.

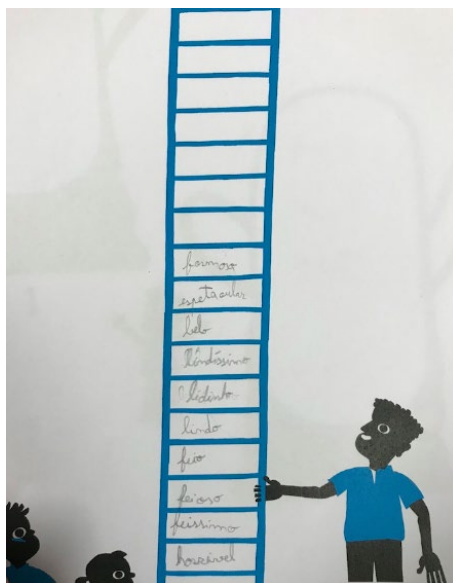


Figure 3 – Grading adjectives within the semantic field of *beauty*

This operation of grading adjectives presented a difficulty, as they were not intended to follow one single possibility of organization. Thus, we found some distributions motivated by semantic-pragmatic and experiential criteria with diverse connotative senses. For instance, the items *maior* [*major*] and *adulto* [*adult*] appear either in a group containing words associated with lower age or in a group linked to more advanced ages. When written on the staircase (exercise 3 in each group of words), these items consistently occupy sometimes the intermediate places of transition between the *new* and the *old*.

4. Discussion And Some Conclusions

Although lexical relationship pedagogical approach starts with antonyms and synonyms (according to Portuguese primary school curriculum), two-grade pupils presented varied responses, regarding different strategies of representing the information or different linguistic criteria to put words together. These differences possibly reflect a cognitive organization of the mental lexicon that escapes the dichotomy of certain oppositions taught in a decontextualized way.

We may now try to answer our research questions. Not only we found evidences that children don't always follow the way of polarity (question 1), as they use differently the hangars and the bags to write down the words, but also did we realize that opposition isn't always the best option for them to group the words (question 2), since they have followed different linguistic criteria when performing this task. We really need to deepen this research in order to find other tendencies in children's performances, but, for now, we may assume that children's intuitive knowledge on words is not confined to oppositional structures and rigid perspectives.

Therefore, it doesn't seem to make sense for teaching to lead them that way. Instead, it is important to promote lexical relationships heterogeneity awareness through contextualized and scientifically sustained didactic paths, considering lexicon uses as a full exercise of pro-active citizenship. As Ullmann stated, "words are surrounded by a net of relations that connect them to other words" (Ullmann, 1964: 476).

Lexical relations are complex and change throughout the times. As we can tell by some children's answers, "the chief driving force in processes of regular semantic change is pragmatic: the context-dependency of abstract structural meaning allows for change in the situation of use, most particularly the speaker's role in strategizing this dynamic use" (Traugott & Dasher, 2005: 24).

So, the lexical relationships complexity is not compatible with a lexical-semantic perspective confined to study synonyms and antonyms by themselves and out of their use context, as we see in many pedagogical practices. These notions should be put together with hierarchy and inclusion relations, as well as with those of semantic field or lexical field and should be framed by a more dynamic notion of lexical relations.

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