

On conceptual nature of antonymy: Evidence from corpus-based investigations

Nataša Kostić

University of Montenegro, Montenegro

Abstract:

This paper provides an overview of corpus investigations in studying antonymy with an aim to argue in favour of the conceptual approach to antonymy. Antonymy is considered to play an important role in organizing languages' vocabularies. However, there is no consensus in the literature on the issue of whether antonyms form a set of stored lexical associations (as the structuralists and the Princeton WordNet model propose), or whether the category of antonymy is a context-sensitive, conceptually grounded category (as conceptual models of meaning propose). On the basis of author's recent investigations of antonymy in Serbian written discourse, this paper argues in favour of the conceptual approach to antonymy. This approach predicts a category with a continuum structure, with prototypical antonym partners as core members, and category members for which a partner is not available in a context-free environment. The theoretical implication of the investigations presented is that antonymy is primarily a conceptual relation, based on general cognitive processes.

Keywords: antonymy, cognitive approach, conceptual relation.

1. Introduction

The relation of antonymy is considered to play an important role in organizing languages' vocabularies (Cruse, 1986; Fellbaum, 1998; Lyons, 1977; M.L. Murphy, 2003; Willners, 2001). However, there is no general agreement on the foundation of the relation of antonymy. There is no consensus in the literature on the issue of whether antonyms form a set of stored lexical associations, as the structuralists and the Princeton WordNet model propose (Gross & Miller, 1990), or whether the category of antonymy is a context-sensitive, conceptually grounded category of which the members form a prototype structure of 'goodness' of antonymy, as conceptual models of meaning argue (G.L. Murphy, 2002). According to the structuralists, language is an autonomous intralinguistic system of relations between words, organized on the basis of lexical fields (Cruse, 1986). Word meanings are not treated as psychological units and are not substantial but relational, defined in terms of what they are not. For instance, *long* gets its meaning from its relation to *short*. Antonymy formed an important part of the structuralist models of meaning (Cruse, 1986; Lyons, 1977), in which relations such as antonymy are primitives and meanings of words are the relations they form with other words in the lexical network. The categorization of antonyms often involves the ascertainment of certain inherent semantic characteristics of pair members, regardless of the contexts in which they might appear. Theoretical research within the structuralist tradition has focused on semantic or logically based classifications of antonyms. There are, for example, semantic opposites that exhaust the scale they refer to (*dead/alive*,

married/unmarried) that are examples of complementary type and are based on the logical relation of contradiction, and ‘true antonyms’ like *hot/cold* or *long/short* that are not mutually exclusive and, unlike the former type, are gradable and based on the logical definition of contrariety. Other categories include converse opposition (*parent/child, buy/sell*), directional opposition (*north/south, come/go*), multiple incompatibles (e.g. seasons of the year) and orthogonal opposition like *man-woman-girl-boy* where each member of the set is in opposition with two other members. Structuralist theoretical work on antonymy helps us perceive the variety within types of semantic oppositions, but it does not try to characterize antonyms from non-antonyms, nor does it really explain the relation of antonymy.

The lexical, categorical view of antonymy, as proposed by the Princeton WordNet model (Gross & Miller, 1990), argues that there is the distinction between direct (e.g. *dry/wet*) and indirect antonyms (e.g. *damp/arid, moist/parched, humid/dried-up*, etc.) The direct antonyms, which are central to the structure of the adjectival vocabulary, are lexically related, while indirect ones are linked to the direct antonyms by virtue of being members of their conceptual synonym sets. Psycholinguistic indicators that have been used in the literature in support of lexical associations between antonyms include the tendency for antonyms to elicit one another in psycholinguistic tests such as free association (Charles & Miller, 1989; Deese, 1965; Palermo & Jenkins, 1964) and to identify them as opposites at a faster speed (Charles, Reed & Derryberry, 1994; Gross, Fischer & Miller, 1989; Herrmann et al., 1979). The lexical categorical approach considers antonymy to be a lexical relation and words are either lexical antonyms or not. Antonyms are pre-stored and get their meanings from the relation of which they are members. This model is context insensitive and static. In the lexical categorical model different contexts do not affect the antonym, since the antonym of a word is not determined by context and sense, but is lexically driven. Also, they predict a definite boundary between adjectives such as *heavy* that have antonyms and adjectives such as *ponderous* that have no antonyms on grounds that are not empirically supported. The main disadvantage of the structuralist approach to meaning is that it is a static system where instances of semantic opposition are classified on the basis of the meaning of individual words, which reflects their semantics but does not say much about the relation itself. In most of the literature on antonymy within the structuralist tradition there is a lack of empirical data, and the theory is not capable to explain lexical flexibility which is evident in how antonymy is used in language.

2. The conceptual approach to antonymy

Literature on antonymy provides ample evidence that the WordNet representation of antonymy is an over-simplified means to classify antonyms. Herrmann, Chaffin, Daniel & Wool (1986) argue that canonicity is a scalar rather than absolute phenomenon. In one of their experiments, Herrmann et al. (1986) asked informants to rate word pairs on a scale from one to five. From the results of their experiment it emerges that there is a scale of goodness of antonyms with scores ranging from 5.00 (*maximize/minimize*) to 1.14 (*courageous/diseased, clever/accepting, daring/sick*). Herrmann et al. (1986, p. 134-135) define antonymy in terms of four relational elements. The first element concerns the clarity of the dimension on which the pairs of antonyms are based. Their assumption is that the clearer the dimension is the

stronger the antonymic relation (e.g. *good/bad* as opposed to *holy/bad*). Secondly, the dimension has to be predominantly denotative rather than predominantly connotative. The third element is concerned with the position of the word meaning on the dimensions. In order to be good antonyms the word pairs should occupy the opposite sides of the midpoint (e.g. *hot/cold*) rather than the same side (e.g. *cool/cold*). Finally, the distance from the midpoint should be of equal magnitude.

Similarly, Murphy & Andrew (1993) report on results from a set of experiments on the nature of the lexical relation of antonymy that showed that adjectives are susceptible to conceptual modification. Like Herrmann et al. (1986), they show that opposition is not a clear-cut dichotomy, but a much more complicated and knowledge-intensive phenomenon. In their experiments, antonyms of 14 adjectives from Princeton WordNet were elicited both out of context and in combination with a given noun. They show that the elicited adjectives were not the same across the two conditions, which they take to be evidence of the fact that producing antonyms is not an automatic association but a knowledge-driven process. Given a specific context, antonym couplings are bound to be stronger and more consistent across speakers. The conclusion of their study is that antonyms are not lexical relations between word forms, but they have conceptual basis. In their final discussion, Murphy & Andrew (1993) raise the question of whether there is a place for lexical relations as proposed by Princeton WordNet. Their conclusion is that on the condition that the words happen to be associated, lexical relations may in some cases be pre-stored, but in many other cases they are not. Some lexical relations may be computed from semantic domains where they have never been encountered before, which means that pre-stored lexical links may be an important part of linguistic processing, but they cannot explain the range of lexical relations that can be construed.

Murphy (2003) proposes to use the terms antonyms and opposites interchangeably, suggesting that all antonymous pairs share core antonym properties and will be recognized as such by any native speaker. She takes the position that relations among words are not among the types of information about words that can be represented in the mental lexicon and defines her perspective as pragmatic and metalexical. The metalexical approach is based on the following assumptions: (a) Semantic relations are not relevant to linguistic competence; (b) they depend upon the contexts in which they occur; (c) they are predictable by means of a single relational principle (2003, p. 25). Semantic relations between words reflect conceptual knowledge about words, rather than lexical knowledge of words (Murphy, 2000). Taking into consideration the properties of paradigmatic semantic relations that she explores in detail (such as productivity, binarity, variability, prototypicality and canonicity, semi-semanticity, unaccountability, predictability and universality) Murphy argues for an approach that accounts for all of the semantic relations, as well as other lexical and conceptual relations. Antonymy refers specifically to the opposition of words, and opposite applies to any binary relation. Antonymic relation is defined on the basis of a Relation by Contrast-Lexical Contrast (RC-LC) principle, which states that “a lexical contrast set includes only word-concepts that have all the same contextually relevant properties but one” (Murphy, 2003, p. 170). Although the RC-LC defines antonymy, and all other semantic relations, it is conspicuous that it makes no reference to meaning. This is because the metalexical approach is pragmatic in nature, and takes into account the fact that in natural language use the number

of antonyms of a particular word is greater than in neutral contexts. Murphy (2003, p. 174) exemplifies this by citing several possible opposites for *smooth*, depending on what *smooth* is describing (e.g. *smooth/rough* paper, *smooth/bumpy* journey, *smooth/lumpy* cake batter, *smooth/grainy*, *smooth/ridged*, *smooth/sticky*, *smooth/difficult*, or any other adjective in contexts in which *smooth* and that other adjective describe things that are in complementary distribution). A theory of lexical semantic relations has to be able to account for this observation. Instead of relying on meaning only, the metalexical approach relies on the salience and relevance of meaning, which means that the context of communicative use of language determines the aspects of similarity and difference in a contrast set (Murphy, 2003, p. 171). Therefore, the particular communicative demands of the context (e.g. collocational preferences, morphological properties, rhyme, connotation, social register, etc.) are deemed to be relevant in judging word pairs as antonymous or not. Murphy also admits that there seems to be a small set of words that are closely liked both semantically and lexically, that are entrenched in memory and perceived as strongly coupled pairings by speakers. These pairs are in the literature referred to as canonical antonyms. The opposed pairs that are acknowledged as antonyms in thesauruses and dictionaries of antonyms (e.g. Room, 1988) are by some authors (Murphy, 2003; Davies, 2013) considered to be a part of the community canon. What is missing in theoretical classifications of antonymy is how antonymous pairs behave in corpora, which record actual language use. Corpus-based approaches to antonymy are able to provide insights into how antonymy is employed in real language use.

3. Antonymy in language use

According to the syntagmatic approach, the meaning of a word is defined in terms of the company it keeps in language use, or in terms of the totality of its uses. In this respect, the syntagmatic approach opened up for new trends in linguistics, namely for usage-based approaches to lexical semantics where contextual factors and real language use are prime research objectives for the description of meanings.

Starting from the notion of *antonymous pattern*, “a formulaic structure in which certain grammatical and content words systematically house both members of an antonymous pair” (Kostić, 2011, p. 518), Kostić presented a systematic description of phrasal contexts in which conventionalized antonyms co-occur in the 23 million Untagged electronic corpus of the Serbian language. In this study, fifty canonical antonymous pairs (including adjectives, nouns, verbs, adverbs and prepositions) were pre-chosen, and all the sentences (a total of 4,903) in which these pairs co-occur were analyzed in order to establish the textual function of the antonymous pair and its lexical and syntactic context. Antonyms in Serbian written discourse are in almost one half of all the sentences used to signal inclusiveness, i.e. to indicate the inclusion of the whole semantic dimension which the pair denotes, and the hallmarks of this use of antonyms are coordinating conjunctions (in antonymous patterns such as *x i y* ‘x and y’, *x ili y* ‘x or y’, *i x i y* ‘both x and y’, *ni x ni y* ‘neither x nor y’, *bilo x ili y* ‘whether x or y’, *x kao i y* ‘x, as well as y’), e.g. *Ona ne može biti gluplja ili pametnija nego što smo mi i ne može govoriti istinu ili laž više nego što mi možemo* ‘She cannot be more or less intelligent than we are and cannot say more truths or lies than we can.’ Another major function of antonyms in Serbian written discourse is to act as lexical triggers of contrast, i.e.

to be attached to another pair of words, phrases or clauses in the same sentence (which are not usually perceived as semantically opposed), with an aim to generate or enhance a larger contrast within the sentence, e.g. *Njeni predstavnici su malo pričali, a mnogo radili i gradili* ‘Its representatives talked little, but did and built a lot.’ These sentences actually contain two contrasting pairs, and the function of antonyms is to draw the reader’s attention to the second, more important contrast in the sentence (*talked* versus *did and built* in the previous example). Antonyms function as lexical triggers of contrast in Serbian corpus less frequently than as signals of inclusiveness, or more precisely in about one-third of all examples. Nevertheless, it is one of the two most important ways that language users employ antonymy in written discourse. None of the other four (minor) textual functions of antonymy identified in Serbian written texts accounts for more than 5% of all examples. These functions are: to mark the parameters of a distinction, e.g. *Odvojiti zdrave banke od bolesnih* ‘Healthy banks should be separated from the unhealthy ones’; to mark the starting and ending points of a change, e.g. *Ovo je proces prelaska sa stare na novu vlast* ‘This is the process of transition from old to new government’; to create comparison along the dimension, e.g. *Plavokosa Klobukovska više muško nego žensko* ‘The blond haired Klobukovska is more male than female’; and to imply mutual exclusivity, e.g. *Izručenje će uslediti u kratkom, a ne u dugom roku* ‘The extradition is to happen in a short, not long period’ (Kostić, 2011, p. 526–528). Other studies on textual functions of antonyms have demonstrated that these functions are widespread in English (Jones, 2002; Jones & Murphy, 2005; Jones, 2006, 2007; Jones et al., 2007; Murphy & Jones, 2008) and in other languages, although with some distributional differences (Murphy et al., 2009 [on Swedish antonyms], Muehleisen & Isono, 2009 [on Japanese antonyms] and Hsu, 2015 [on Chinese antonyms]).

The observation that antonyms can be used in text either to emphasize the semantic oppositeness or to annul its existence can, at first sight, be seen as a paradox. However, the conceptual nature of the antonymic relation and the relational principle Relation by Contrast-Lexical Contrast can explain why this is possible. If antonymy is by definition the sameness of contextually relevant properties but for one (contextually relevant) difference, then it is convenient to use the antonymic relation to focus on either of these two aspects. Contextual factors play a role in determining what is similar and what is different, but they also play a role in deciding which of these aspects is to be exploited and focused on in language use. If antonymy (in the sense of binary semantic contrast between lexical items) can be conceptually represented as the opposition of poles in a meaning dimension (which is in accordance with the relational principle RC-LC for the derivability of lexical contrast sets), then there are two typical intrasentential uses of this relation: either (1) the aspects of similarity that bind them together are emphasized while the differences are neglected, or (2) the focus is on the dissimilarities that make the members contrastive while the similarities are neglected. The typical realization of the first possibility is the function of inclusiveness, whose primary aim is to annul the differences between antonymous concepts in order to encompass the whole semantic dimension. Less typical realizations of this possibility are the use of antonyms to help create comparisons (in which antonymic concepts can be easily placed along the same dimension according to some comparison criteria) and to mark the starting and ending points of a change (in which the opposing concepts are connected along the same semantic dimension by means of a journey metaphor). The typical realization of the

second possibility is the use of antonyms as lexical triggers of contrast, when the contrastive potential of antonyms (in other words, the opposing poles) is used with an aim to build further contrastive relations in the given context. Less typical realizations would include the use of antonyms that marks parameters of a distinction (in which the difference between the concepts is stressed by emphasizing their oppositeness), and the negation of one member of the pair to imply mutual exclusivity within the context.

3.1 Derivability of antonymic relation in Ancillary Antonymy contexts

When antonyms are employed as lexical triggers of contrast, their function is to draw our attention to the more important contrast in the given context, which is why Jones (2002) proposed to label this textual function of antonyms as Ancillary Antonymy. Sentences in which the well established antonymous pair is employed to act as a contrast generating device actually contain two contrasting pairs (e.g. *malo/mnogo* ‘little/a lot’ (A-pair) and *pričali/radili i gradili* ‘talked/did and built’ (B-pair) in example *Njeni predstavnici su malo pričali, a mnogo radili i gradili* ‘Its representatives talked little, but did and built a lot’). Although the members of the pair attached to the antonymous pair may not possess any inherent contrast, it is evident that they are in this context interpreted in the same type of relation as the antonymous pair. Many examples of Ancillary Antonymy sentences testify that there exists a scale between, at one extreme, pairings that are strongly conventionalized as antonyms and, at the other extreme, pairings which may be opposable in some contexts (co-hyponyms and latent co-hyponyms) and pairings for which it is very difficult to think of a context in which they could be used as antonyms, although those contexts undoubtedly exist. Consider the following examples, taken from the Serbian electronic corpus:

(1) *Sam Milovan Vitezović je za svog junaka rekao da je prezirao smrt, a voleo život, i da su stranice romana nastale pod sirenama prošlogodišnjeg NATO bombardovanja.*

‘Milovan Vitezović himself said about his main character that he despised death and loved life, and that the novel was written during NATO bombing last year.’

(2) *Nacionalna strategija može da smanji na minimum dileme vezane za problem tretmana otpada, da podstakne dobre pokušaje i obeshrabri loše.*

‘National strategy can minimise the dilemmas about the treatment of waste, to incite good and discourage bad efforts.’

(3) *Uočivši zbunjenost na licu gosta iz Engleske, ona sramežljivo dodade: “Pa, prodajemo konzerve sa hranom a kupujemo udžbenike i školski pribor”.*

‘Having noticed that the guest from England was confused, she added shyly: Well, we sell canned food and buy textbooks and school materials.’

The two contrast pairs in (1) *život/smrt* ‘life/death’, *voleo/prezirao* ‘love/despise’ are almost identical in the strength of contrast relation, the only difference being the fact that the A pair

is the canonical antonymous pair, while the B pair does not (yet) have that status in the mental lexicon. In cases like these it cannot be argued that antonyms create contrast relationship between members of another, related pair. However, the contrast relation that holds between antonyms is conventionalized and entrenched in our mental lexicon so that we can still label this function as Ancillary Antonymy, albeit in the sense of reciprocally ancillary. In (2) ancillary function of antonyms is more obvious. Antonyms are used in order to draw out a latent contrast between a pair of co-hyponyms, i.e. a pair of concepts that share the same super-ordinate concept (or even latent co-hyponyms, words or phrases that acquire the status of co-hyponyms in the appropriate context). These pairs often have a potential for contrast, but they are usually interpreted as non-contrastive. However, in the appropriate context (created by the use of canonical antonymous pair and antonymous patterns coupled with syntactic parallelism), words or phrases such as, for example, *podstakne* ‘incite’ and *obeshrabri* ‘discourage’, can be interpreted as contextually similar but for one relevant difference, which makes them members of a binary contrast set. Example (3) illustrates extreme cases of Ancillary Antonymy, in which the presence of conventionalized antonyms is of utmost importance for the creation of contrast relation. The related pair holds no contrast potential and it is their proximity to the antonymous pair which endows these concepts with contrastive power. In other words, the canonical antonymous pair is effectively creating comparison between a pair of phrases with a very low innate contrastive value. In these examples our attention is drawn to pairs of phrases that are completely unrelated and without any contrastive potential, but which the writer sets up in contrast relation to convey certain messages and achieve certain effects. This contrast relation is established by the use of an established antonymous pair, parallel structures, and antonymous pattern. In example (3) antonymous pair of verbs (*kupiti/prodati* ‘buy/sell’), within the antonymous pattern (*x a y* ‘x and y’), makes adequate framework in which the corresponding objects in the form of noun phrases (*konzerve sa hranom* ‘canned food’ and *udžbenike i školski pribor* ‘textbooks and school materials’) can only be understood as semantically opposed for the purposes of this specific context.

In Ancillary Antonymy contexts, contextual dependency of contrast pairs can either be zero (in the case of recognized antonymous pairs), or total, in the case of antonym constructs. An antonym construct is a new antonym pairing generated in Ancillary Antonymy context (Kostić, 2015a, p. 153). This context consists of an established antonymous pair, the antonymous pattern and/or structural parallelism. Lexical environment that enables the second contrastive relation in Ancillary Antonymy examples is the presence of the established antonymous pair, whose semantic and pragmatic features make it available to creators and interpreters of ancillary contrasts in text. When used in this way, conventionalized antonyms can either strengthen the relation generated according to the principle RC-LC (for pairs of co-hyponyms) or provide the dimension of comparison for the features of semantic incompatibility and contrast, if no such dimension for the pair exists (for semantically unrelated pairs). Antonym constructs can be of diverse nature, such as co-hyponyms of various super-ordinate concepts or totally unrelated pairs of words, phrases or clauses. In fact, there is no limit as to what might constitute such a pair, as long as the relational principle RC-LC can be applied. It means that all of the above examples of binary semantic contrast belong to the same type of relation, and that the relation of antonymy is

predictable and derivable in the appropriate context. However, the degree of antonymity obviously varies. The more canonical antonyms are linked both semantically and lexically, are more entrenched in memory, and reinforced through linguistic experience. The less canonical, and some of the non-canonical members of antonym couplings created in discourse, are inherently contrastive if they fall into complementary distribution within the same meaning dimension. Other non-canonical pairs are antonyms only because of their semantic incompatibility when they are used in binary contrast in order to be opposites.

3.2 Derivability of antonymic relation in phrasal contexts of antonym co-occurrence

Since they typically house the well-established antonymous pairs in the sentence, phrasal contexts of antonym co-occurrence in written discourse can be assumed to generate contrast relation in context, even when antonyms are not present. In order to investigate this, Kostić (2015b) examined the creation of the textual antonymous profile of a given word by means of some of those antonymous patterns. The performance of three common antonymous patterns (*x ili y* ‘x or y’, *i x i y* ‘both x and y’ and *između x i y* ‘between x and y’) was investigated in the Serbian electronic corpus of 123 million words by placing a seed word in the X and in the Y positions, and extracting all concordances which feature that word string from the corpus. These three patterns have been chosen because the textual functions they are typical of are among the most reliable in terms of lexical signaling. The output generated by all three patterns, using as test items the adjectives *dobar* ‘good’, *loš* ‘bad’, *prirodan* ‘natural’ and the noun *uspeh* ‘success’, strongly suggests that the chosen patterns are abundant. Subsequent analysis of contrastive pairs established in those contexts gave evidence to the claim that it is possible to create the textual profile of antonyms using these lexico-syntactic constructions. The range of contrast pairs found with antonymous patterns surpasses the limited number of well-established antonyms commonly discussed in the theoretical approaches on antonymy. In particular, the pattern-based method can find not only canonical antonyms like *dobar/loš* ‘good/bad’, *uspeh/neuspeh* ‘success/failure’, but also less conventional pairs like *prirodan/veštački* ‘natural/artificial’, *uspeh/pad* ‘success/fall’, non-typical domain-specific contrast pair like *prirodan/društveni* ‘natural/social’ (sciences), *prirodan/sintetički* ‘natural/synthetic’ (materials) and highly context-dependent pairs like *prirodan/dodatno unet* ‘natural/supplemental’ (hormones in the human body) or *uspeh/mir* ‘success/peace’ (an analogue of being popular versus living a peaceful life). Although such pairs are used in the corpus in a way similar to the canonical pairs, non-typical context-dependent contrast pairs have been neglected in theoretical classifications. These results provide evidence that antonymy includes a much wider range of pairs than has previously been recognized. One reason why the antonym of a word can vary according to context is the fact that words are polysemous, and different senses of a single word may require different antonyms; such is the case for a number of antonyms of *prirodan* ‘natural’ retrieved in this research (e.g. ‘natural/artificial’, ‘natural/man-made’, ‘natural/synthetic’, ‘natural/social’, etc.). Murphy and Andrew (1993) gave experimental evidence that people recognize different antonyms for adjectives according to the nouns that the adjectives modify. For example, the antonym of the sense of ‘fresh’ in *fresh fish* is different from that in *fresh bread* or *fresh shirt*.

For many of these, we might say that the antonym is associated with a particular sense of the given adjective, in which case semantic considerations are as important as pragmatic ones; the role of the context is to point out which sense is relevant. However, not only does the relation of contrast vary by word sense (as is noted in the literature), but it can also vary by context, regardless of sense variation. In contrast to, say, *uspeh* ‘success’, language users can put a very unrelated noun, like *mir* ‘peace’, if ‘success’ and ‘peace’ are in complementary distribution in some context (e.g. *Ako već moram da biram između uspeha i mira, biram mir* ‘If I have to choose between being successful and having peace, I choose peace’), thus occupying the same type of linguistic context in which we find other cases of binary semantic contrast. The only difference here is that the contrast between ‘success’ and ‘peace’ is dependent upon contextual knowledge in a way that the opposition between ‘success’ and ‘failure’ is not.

4. Conclusion

Results of corpus-based investigations provide support for treating antonymy as a conceptual relation and as a linguistic category which exhibits prototypicality effects. There is a select group of antonyms which are particularly strongly associated in memory, but the conceptual structures are the cause of antonym couplings, not an effect. This approach predicts a category with a continuum structure with a small number of core members associated with particularly salient dimensions, and a range of non-conventionalized antonym pairings which belong to the same type of relation as the conventionalized ones. The relational principle Relation by Contrast-Lexical Contrast (RC-LC), as proposed within the conceptual approach to antonymy (Murphy, 2003), is able to explain why we can recognize that words are semantically related, although we may never have experienced them as related before. It can account for the derivability of contrast relation between any form-meaning pairing construed as opposites in discourse. As noted before, the degree of contrast may vary, and range from conventionalized pairs strongly entrenched in memory and mental lexicon to strongly contextually motivated pairings. An important difference between the canonical pairing and all others is that the latter are dependent on contextual knowledge whereas canonical pairs are not.

The creation of textual antonymous profiles by means of antonymous patterns enlarges our understanding of this relation and has implications as to which pairs can be treated as antonyms. Corpus-based investigations of antonymous patterns may find a larger number of contrastive pairs that include not only already known pairs, but also novel instances of binary semantic contrast, that are usually not studied or discussed by theoretical linguists, as well as those that are contrastive only in certain contexts and domains. Results of corpus-based investigations support the conceptual approach that views antonymy as a conceptual construal dependent on the conceptual dimension that unites the antonyms on the occurrence of use.

References:

- Charles, W. G., & Miller, G. A. (1989). Contexts of antonymous adjectives. *Applied Psycholinguistics*, 10(3), 357-375.
- Charles, W. G., Reed, M. A., & Derryberry, D. (1994). Conceptual and associative processing in antonymy and synonymy. *Applied Psycholinguistics*, 15, 329-354.
- Cruse, D. A. (1986). *Lexical semantics*. Cambridge: Cambridge University Press.
- Davies, M. (2013). *Oppositions and ideology in news discourse*. London: Bloomsbury.
- Deese, J. (1965). *The structure of associations in language and thought*. Baltimore: Johns Hopkins University Press.
- Fellbaum, C. (1998). *WordNet: An electronic lexical database*. Cambridge, MA: MIT Press.
- Gross, D., & Miller, K. J. (1990). Adjectives in WorNet. *International Journal of Lexicography*, 3(4), 265-277.
- Gross, D., Fischer, U., & Miller, G. A. (1989). The organization of adjectival meaning. *Journal of Memory and Language*, 28, 92-106.
- Herrmann, D. J., Chaffin, R., Conti, G., Peters, D., & Robbins, P. H. (1979). Comprehension of antonymy and the generality of categorization models. *Journal of Experimental Psychology: Human Learning and Memory*, 5, 585-597.
- Herrmann, D. J., Chaffin, R., Daniel, M. P., & Wool, R. S. (1986). The role of elements of relation definition in antonym and synonym comprehension. *Zeitschrift für Psychologie*, 194, 133-153.
- Hsu, C. C. (2015). A syntagmatic analysis of antonym co-occurrences in Chinese: contrastive constructions and co-occurrence sequences. *Corpora*, 10(1), 47-82.
- Jones, S. (2002). *Antonymy: A corpus-based perspective*. London and New York: Routledge.
- Jones, S. (2006). Antonym co-occurrence in spoken English. *Text and Talk*, 26(2), 191-216.
- Jones, S. (2007). 'Opposites' in discourse: A comparison of antonym use across four domains. *Journal of Pragmatics*, 39(6), 1105-1119.
- Jones, S., & Murphy, M. L. (2005). Using corpora to investigate antonym acquisition. *International Journal of Corpus Linguistics*, 10(3), 401-422.
- Jones, S., Paradis, C., Murphy, M. L., & Willners, C. (2007). Googling for opposites: a web-based study of antonym canonicity. *Corpora*, 2(2), 129-154.
- Kostić, N. (2011). Antonymous frameworks in Serbian written discourse: phrasal contexts of antonym co-occurrence in text. *Poznań Studies in Contemporary Linguistics*, 47(3), 509-537.
- Kostić, N. (2015a). Antonymy in language use: from core members to *ad hoc* couplings. *Poznań Studies in Contemporary Linguistics*, 51(1), 133-161.
- Kostić, N. (2015b). The textual profile of antonyms: a corpus-based study. *Linguistics*, 53(4), 649-575.
- Lyons, J. (1977). *Semantics*. Cambridge: Cambridge University Press.
- Muehleisen, V., & Isono, M. (2009). Antonymous adjectives in Japanese discourse. *Journal of Pragmatics*, 41(11), 2185-2203.

- Murphy, G. L., & Andrew, J. M. (1993). The conceptual basis of antonymy and synonymy in adjectives. *Journal of Memory and Language*, 32, 301-319.
- Murphy, G. L. (2002). *The big book of concepts*. Cambridge, MA: The MIT Press
- Murphy, M. L. (2000). Knowledge of words versus knowledge about words: the conceptual basis of lexical relations. In B. Peeters (Ed.), *The lexicon– encyclopedia interface* (pp. 317-348). Amsterdam: Elsevier.
- Murphy, M. L. (2003). *Semantic relations and the lexicon*. Cambridge: Cambridge University Press.
- Murphy, M. L., & Jones, S. (2008). Antonyms in children's and child-directed speech. *First Language*, 28(4), 403-430.
- Murphy, M. L., Paradis, C., Willners, C., & Jones, S. (2009). Discourse functions of antonymy: a cross linguistic investigation of Swedish and English. *Journal of Pragmatics*, 41(11), 2159-2184.
- Palermo, D. S., & Jenkins, J. J. (1964). *Word association norms: grade school through college*. Minneapolis: University of Minnesota Press.
- Room, A. (1988). *A dictionary of contrasting pairs*. London: Routledge.
- Willners, C. (2001). *Antonyms in context. A corpus-based semantic analysis of Swedish descriptive adjective*. Working Papers, Department of Linguistics, Lund University.
- 40.