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Good, better and superb antonyms

a conceptual construal approach

Carita Paradis

1. Introduction

Characteristic of antonyms is that they share an important segment of meaning at the same time as they differ prominently along the same dimension (e.g. Cruse 1986). Antonymy comes in different guises in linguistic communication. At the one extreme, it shows up as conventionalized antonym pairs such as *good–bad*, *heavy–light*, *hot–cold* and *slow–fast*. At the other extreme, antonymy may be construed for purposes of originality or poetic effect, e.g. 'The most beautiful things are those that *madness* prompts and *reason* writes.' (André Gide), 'Timid men prefer the *calm* of *despotism* to the *tempestuous* sea of *liberty*.' (Thomas Jefferson) or 'A *joke* is a very *serious* thing.' (Winston Churchill). In between those two extremes, there are numerous pairings which language users consider to be less good pairings. When asked to make judgements about how good a pair of adjectives are as opposites, speakers regard *slow–fast* as a good example of a pair of strongly antonymic adjectives, while *slow–quick* and *slow–rapid* are perceived as less good pairings, and *fast–dull* a less good pairing than *slow–quick* and *slow–rapid*. All these pairs in turn are better examples of antonymy than pairs such as *slow–black* or synonyms such as *slow–dull* (Paradis et al. 2009).[1]

For quite a long time, research on antonymy, and lexico-semantic relations more generally, was tied up with the structuralist approach to meaning as a system of relations between words, leaving it separated from new developments into the dynamics of conceptual treatments and invisible to new observational techniques in linguistic research. With the growing sophistication of Cognitive Semantics as a theoretical framework and the development of computational facilities and experimental techniques, the foundation for research on antonymy has improved considerably. This paper offers a new take on antonymy as a lexico-semantic phenomenon in language and thought based on a combination of a series of recent textual and experimental investigations (e.g. Jones et al. 2007, Paradis & Willners 2007, Murphy et al. 2009, Paradis et al. 2009, Willners & Paradis forthcoming).

The primary goal of this article is to present a dynamic usage-based theoretical account for the category of antonymy that is capable of accommodating all kinds of antonym

[1] The way I use the term antonymy is as a cover term for form-meaning pairings that are used in binary opposition in language use. As will become clear in this article, binarity receives a BOUNDEDNESS definition of partition into twos in conceptual space and opposition is a construal based on dimensional alignment and comparison. In some of the literature, antonymy is confined to binary opposition between contrary meanings in language, such as *good–bad*, as opposed to other opposites in language, such as converses, e.g. *buy–sell* and complementaries, e.g. *dead–alive* (Lyons 1977, Cruse 1986, Croft & Cruse 2004, Paradis 1997, 2001, Lehrer 2002).

construals ranging from highly conventionalized lexico-semantic couplings to strongly contextually motivated pairings. The theoretical approach adopted is broadly that of Cognitive Semantics (Talmy 2000, Croft & Cruse 2004) and the model of meaning is Lexical Meaning as Ontologies and Construals (LOC, for short, Paradis 2005). The article starts with a general account of the treatment of antonyms within the Structuralist framework, followed by a report on a recent elicitation experiment on antonyms of adjectives, and a presentation of the Cognitive Semantic approach to lexical meaning and to antonymy.

2. Antonymy in Structuralism

The basic assumption of the nature of meaning in Saussurean Structuralism, is that every language is a unique relational system in which words receive their meanings from their relationships with other words in the same language system, i.e. meanings are not substantive but relational (Saussure 1959). This means that a word does not have an independent existence but derives its meaning from its position in a linguistic network. This also means that the sense of a word is the set of sense relations the word has with other words in the same lexical field. Within this approach, language is regarded as an autonomous, self-contained system of paradigmatic and syntagmatic relations between words. Language is often compared to a game of chess with rules and values (langue) and alternatives (parole). Langue is thus the language system that underlies the language put to use in a certain language community.

Lyons (1977: 239–240) makes use of the notions language system and language behaviour, respectively. He points out that Saussure's doctrine of the language system is not entirely clear. On the contrary, it has given rise to a lot of controversy in the literature. Saussure emphasized the supra-individual and social nature of the language system; and yet he held the view that it also had psychological validity in being stored in people's brains. Not all structuralists conceived of the nature of meaning as Saussure did, but rather as a reflection of the external world. Lyons goes on to say that linguists working within the structuralist framework argue about whether there is an underlying universal system or not and many will deny that this system is internalized. What is clear is that the structuralist focus is on language as an externalized object and not on something in the mind of the language users.

Lexico-semantic relations are of two orthogonally opposed types: paradigmatic and syntagmatic relations. Lyons (1977: 270–317) is mainly concerned with lexico-semantic relations from a paradigmatic point of view, focusing on relations such as antonymy, synonymy and hyponomy. Paradigmatic relations hold between lexical items which are intersubstitutable in a given position in a syntagm. In contrast, the syntagmatic approach, or the contextual/use approach, defines the meaning of a word as its uses across its grammatical occurrences (Firth 1957, Cruse 1986, Sinclair 1987). The Firthian dictum has it that "You shall know the meaning of a word by the company it keeps" (Firth 1957: 179) and collocation is a key notion. Cruse (1986), which is an important piece of work in the structuralist approach to word meaning and sense relations, is a cross between the two approaches. The individual chapters of his book are devoted to the two different types of sense relations, but he explicitly says that the approach adopted is a variety of the contextual approach (1986: 1). Cruse assumes that the semantic properties of lexical items are fully reflected in the relations they contract within actual and potential contexts, semantic as well as grammatical. The main disadvantage of the structuralist approach to meaning is that it is a static system where words have set meaning in the relational network. The theory does not provide any tools for explanations of lexical flexibility in how antonymy is used in language as illustrated by the

different examples in the introduction and, moreover, there is a want of empirical data in most of the literature on lexico-semantic relations in the structuralist tradition. It has become increasingly clear that it is of utmost importance for a theory of semantics to be able to account for the flexibility of lexical meaning in language use and meaning making.

3. Good, better and excellent antonyms

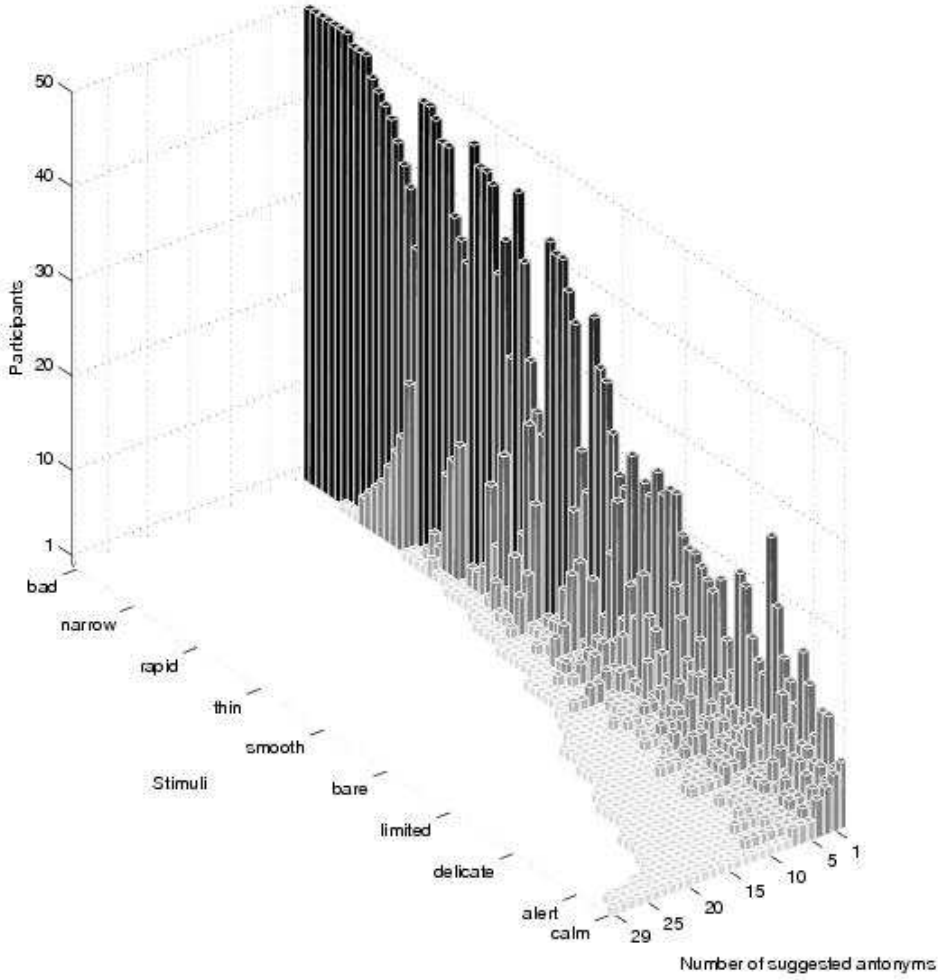
Paradis et al. (2009) and Willners & Paradis (forthcoming) carried out a series of investigations using both textual and experimental methods. Our focus in those studies is on adjectives since they are the types of form-meaning pairings most commonly associated with antonymy. The aim of the investigations was to identify whether there are two types of antonyms, canonical or non-canonical, or whether the strength and goodness of opposability is a matter of a continuum of canonicity. One of the experiments, the judgement experiment, pointed up a dichotomy between excellent antonym pairings and other pairings, while the elicitation experiment indicates that antonymy is a cline from more to less strongly affiliated members. In order to demonstrate the importance of context, this articles focuses on the elicitation experiment, because the elicitation experiment very clearly highlights the fact that speakers make up their own contexts when they suggest the best partner.

The elicitation experiments were carried out using both English and Swedish test items. Since the results of both the English and Swedish experiments converge in a picture of the category of antonymic lexical meanings as a prototypicality structure with a small number of excellent antonym partners to category members on the outskirts for which a partner does not readily suggest itself, I report on only one of them – the English experiment. Fifty native speakers of English were asked to provide the best opposite of 85 individual test items in a paper-and-pencil elicitation task.

Figure 1 gives the complete three-dimensional picture of the responses. The X-axis shows the total number of the antonyms suggested across each stimulus word. The Y-axis lists all the 85 stimuli of which every tenth word is supplied along the axis, while the Z-axis shows the number of participant responses per antonym. The bars represent the various elicited antonyms in response to the test items. The height of the bars indicates the number of participants who suggested the antonym in question. There is a gradual decrease across stimuli in participant agreement of the best antonym for a given word. The low bars at the front represent a single antonym suggested by one experiment participant.

The adjectives at the top of the structure are very frequent in language use, both in terms of their individual and their co-occurrence frequency. Using a Spearman rank order correlation test, I found that there is a correlation between the individual frequency of the test items and the number of antonyms suggested by the participants in the elicitation experiment. The coefficient was – 0.62 and the correlation is significant at the 0.01 level (two-tailed). For figures on co-occurrence, see Paradis et al. (2009).This does not mean that items that are less frequent in language cannot form strongly conventionalized pairings. For instance, had we included verbs, it is most likely that maximize – minimize would have scored high both in terms of sentential co-occurrence and in the experimental investigations, as indeed was shown by Herrmann et al. (1986). The same was shown by Jones et al.'s (2007) web study of antonyms in constructions in text.

Figure 1 The distribution of English antonyms in the Elicitation experiment. The Y-axis lists the stimuli (85 all in all), with every tenth stimulus word written in full. The X-axis shows the number of antonyms suggested by the participants (from 1 to 29). The Z-axis records the number of participants supplying each of these antonyms (varying between 1 and 50) (Paradis et al. 2009).



At the top of the list of test items are the test items for which the participants only suggested one antonym: *bad* (*good*), *beautiful* (*ugly*), *clean* (*dirty*), *heavy* (*light*), *hot* (*cold*), *poor* (*rich*) and *weak* (*strong*), then the test items for which the participants suggested two opposites, e.g. *black* (*white, colour*), *narrow* (*wide, broad*) and *slow* (*fast, quick*), the stimulus words with three different answers and so on. The very last item is *calm*, for which 29 different antonyms were suggested by the 50 participants. The shape of the list of elicited antonyms strongly suggests a scale of canonicity from very good matches to test items with no preferred partners. Below is the complete list of antonyms suggested by the participants with the stimulus word in bold followed by the responses for each stimulus ordered according to falling frequency. The stimuli are ordered according to rising number of responses:

bad good
beautiful ugly
clean dirty
heavy light
hot cold
poor rich
weak strong
young old
black white colour
fast slow fast
narrow wide broad
slow fast quick
soft hard rough
good bad evil
hard soft easy
open closed shut
big small little
easy hard difficult
white black dark
light dark heavy
dark light pale
large small little slim
rapid slow sluggish fast
small big large tall
ugly beautiful pretty attractive
exciting boring dull unexciting
thick thin clever fine
strong weak feeble mild slight
wide narrow thin skinny slim
evil good kind angelic pure
thin fat thick overweight wide
sober drunk frivolous inebriated intoxicated pissed
filthy clean spotless immaculate pristine sparkling
huge tiny small little minute petite
sick well healthy fine ill yum
enormous tiny miniscule small little minute slight
dull bright exciting interesting shiny lively sharp
bright dark dull dim gloomy stupid obscure
fat thin slim lean skinny thick wrong
rare common comonplace ubiquitous frequent plentiful well-known
feeble strong robust hard impressive powerful steadfast
broad narrow thin slim small lean slight
smooth rough bumpy hard jagged hairy resistent
healthy unhealthy sick ill lame diseased poorly sickly
tiny huge large big enormous massive giant gigantic
lean fat fatty flabby large plump support stocky wide
heroic cowardly unheroic scared wimpish villainous disappointing reticent weak
glad sad unhappy sorry upset disappointed regretful cross worried
bare covered clothed dressed abundant cluttered full loaded patterned
slim fat broad big chubby wide large obese plump round
tough weak tender easy soft flimsy gentle sensitive weedy wimpy
gradual immediate sudden rapid fast quickly instant abrupt incremental swift
tired awake energetic alert lively fresh wakeful energized peppy perky rested
sudden gradual slow prolonged expected incremental immediate delayed foreseen infrequent predictable

idle busy active energetic hard-working working awake conscious diligent industrious pro-active workaholic
gloomy bright happy cheerful cheery light sunny clear illumined nice merry pleasant
tender tough rough hard well-done cold robust chewy harsh mean nash strong uncaring
pale dark bright tanned bold brown coloured red ruddy colourful healthy rosey swarthy vivid
nervous calm confident bold brave relaxed alert assured excited fine innervous ready steady uncaring
limited unlimited extensive abundent comprehensive endless plenty available broad capacious common fat infinite widespread
robust weak fragile feeble flimsy shoddy thin brittle frail lethagic natural skinny slim vunerable
fine thick coarse bad bold dull wide blunt clumsy cloudy mad ok rough wet unwell
abundant scarce rare sparse little lacking disciplined few limited needed none meagre plentiful sparing threadbare
pure impure tainted contaminated corrupt dirty tarnished evil adulterated bad foul mixture sinful unclean unpure
immaculate untidy dirty messy filthy scruffy dishevelled boring faulty ramshacky spotted stained tarnished terrible tawdry
civil uncivil rude anarchic barbaric belligerent childish corperate couth horrible impolite mean nasty military savage unfair
extensive limited small intensive narrow restricted brief minimal constrained inextensive insufficient scanty short superficial sparse unextensive vague
grim nice happy bright cheerful pleasant positive hopeful good pleasant carefree clear cosy fun jolly reassuring welcoming
slender fat broad plump wide bulky chubby thick well-built big chunky curvy lean massive obese podgy portly rotund
delicate robust strong tough sturdy hardy rough coarse unbreakable bold bulky crude course gross hard hard-wearing harsh heavy
immediate later delayed slow gradual distant deferred extended anon eventually far forever longterm pending postponed prolonged soon whenever
modest boastful immodest arrogant bigheaded brash conceited extravagant vain outgoing blasé confident forward ignorant modest proud quiet shy
great small rubbish terrible bad average awful crap dreadful insignificant lowlyl mediocre microscopic obscure ok shit tiny poor unremarkable
firm soft weak floppy lenient wobbly flexible flimsy gentle groundless relenting lax limp loose saggy shaky undecided unsolid unstable
confused clear understood knowing sure lucid organised certain alert clued-up clearheaded coherent comprehending confident enlightened fine focused notconfused scatty together
bold timid shy cowardly faint fine italic thin nervous cautious faded feint frightened hairy meek quiet scared timorous weak yellow
daring cowardly timid nervous scared boring carefully cautious shy afraid careful fat faltering fearful reticient safe staid undaring wimpish
mediocre outstanding excellent exceptional brilliant amazing good great challenging charge clever extreme fair interesting mediocre rare special superb unusual wicked
yielding unyielding firm resisting dormant hard stubborn agressive dying fighting fixed lose losing obdurate rigid steadfast steamrollering strong stuck tough unproductive
irritated calm content relaxed amused fine placid serene soothed comfortable easy even good-humoured happy laid-back normal ok patient pleased tranquil unperturbed unruffled
alert sleepy tired asleep dozy oblivious distracted dull drowsy groggy lazy slow apathetic awake complacent dim dopey lethargic spacey torpid unaware unconscious unresponsive
disturbed calm undisturbed sane peaceful settled stable untouched alone balanced content fine ignored normal quiet relaxed together tranquil unaffected uninterrupted untroubled welcome well-adjusted well-balanced
slight large great strong big heavy considerable enormous huge major substantial very alot extensive heavyset lots marked massive plenty pronounced robust rough severe thick unslight well-built wide
delightful horrible awful unpleasant boring disgusting repulsive tedious abhorrent annoying crap difficult distasteful dredful dull grim hateful horrendous horrid irritating miserable nasty repellent revolting rubbish terrible uninteresting yuk
calm stressed stormy rough agitated excited hyper panicked angry annoyed anxious choppy crazy flustered frantic frenzied hectic hubbub hysterical irrate irrational jumpy lively loud nervous neurotic rage reckless tense troubled

The pairings at the beginning of the list are the ones that we as speakers of English consider to be excellent examples of antonyms. They may be regarded as conventionalized antonym pairings in language and the meaning dimensions on which they are based are dimensions such as MERIT, BEAUTY, WEIGHT, TEMPERATURE etc. Those dimensions are salient in the sense that they are easily identifiable by us as language users. For instance, any adult speaker of English would be able to identify the SPEED dimension underlying *slow–fast*, while the dimensions of, say, *rare–abundant*, *calm–disturbed*, *lean–fat* or *narrow–open* appear to have a less transparent application with respect to the shared content dimension and would consequently create a fair amount of uncertainty among speakers. The results of the investigations also suggest that polysemy as such does not prevent a word from participating in strongly conventionalized couplings with other words, e.g. *light–dark* and *light–heavy* or *narrow–wide* and *narrow–open*. What this seems to tell us is that contextual versatility is a reflection of ontological versatility, i.e. that the use potential of these antonyms applies in a wide range of contentful ontological contexts, and that they are frequent in constructions and contrasting frames in text and discourse – nothing more nothing less.

This context sensitivity can also be seen in corpus studies of antonym use (Willners 2001, Jones 2002, 2007, Jones et al. 2007, Murphy et al. 2009, Muehleisen & Isono 2009, Storjohann 2009, Gries & Otani submitted) and in the result of lexicographic work with machine-readable corpora where collocational patternings in text are important indications of the flexibility of the use of the seed words (Vachová 2008). There is no obvious way of accounting for meaning flexibility of word meaning in general within the structuralist

framework, because there are no tools for how to deal with flexibility in use and meaning-making. For this reason I propose a model of meaning that has a dynamic component. The model is introduced in the next section.

4. Antonymy in Cognitive Semantics

A leading principle in Cognitive Semantics is that meanings are mental entities in conceptual space. Meanings are in people's minds rather than relations within language, as in Structuralism. Words and expressions do not 'have' meanings but are cues for making inferences that promote adequate reasoning and understanding (Verhagen 2005:22). Words and expressions evoke specific profilings of conceptual structures when they are used in text and discourse. Lexical meaning is the relation between the relevant part of the total meaning potential of words and expressions in context on the occurrence of use. Lexical meaning is constrained by encyclopaedic knowledge, conventionalized mappings between lexical items and concepts and conventional modes of thought in different contexts and situational frames (Cruse 2002, Paradis 2001, 2003, 2005, 2008). According to this view, meanings of words are always negotiated and get their definite interpretations in the specific context where they are used. Multiple readings of words and expressions are natural and expected in a dynamic model such as LOC.

Language users' creation of meaning in linguistic communication can be compared to artists' creation of works of art. For instance, when painters paint in oil or sculptors carve a statue out of a block of marble, they are all occupied with a substance that we may think of as shape neutral and size neutral. This substance is similar to the conceptual pre-meanings of the LOC model described below. Artists produce something that has both shape and size, e.g. a painting of a landscape or a statue of a person. Similarly, this is what speakers and addressees are doing when they communicate. We may say that language in use starts with undifferentiated substance which obtains shape and size in human communication. Pre-meanings of contentful and configurational conceptual structures provide the undifferentiated substance for construals in the act of communication. The model is Lexical Meaning as Ontologies and Construals (Paradis 2005). It offers the tools for explaining as well as the differences in opposability and lexico-semantic strength of antonyms in use. In LOC, conceptual space is structured relative to two types of ontological knowledge structures: contentful and configurational structures (see Table 1).

Ontologies (conceptual structures)		Cognitive processes
Content	Configurations	Construals
CONCRETE PHENOMENA EVENTS, PROCESSES, STATES ABSTRACT PHENOMENA	PART/WHOLE, THING, RELATION, BOUNDEDNESS, SCALE, DEGREE, POINT, FREQUENCY, FOCUS, PATH, ORDER, MODALITY, …	*Gestalt*: e.g. structural schematization *Salience* : e.g. metonymization, generalization, profiling *Comparison*: e.g. metaphorization, categorization, analogy *Perspective*: e.g. foregrounding /backgrounding, subjectification

Table 1. *Ontologies and cognitive processes in meaning construction, adapted from Paradis (2005).*

Both types of structures are conceptual pre-meanings. Content structures involve meaning proper, i.e. meaning structures pertaining to THINGS, EVENTS and STATES, and configurations or schemas such as BOUNDNESS and SCALE. In addition to these conceptual representations, there is an operating system consisting of different types of *construals* such as assignment of focus of attention (salience) and Gestalt. Language put to use in human communication comes about through construal operation which are imposed on the concepts by speakers and addressees at the time of use. At that time, the definite contextual meaning construal is established (Paradis 2004, 2005, 2008). A great deal of flexibility is built into LOC in that configurational concepts are considered to be free structures that are mapped onto different content domains. This way of meaning modelling sets configuration free from contentful meanings. This also makes it possible for us to apply different configurations of one and the same contentful meaning structure. For instance, there is the construal of different parts of speech on the basis of LENGTH, as in *long, length* and *lengthen* (Paradis 2005:546–549), or the construal of content structures on the basis of SCALE or BOUNDARY as in *very bad*, which is construed on the basis of a SCALE and *completely bad* where a BOUNDARY is profiled (Paradis 2008). Some meanings are more adaptable to different configurational construals. For instance, *very long* is perfectly felicitous, while *completely long* is strange. The advantage of LOC is that it is a highly dynamic model in which we are able to handle conventionalized as well as more *ad hoc* couplings between configuration and content.

Some lexical meanings are well suited for antonymic configuration construals in that they are inherently binary and have a built-in twoness, e.g. *male–female* (Croft & Cruse 2004:164–165). However, this is not enough for a construal of antonymy since opposability also involves an element of comparison. The contrasting meanings have to be opposed in discourse. Murphy (2003:45) argues for a general pragmatic principle, the Relation-by-Contrast, governing all semantic relations, i.e. antonymy, synonymy, co-hyponymy, hyponymy and meronymy. The principle defines relations on the basis of minimal differences. For antonyms the contrast relation holds among the members of a pair, if and only if they have the same contextually relevant properties but one. I take this pragmatic definition as my point of departure and complement it with my cognitive semantic approach to antonymy, which offers an explanation for antonymy in language and thought and which also offers an account for why some lexical items tend to form set couplings.

When two meanings are used as antonyms in a context, they are construed as representing two sides of a dimension of meaning, and the binary contrast expressed is invoked through a process of comparison. LOC provides us with a contentful dimension of meaning which might be LENGTH, EXISTENCE, GENDER and a BOUNDED configuration. This way, a dichotomy can be set up, and the two opposites are located on either side of the boundary and contrasted through comparison in the context where they occur. This means that according to this view, all antonyms are all equal in the sense that the category does not have internal structure – either a pair along a meaning dimension divided by a boundary is or is not a pair of antonyms, and they are only antonyms if they are used in binary opposition in a given context. Granted that antonyms are used to express binary opposition, any dimensionally alignable meanings can be construed as a pair of antonyms, including everything from "What's the opposite of *riot*? It's *lots of people keeping quiet*." (Wilbur 1973:8) through pairings such us "it is neither *good*, nor *bad*" and negated oppositions "these flowers are both *beautiful* and *not beautiful*"(Paradis & Willners 2006, forthcoming), or indeed construed in a fashion where one side of the contrast is left implicit, e.g. "I am *not your maid*!", which very clearly points up the opposite of what a maid is supposed to do. It deserves to be pointed out that this is not the case for the corresponding affirmation, unless the expression is used ironically (Giora et al. 2009, Giora et al. forthcoming). In order to be able to explain degrees of goodness of opposability, we need a modelling component of

conceptual structures and an operational component for the profiling of meanings in use and interpretation. For this reason we turn our focus of attention from antonymy as configuration to construal to antonymy in terms of content and strength of lexico-semantic conventionalization in language.

5. Summary

Within the framework of Lexical Meaning as Ontologies and Construals (LOC), antonymy is treated as a binary opposition of some content structure. More precisely, it is a binary construal of comparison in which the contentful dimension is divided by a BOUNDED configuration. The configuration of BOUNDEDNESS constitutes an absolute and necessary requirement for meanings in a certain content segment to be used as antonyms (irrespective of whether the configuration of the opposing elements against which the contrast is profiled is BOUNDED or UNBOUNDED). In terms of the lexico-semantic couplings with focus on the contentful structures, some pairings are 'better' pairings of binary opposition than others. The structure of antonymy from the point of view of the content segment is one of a continuum, with canonical pairings as core members and *ad hoc* couplings on the outskirts.

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