Evaluative polarity of antonyms

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EVALUATIVE POLARITY OF ANTONYMS

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ABSTRACT: This study investigates speakers' assessment of the evaluative polarity of the members of eight antonym pairs, e.g., *fast–slow* and *warm–cold,* that are not inherently evaluative, unlike antonyms such as *good–bad, ugly–beautiful.* The contentful structures foregrounded by *fast–slow* and *warm–cold* are SPEED and TEMPERATURE, repectively, but the properties that they evoke may also be profiled against a dimension of positive and negative polarity. In this article we adapt the Implicit Association Test (IAT) to measure whether speakers in fact associate such antonym pairs with positivity and negativity, and if they do, which is positive and which is negative. The results of the experiments show clear and consistent polarity patterns across the antonym pairs under investigation, i.e. one of the members of a pair of antonyms is more readily associated with negativity and the other with positivity.

KEYWORDS: opposite, adjectives, positive, negative, Implicit Association Test, valence

1. INTRODUCTION[*]

According to ancient Chinese philosophy, there are three characteristics that are fundamental to human thinking. They are (i) the bipolar organization of dimensions of cognition, (ii) the attribution of positive polarity to Yang and negative polarity to Yin and (iii) the parallelism in the orientation of the dimensions in terms of positivity and negativity (Osgood & Richards, 1973). The literal meanings of Yang and Yin are 'light' and 'dark', and in Chinese philosophy, they are used to describe how such opposites are interconnected and dependent on one another in real life, and how they thereby also give rise to one another, suggesting that opposites only exist in relation with one another. This is also a very apt description of antonyms in language. In accordance with the cognitive-functional approach that meanings of words in language are evoked at the time of use in text and discourse (Paradis 2005), our definition of antonymy states that two words or two constructions are antonyms when they are used to express binary opposition in discourse. However, there is a small number of antonym pairs that have special status as canonical antonyms in language. They include adjectives such as *good* and *bad* in (1) and *beautiful* and *ugly* in (2) (Paradis & Willners, 2011, Jones, Murphy, Paradis & Willners, 2012).

(1) I'd rather have one *good* friend than one hundred *bad* friends.

(2) Chumps prefer a *beautiful* lie to an *ugly* truth.

The meanings of the two antonym pairs in (1) and (2) are configured as interrelated opposite properties along a scalar dimension of MERIT and BEAUTY respectively, with the opposing properties at either end of the scale structure. Their meanings are mutually exclusive in the same context, i.e. something cannot be both *good* and *bad* or *beautiful* and *ugly* at the same time. Antonym meanings are both maximally different and maximally similar at the same time (Cruse, 1986, Murphy, 2003, Crutch, Williams, Ridgway & Borgenicht, 2012, Willners, Paradis, van de Weijer & Löhndorf, in prep). They are maximally different in that they evoke opposite properties

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of a configuration, which may be a scalar unbounded configuration as in the case of the pairs in (1) and (2), or a bounded configuration as for antonym meanings such as *dead* and *alive*, or *open* and *closed* (Paradis, 2001, Paradis & Willners, 2011). They are also maximally similar in the sense that they evoke properties of the same contentful meaning dimension, such as MERIT, BEAUTY, EXISTENCE or APERTURE. In addition, and as a feature of maximal difference across the pairs, the members may be associated with positive polarity and/or negative polarity, both in terms of logical polarity concerning the truth or falsity of propositions, and in terms of evaluative polarity i.e. positive (commendatory) sentiments and negative (derogatory) sentiments (Cruse, 2001).

While evaluative polarity is foregrounded and inherently bound up with the meanings of *good* and *bad* (MERIT), *beautiful* and *ugly* (BEAUTY) in (1) and (2), that is not the case for pairs such as *fast* and *slow* and *warm* and *cold*. At first glance, *slow* and *cold* may be seen as associated to negative polarity and *fast* and *warm* with positive sentiments, but there are also scenarios where the opposite situation may hold.[1] For instance, for many people 'fast food' is associated with negative sentiments, while for others with positive polarity. Similarly, *warm* may often be thought of as positive, as in *a warm welcome*, but in the context of the temperature of, say, *beer* it may convey negativity.

As part of our current project on contrast in language, thought and memory, Willners, Paradis, van de Weijer & Löhndorf (in preparation) also investigate the evaluative polarity of canonical antonym pairs in text using the *British National Corpus*. That study of the use of antonym pairs, 21 pairs all in all, includes both inherently evaluative pairs, such as *good* and *bad*, and pairs such as *warm– cold* and *soft–hard*. The analysis of their use in discourse has revealed that the members of the pairs are used differently with respect to the evaluative polarities evoked in communication. For instance, the adjective *soft* occurs more often in positive contexts in comparison with *hard*, which occurs more often in negative contexts. This suggests that the characteristics of evaluative polarity may also apply to antonyms that are not inherently evaluative, but the entrenchment of their usage patterns in discourse may facilitate and prompt either a positive interpretation or a negative interpretation. This possibility inspired us to set up the current experiment of evaluative polarity to establish whether evaluative polarity is indeed an entrenched dimension of the use potential of

[1] It should be noted that in contrast to the English temparture antonyms (*hot – cold*, *warm – cool*), there is only one set of canonical temperature terms in Swedish: *varm* and *kall.* We translate them into *warm–cold*.

the words and therefore also part and parcel of native speakers' lexical knowledge about these words.

In order to find out whether evaluative polarity is associated with speakers' knowledge about the members of canonical antonyms, this study examines participants' readiness to form associations between positive or negative polarity and the members of a set of eight antonym pairs. The hypothesis is that the members of each of the antonym pairs have a bias towards opposing valence. We make use of the Implicit Association Test (IAT, Greenwald, McGhee and Schwartz, 1998), a paradigm often used in social psychology to test participants' implicit attitudes to various issues, adapting it for a linguistic purpose, where we investigate whether canonical antonym pairs other than the clearly evaluative ones are in fact also associated with opposite evaluative polarities. Measuring response times, we examine this issue as a function of the speed with which participants couple the members of the antonym pairs with positivity and negativity, respectively. In this context, it is important to point out that our approach to lexical knowledge is that words do not 'have' meanings, but they are associated with a meaning/use potential in conceptual space that has been built up in the speaker's mind on the basis of how words are used in human communication (Cruse 2002, Paradis 2005, 2008, Paradis & Willners 2011). Lexical knowledge is both fostered and constrained by how words are used in different linguistic, discursive and social contexts in human communication, which of course includes valence too.

The outline of the article is as follows: In the next section, we outline the methodological details of the experiment, i.e. the pre-test carried out in order to select the antonym pairs (2.1), the IAT experiment (2.2), and the design and the analytical procedure (2.3). The results are presented in Section 3 and subsequently analyzed and discussed in Section 4, which also concludes the article. The experiment was carried out in the Humanities Lab at Lund University, with native speakers of Swedish. In the descriptions below, the examples are translated into English in order to facilitate the task of the reader. A complete list of the original test words together with their translations is given in Appendix A and B.

2. METHOD

In the traditional IAT (Greenwald, McGhee and Schwartz, 1998), participants are instructed to categorize pre-defined targets into one of two groups, e.g., *black people* and *white people*, and attributes that may be associated with the targets, e.g. *pleasant* and *unpleasant*. In the course of such an experiment, the participants are expected to learn to associate the

target categories with each of the attribute categories and to respond as quickly as possible, e.g., *black* with *pleasant* and *white* with *unpleasant*. Subsequently, in the same experiment, the attribute categories change places, which reverses the associations, i.e., *black* with *unpleasant* and *white* with *pleasant*. The objective of the test is to establish whether one or the other of these associations is easier to make. This is exactly how IAT is used in the present study too. We make use of the IAT to examine how easily the associative link between positive or negative valence and the members of an antonym is established, but before we enter into the technicalities of the design and the procedure of the experiment, we describe the pre-test we used for the selection of the pairs.

2.1 Pre-test

The antonym pairs used in the experiment were selected through a pre-test, in which we asked participants to classify the members of a number of antonym pairs out of context as either primarily positive or primarily negative. The motivation for running a pre-test was to avoid including antonyms where participants unanimously agree that they are clearly positive or clearly negative, since our experiment targets antonyms in the grey zone in-between. The results of the pre-test, based on the judgments of 20 students from the Institute of Technology at Lund University are shown in Figure 1. As can be seen, the individual members of the antonym pairs displayed a polarity pattern. Some adjectives were consistently classified as either positive or negative by the participants, e.g., *good–bad*, while opinions differed for pairs such as *short–long* and *large–small*. In spite of the fact that speakers' opinions differ, it is obvious that there is a clear polarity bias, in that one of the members of the pair was predominantly associated with positivity, while the other one was interpreted as more negative. There were also members of antonym pairs that did not conform to the pattern. Notably, *thin* and *thick* were both classified as negative by most of the participants, and *empty* was classified as negative by all participants, while its counterpart *full* was classified both as positive and negative.[2] In other words, some members of antonym pairs appear to have a polarity bias, while others do not.

Based on the results of the pre-test, we selected the eight pairs of antonyms for the experiment: *large–small*, *heavy–light*, *soft–hard*, *long–*

[2] The mixed assessments of *full* is likely to be due to the fact that *full* has two different meanings in Swedish too: 'not empty' and 'drunk' in which case the latter is likely to be assessed as negative.

short, *slow–fast*, *cold–warm*, *thick–thin*, and *high–low*. These pairs have previously been found to be strongly coupled as antonyms in text as well as in experimental data of different kind, both in Swedish and in English (Paradis, Willners & Jones 2009, Willners & Paradis 2010). In the pre-test, the members of the pairs selected appeared to be prone to be either positively or negatively evaluated by the participants, but not consistently so. They appear in the grey zone in between the clear cases. As previously pointed out, *thin* and *thick* diverge from the other seven pairs in that both of them were negative in the pre-test. All the others tend to have a positive and a negative bias, see Figure 1.

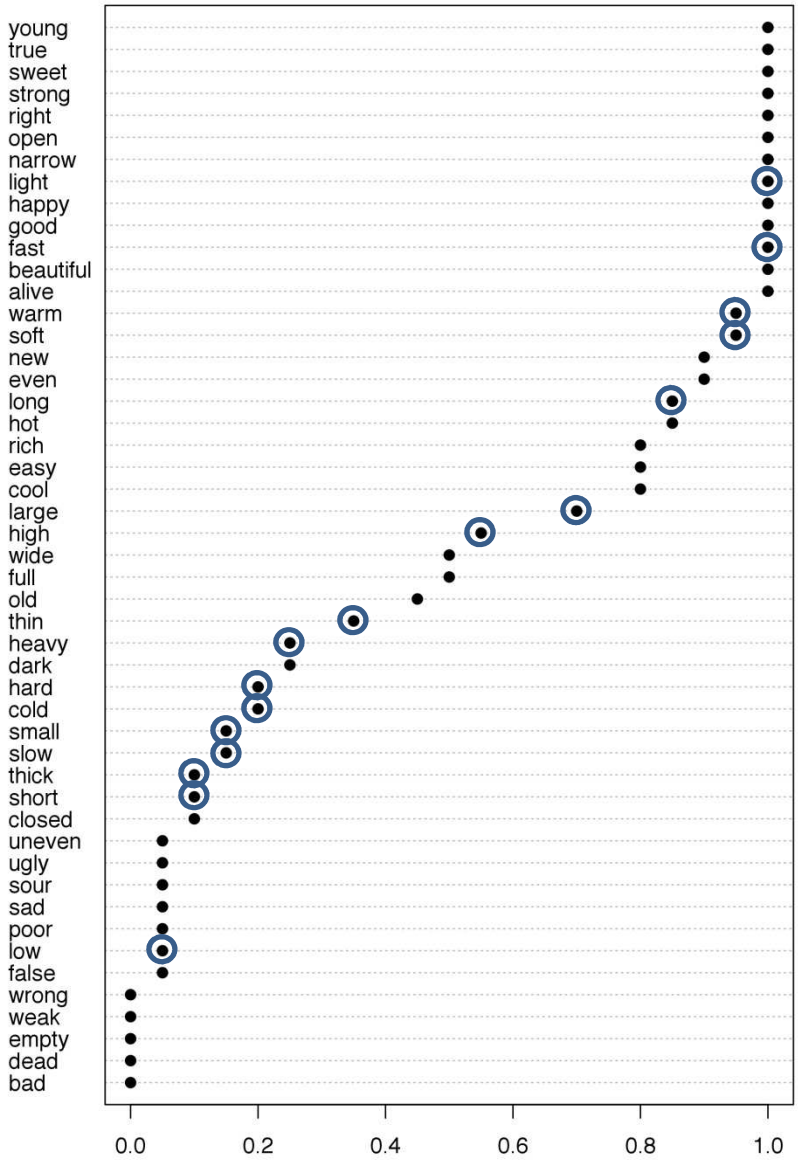

FIGURE 1. THE RESULTS OF THE PRE-TEST. THE DOTS REPRESENT THE PROPORTIONS OF PARTICIPANTS WHO CLASSIFIED AN ADJECTIVE AS 'POSITIVE'. THE CIRCLES MARK THE WORDS SLECTED FOR INCLUSION.

2.2 Materials

As already pointed out, our focus is on the valence value associated with the members of the pairs in the grey zone in between clear cases such as *good–bad*, as shown in Figure 1. In addition to the eight pairs selected through the pre-test, also a clear case of evaluative antonyms are included in the experiment, namely, *positive* and *negative*. They play a role in the experiment as associative protagonists and as part of the experiment design, as described in Section 2.3 below. Apart from *positive–negative*, the eight antonym pairs under investigation, mentioned in the previous section, are reiterated in Table 1.

Test set	
cold–warm	*soft–hard*
low–high	*short–long*
slow–fast	*small–large*
thin–thick	*heavy–light*

TABLE 1: ANTONYMS INCLUDED IN THE STUDY (TRANSLATED FROM SWEDISH, SEE APPENDIX A AND B).

Each member of the antonym pairs selected for inclusion through the pre-test was matched with 10 nouns in the IAT and so were *positive* and *negative*. The nouns were all selected to interact with the contentful dimension evoked by the antonymic pair, i.e. SIZE for *large–small*, TEMPERATURE for *warm–cold*, and VALENCE for *positive–negative.* The nouns selected to interact with *positive* and *negative* are all inherently evaluative, while the nouns selected for the other pairs were selected to be as neutral as possible. A complete list of the nouns used as test items for each of the adjectives, with English translations, is given in Appendix A and for *positive* and *negative*, also with English translations, in Appendix B.

The nouns selected to interact with *positive* and *negative* were selected from a list of evaluative words compiled by Stenberg, Wiking & Dahl (1998). Their list consists of 288 words on a scale from –3 to +3 indicating whether the word elicited a very negative or a very positive response. From that list, we then selected ten nouns with an average rating lower than –2.4, and ten nouns with an average rating higher than +2.0. The nouns selected for *positive* and *negative* are given in Table 2.

Furthermore, the nouns selected for the 8 antonym pairs that form part of the test items proper were selected by the analysts on the basis of corpus searches. Three of the analysts and one person external to the group assessed the naturalness of the use of the combinations of the adjectives and the nouns, using a language corpus (KORP, http://spraakbanken.gu.se/) and Google. In Table 2, we use *large* and *small* as an example to describe the selection principle. All lists are given in Appendix A. The meanings of the nouns that appear with the 8 pairs combine in a natural way with the properties expressed by the members of the pairs. For instance, *large* and *small* respectively denote things or animals that people consider to be large or small and the nouns are chosen in accordance with these opposite properties of the dimension of SIZE.

positive	*negative*	*large*	*small*
esteem	cancer	assembly hall	ant
happiness	disgust	cathedral	baby
love	evil	container	bit to taste
mate	murder	continent	dwarf
passion	plague	dinosaur	mouse
pleasure	sadist	elephant	pea
success	torture	jumbo jet	puppy
trust	tumour	lorry	seed
victory	tyrant	tsunami	teaspoon
wisdom	war	universe	tooth goblin[3]

TABLE 2: STIMULUS WORDS (TRANSLATED FROM SWEDISH, SEE APPENDIX A AND B).

2.2 The Implicit Association Task

The experiment consists of five blocks, depicted in Figure 2. Response times were logged for all five blocks.

[3]The notion of tooth goblins comes from a Norwegian story book for children from 1949 by Thorbjørn Egner called *Karius og Baktus*. These nasty goblins create holes in children's teeth, if they do not brush them properly. It is a well-known word in Swedish.

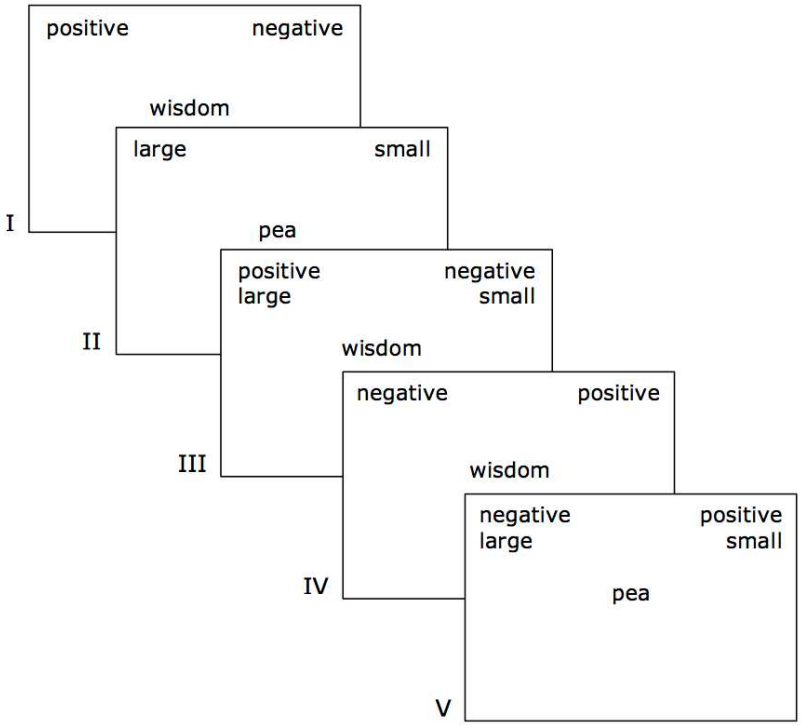

FIGURE 2. SCHEMATIC REPRESENTATION OF THE EXPERIMENT.

In Block I, the participants were asked to classify a series of nouns as either positive or negative as quickly and accurately as possible. The labels *positive* and *negative* were displayed in the upper left-hand and upper right-hand corner of the computer screen, and the trial nouns appeared in sequence in the middle of the screen. The participants responded by pressing the left button for something positive, and the right button for something negative.

In Block II, the participants were asked to classify another series of nouns according to one pair of antonyms out of the eight pairs included in the experiment. We use *large* and *small* as an example to describe the procedure. The nouns refer to things or animals that people consider to be large or small. The labels *large* and *small* were displayed in the upper left-hand and upper right-hand corner respectively, and the trial nouns appeared sequentially in the middle of the screen.

In Block III, the nouns from Blocks I and II were mixed, and the

participants were instructed to classify them as either *positive or large*, or *negative or small*.

Block IV of the experiment was essentially the same as the Block I, except for the fact that the words *positive* and *negative* were reversed. Thus, the participants were asked to press the right button for something they felt to be positive, and the left button for something negative. The positions of the *positive* and *negative* on the screen were switched accordingly.

Finally, Block V was essentially the same as Block III, with the exception that the labels *positive* and *negative* were in the same place as in the Block IV. In other words, the participants were instructed to press the left button for something they felt to be *negative or large*, and the right button for something *positive or small*.

2.3 Experiment design and analysis

A total of 80 participants were tested, 41 female and 39 male participants, ten participant for each antonym pair. Their average age was 27.8 years, and they all reported Swedish as their first language. Every participant was tested on one antonym pair and ten participants were tested per pair. The position of the labels was counterbalanced across participants so that for half of the participants one of the adjectives was paired with the word *negative* first and with the word *positive* after that, and for the other half the adjectives were paired in the reversed order.

The participants received written instructions before each block in the experiment. They gave their responses by pressing the left or right button on a push-button box. The experiment was implemented using E-Prime (Psychology Software Tools, Pittsburgh, PA) and took about 10 minutes to complete. The participants received a lottery ticket for their time and effort.

In the analysis, we compare response times for the antonyms when paired with the label *negative* and the label *positive*. That is, we only analyzed responses given in Blocks III and V because we were primarily interested in establishing which adjectives paired most easily with the word *positive*, and which with the word *negative*.

3. RESULTS

Table 2 shows the average response times for each of the adjectives associated with either *positive* or *negative* evaluation. The fastest response within each pair is marked in bold, indicating the polarity bias of the

adjective. A total of ten measurements (slightly more than 0.5%) were excluded, either because the responses were erroneous, extremely fast, i.e., faster than 75 ms., or extremely slow, i.e. slower than 5000 ms.

	negative	positive	Interaction test
small	**1161**	1357	$\chi^2 = 16.980, df = 1, p < .05$
large	1431	**997**	
warm	1160	**1038**	$\chi^2 = 2.716, df = 1, \text{n. s.}$
cold	**926**	1032	
heavy	**961**	1313	$\chi^2 = 32.335, df = 1, p < .05$
light	1410	**878**	
high	1495	**1146**	$\chi^2 = 11.335, df = 1, p < .05$
low	**1109**	1370	
thin	1227	**1055**	$\chi^2 = 3.216, df = 1, \text{n. s.}$
thick	**1111**	1144	
long	1354	**1249**	$\chi^2 = 1.504, df = 1, \text{n. s.}$
short	**1206**	1272	
slow	**1222**	1504	$\chi^2 = 6.977, df = 1, p < .05$
fast	1527	**1303**	
soft	1215	**827**	$\chi^2 = 46.837, df = 1, p < .05$
hard	**773**	1131	

TABLE 2: RESPONSE TIME RESULTS. FASTER RESPONSES ARE IN BOLD.

Table 2 shows that we found an interaction for every pair in that when one member of the pair yielded faster responses with *positive*, the other member yielded faster responses with *negative*. Since our analysis concerns whether the observed interactions were significant or not, we repeatedly fitted two multilevel models to the data, one with the interaction included and the other one with only the two main effects. Each model also contained participant and test noun as random factors. The chi-square values in the right column are the test statistics for the interaction. They correspond to the difference between the deviance statistic for the simpler model, and that for the more complex model. The interaction was significant for five out of eight antonym pairs.

4. DISCUSSION

In the study reported in this article, we investigated evaluative polarity, an issue that, to our knowledge, has received considerable attention in the psychological literature, but which has not been studied experimentally with

focus on language, let alone with focus on antonyms.

Our results show a clear and consistent polarity pattern across the antonym pairs that we investigated, although not always significant. The experiment shows that when one of the members of a pair had shorter average response times in combination with the *positive*, the other member had shorter average response time when paired with *negative*. This finding suggests that evaluative polarity is a characteristic of canonical antonyms, even if the antonyms themselves are not inherently evaluative. By and large, the results of the IAT correspond to the results from the pre-test in that words that were classified as positive by most of the participants in the pre-test also had the shortest response times when paired with positivity in the IAT, and vice-versa. Language users appear to be implicitly aware of the valence values evoked by the members of the pairs. This in turn indicates that evaluative polarity may be an important structuring device of their lexical knowledge.

Our results do not provide an explanation as to how such polarity patterns come into existence and what their role is in the structure of the vocabulary more generally. Rather, it raises questions such as: Why do speakers primarily think of *fast* as something positive, and of *slow* as something negative? This is a question that will be addressed in future research. However, we would like to provide some suggestions already now.

The adjectives that we investigated are not inherently positive or negative, but they receive their valence status through the attitudes towards the objects or events they modify in the contexts in which they occur. For instance, *fast* is a desirable property in the context of computers, trains, cars in many cultures. These uses become entrenched in people's minds and therefore tend to be promoted as the natural choice and the preferred valence value.

As we already saw in the introduction, the importance of the contextual use for evaluative responses, the value pattern can also be reversed depending on the object being modified by the adjective in a given context. While this is true of all lexical interpretation, words may still have a bias for a certain value due to speakers' implicit knowledge of and about words and their meanings. While, in most contexts, it would be considered a positive thing for a *sweater* to be *warm* and *beer* to be *cold*, there are many cases where other contextual and cultural matters are more powerful. Moreover, a *high tone* may be considered to be as commendatory as a *low tone*, and a *thick thread* as commendatory as a *thin thread*. Yet, in spite of this there seems to be a certain bias in one or the other direction for these antonyms, which may be an indication that the use potential preferences of lexical items as experienced, memorized and 'known' by native speakers

also comprise evaluation. It might well be the case that evaluative polarity relates to a quantification of the underlying dimension that the antonym pair represents. The positive member is the one that is at the positive end of the scale, representing a high degree of the meaning dimension or having the property, whereas the negative member is the one at the negative end, representing a low degree or lacking the property designated by the dimension. Therefore, *fast*, denoting much speed, and *slow*, little speed, are associated with positivity and negativity respectively, in which case 'much' is considered to be positive and 'little' to be negative in the same way as 'up' is good and 'down' evokes something non-desirable in metaphor theory (Lakoff & Johnson 1980). This explanation appears to be valid for some of the adjectives that we investigate, but not for all. For instance, *thick* was more negative than *thin*, and *heavy* was more negative than *light*, which is not consistent with the final tentative explanation.

In conclusion, we found evidence for evaluative polarity in antonyms, but we believe that much more research is needed in order to fully understand the cause and the implications of this finding.

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Appendix A

kall ‘cold’	**varm ‘warm’**
frysbox ‘freezer’	bastu ‘sauna’
glaciär ‘glacier’	eld ‘fire’
glass ‘ice cream’	feber ‘fever’
igloo ‘igloo’	glöd ‘glow’
isbit ‘ice cube’	glögg ‘mulled wine’
kylskåp ‘fridge’	grill ‘BBQ’
nordanvind ‘northerly wind’	sol ‘sun’
rimfrost ‘rime’	sommar ‘summer’
snöflinga ‘snowflake’	ugn ‘oven’
vinter ‘winter’	öken ‘desert’
låg ‘low’	**hög ‘high’**
basröst ‘bass voice’	alptopp ‘Alp peak’
botten ‘bottom’	chef ‘manager’
depression ‘depression’	himmel ‘sky’
ebb ‘low tide’	mast ‘pole’
fotpall ‘foot stool’	pariserhjul ‘Ferris wheel’
husgrund ‘foundation of buildning’	skyskrapa ‘skyscraper’
reapris ‘bargain price’	stup ‘precipice’
slavlön ‘slave’s pay’	tall ‘pine tree’
stubbe ‘stump’	torn ‘tower’
tröskel ‘sill’	vattenfall ‘waterfalls’
långsam ‘slow’	**snabb ‘fast’**
ballad ‘ballad’	antilop ‘antelope’
jäsning ‘fermentation’	blixt ‘lightning’
karavan ‘procession’	jaguar ‘jaguar’
larv ‘caterpillar’	pil ‘arrow’
postgång ‘postal delivery’	racerbåt ‘racing boat’
pråm ‘barge’	raket ‘rocket’
rullator ‘walker frame’	sekund ‘second’
sengångare ‘sloth’	skott ‘shot’
sköldpadda ‘turtle’	sprinter ‘sprinter’
snigel ‘snail’	störtlopp ‘downhill race’
tunn ‘thin’	**tjock ‘thick’**
flor ‘face veil’	bibel ‘Bible’
folie ‘foil’	buddha ‘Buddha’
hårstrå ‘hair’	gröt ‘porridge’
kvist ‘twig’	julgris ‘Christmas pig’
löv ‘leaf’	stock ‘log’
rakblad ‘razor blade’	sumobrottare ‘sumo wrestler’
silkespapper ‘tissue paper’	täckjacka ‘quilted jacket’
spindelväv ‘spider web’	telefonkatalog ‘phone book’
tråd ‘thread’	vispgrädde ‘whipped cream’
äggskal ‘egg shell’	ölmage ‘beer belly’
hård ‘hard’	**mjuk ‘soft’**

berg ‘rock’	bomull ‘cotton’
betong ‘concrete’	ejderdun ‘eiderdown’
flinta ‘flint’	kind ‘cheek’
järn ‘iron’	kudde ‘pillow’
kamp ‘fight’	mossa ‘moss’
nöt ‘nut’	mule ‘muzzle’
planka ‘plank’	päls ‘fur’
slag ‘hit’	sammet ‘velvet’
smäll ‘slam’	silke ‘silk’
sten ‘stone’	skinn ‘skin’
kort ‘short’	**lång ‘long’**
blixtvisit ‘flying visit’	arm ‘arm’
fimp ‘cigarette end’	flod ‘river’
kafferast ‘coffee break’	kö ‘queue’
novell ‘short story’	maratonlopp ‘Marathon’
pling ‘ding-a-ling’	orm ‘snake’
sekund ‘second’	parad ‘parade’
shorts ‘shorts’	rymdresa ‘space trip’
snutt ‘snippet’	sekel ‘century’
stump ‘stump’	svans ‘tail’
ögonblick ‘moment’	tåg ‘train’
liten ‘small’	**stor ‘large’**
baby ‘baby’	aula ‘assembly hall’
dvärg ‘dwarf’	container ‘transport container’
frö ‘seed’	dinosaurie ‘dinosaur’
mus ‘mouse’	elefant ‘elephant’
myra ‘ant’	jumbojet ‘jumbo jet’
smakbit ‘bit to taste’	katedral ‘cathedral’
tandtroll ‘tooth goblin’	kontinent ‘continent’
tesked ‘tea spoon’	lastbil ‘truck’
valp ‘puppy’	tsunami ‘tsunami’
ärta ‘pea’	universum ‘universe’
lätt ‘light’	**tung ‘heavy’**
bris ‘breeze’	bly ‘lead’
fjäder ‘feather’	elefant ‘elephant’
fjäril ‘butterfly’	flygplan ‘aeroplane’
fjun ‘fluff’	grävmaskin ‘excavator’
linne ‘linen’	hantlar ‘dumb-bells’
luft ‘air’	klump ‘lump’
mygga ‘mosquito’	koffert ‘trunk’
pingisboll ‘ping pong ball’	lastbil ‘lorry’
smekning ‘caress’	noshörning ‘rhino’
snöflinga ‘snow flake’	sten ‘stone’

APPENDIX B

positiv 'positive'	**negativ 'negative'**
kärlek 'love'	cancer 'cancer'
kompis 'mate'	krig 'war'
lust 'pleasure'	mord 'murder'
lycka 'happiness'	ondska 'evil'
passion 'passion'	pest 'plague'
respekt 'esteem'	sadist 'sadist'
seger 'victory'	tortyr 'torture'
succé 'success'	tumör 'tumour'
tillit 'trust'	tyrann 'tyrant'
vishet 'wisdom'	äckel 'disgust'