

Contextualized and non-contextualized concreteness ratings

Maja Anđel, Mateusz-Milan Stanojević, Anita Peti-Stantić
Faculty of Humanities and Social Sciences, University of Zagreb
mandel@ffzg.hr, mmstanoje@ffzg.hr, anita.peti-stantic@ffzg.hr

Introduction

Concreteness/abstractness of different words is recognised as one of the most important psycholinguistic measures, whose “importance [...] for psycholinguistic and memory research is hard to overestimate” (Brysbaert et al. 2014). For this reason there are concreteness/abstractness rating lists for a variety of languages. A similar list has recently been produced for nouns, verbs and adjectives in Croatian (Peti-Stantić, Stanojević -2017). Such lists are based on rating words in isolation and do not take into consideration the polysemy of words, as well as the fact that context-free estimates rely on the creation of minimal context (Fauconnier 1994).

Aims

The aim of this paper is to explore to what extent different semantic contexts impact concreteness ratings. More specifically, we claim that contextualized concreteness ratings will yield different scores when tested on native speakers.

Methods

32 nouns from the list of 1000 nouns have been rated for concreteness by at least 30 native speakers of Croatian each. The nouns were selected based on their high or low combinatorial potential. The combinatorial potential was checked on 16 semantically ambiguous and 16 semantically non-ambiguous Croatian words. To determine semantic ambiguity, a qualitative analysis was performed in order to determine potential semantic groups within different collocations.

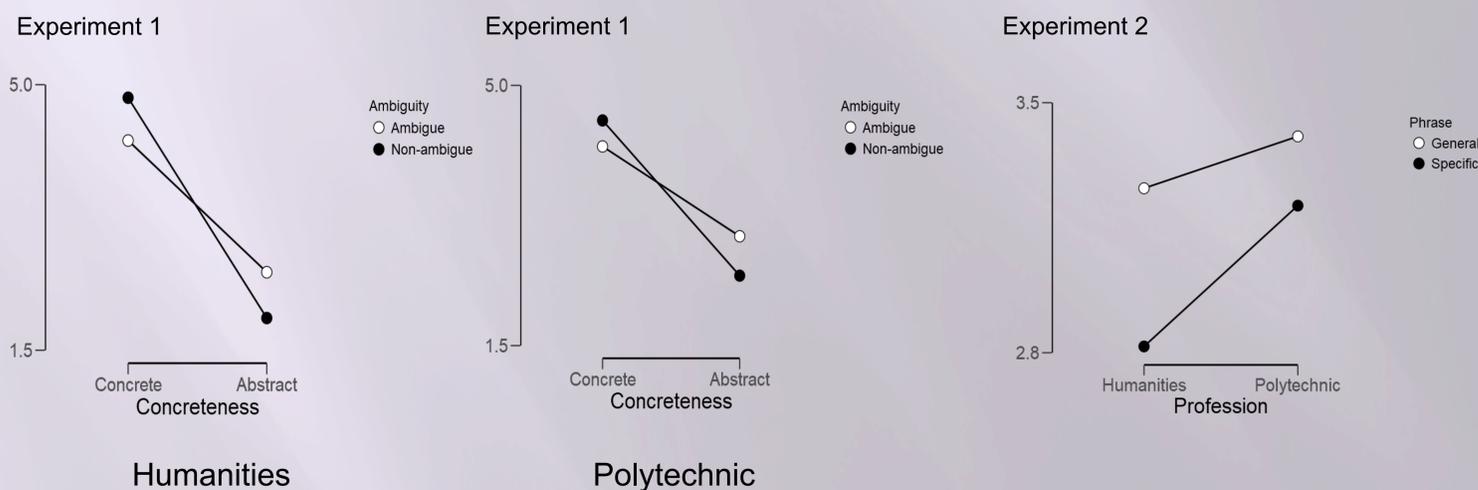
The selected nouns were used as input in three sets of experiments with 120 students of the Faculty of Humanities and Social Sciences, University of Zagreb, and 120 majoring in a STEM area at the Polytechnic of Zagreb.

1. Pen-and-paper concreteness rating of the 32 chosen words in isolation, tested on 30 students in each group.
2. Concreteness ratings of the same words in contexts - two-word phrases, controlled for semantic group and length. 60 participants in each group.
3. Lexical decision task – we checked for the variability and reaction time for selected words with respect to their concreteness or abstractness and in connection with different contexts, tested on 20 participants in each group.

Results

Conclusion

1. Experiment – rating words in isolation, scale 1 (abstract) – 5 (concrete). The patterns of concreteness ratings are the same for both groups, although the variance is different for concreteness ratings within the two professional groups.



Our main hypothesis, that the words in context receive different concreteness ratings, has been corroborated by the results of the first two experiments – concreteness ratings of words in isolation vs. words in context. If a word (along with its concept) in a specific context is frequent in someone’s mental lexicon, it will be rated as more concrete. The results of the lexical decision task, however, showed no difference in reaction times to specific vs. non-specific words.

2. Experiment – rating general phrases vs. professionally specific phrases
There is a significant ($p=0.009$) difference in concreteness ratings for general and specific phrases between students of Humanities and students of Polytechnic. Although the overall concreteness ratings are somewhat lower for the students of Humanities, the difference is not significant ($p=0.787$). However, there is a substantial difference in their ratings of professionally specific phrases, where students of Polytechnic rate phrases pertaining to their profession much more concretely than students of Humanities.

3. Experiment – lexical decision task on contextualized words (two-word phrases) rated in Experiment 2
No significant difference in reaction times was found in processing general vs. professionally specific contextualized words between the two participant groups.

Examples of tested words:

- General: topla struja (warm current), kreditna kartica (credit card)
- Professionally specific: slaba struja (weak current), grafička kartica (graphic processing unit)

Possible explanations:

- Not all information about a word is immediately retrievable when a quick reaction is required.
- Difference in reported reading habits of the two subject groups – frequent readers are quicker on the LD task.

References

- Brysbaert, Marc, Amy Beth Warriner, and Victor Kuperman (2014), Concreteness Ratings for 40 Thousand Generally Known English Word Lemmas, *Behavior Research Methods* 46 (3), 904–11. <https://doi.org/10.3758/s13428-013-0403-5>.
- Fauconnier, Gilles (1994), *Mental Spaces: Aspects of Meaning Construction in Natural Language*, Cambridge, New York and Melbourne: Cambridge University Press.
- Paivio, Allan (1986), *Mental representations: A dual coding approach*, New York: Oxford University Press.
- Paivio, Allan (2010.), Dual coding theory and the mental lexicon, *The Mental Lexicon* 5 (2), 205–230.
- Stanojević, Mateusz-Milan and Anita Peti-Stantić (2017), Concreteness, subjective frequency and the thing/relation distinction in Croatian. 15th Slavic Cognitive Linguistics Conference – SCLA, Saint Petersburg, Russia.