Prosodic amplification and prosodic iconicity: Evidence from a social media corpus

Susanne Fuchs, Cornelia Ebert, Egor Savin, Manfred Krifka

It is frequently assumed that one "design feature" of language is that there is no relation between sound and meaning (Hockett 1960), which makes languages so different from each other, and flexible in its use. However, there is accumulating empirical evidence that this statement is only partially true and a considerable degree of iconicity, i.e. an association between form and sign, can be found in certain areas of language form and use.

The PSIMS project investigates the status of iconic meaning contributions by manual gesture, ideophones, and prosodic modulations. We will report first results on iconicity in *written* language that imitates prosodic modulation in social media. This usage scenario offers an excellent opportunity to study pragmatic phenomena, since their writers do not strictly follow orthographic and syntactic norms, but creatively use capitalization, letter replications or the integration of emojis to convey additional meaning components. The form we are interested in are letter replications, e.g. *looooooooong* instead of *long*. These replications have been associated with prosodic emphasis (Brody & Diakopoulos, 2011) or an iconic enrichment of arbitrary encoding of linguistic meaning (Schlenker in press). They often occur in gradable adjectives and express greater size or spatial/temporal extent.

In our study we focused on which letters and words replications occur and how frequently they are used. For this purpose, we used data from an English social media corpus, with 140 million words written by 19320 bloggers (Schler et al., 2004). We searched for three and more letter replications. Our exploratory findings show that letter replications occur particularly in vowels and sonorants, but letters corresponding to stops were less frequently replicated. In most data the number of replications did not go beyond 10 letters. Letter replication was also affected by the age of the blogger. Younger bloggers up to 20 years show a greater number of replications than older bloggers. Most replications were found in interjections.

Furthermore, we examined pairs of gradable adjectives such as *short/long*, *tiny/huge* and *fast/slow*, finding a higher frequency of letter replications for adjectives associated with greater size or spatial/temporal extent. Almost all antonym pairs show a higher frequency of letter replications in the adjectives corresponding to the "larger" scalar direction. Letter replications are significantly more often used in the adjectives *long*, *slow*, *big* and *huge* than in their respective antonyms. For example, out of all occurrences of *long* in the corpus (n=44819) in 1.35 % of the cases, the word was spelled with letter replications, i.e. different from the orthographic norm. For *short* (n=10848) only 0.02% of the data were spelled with replications. These replications were very unlikely typos, since we excluded all data with just one additional letter from the norm. These results are even more remarkable since our investigations are based on a naturally occurring non-elicited data set with no artificial contrasts or other contexts that could make the effects even stronger.

We will discuss the nature of the meaning of expression of letter replications and, consequently, prosodic modulations. While Schlenker (to appear) suggests that the specific meaning contribution of prosodic lengthening may be at-issue, there are clear differences between *looong* and *very long*: repetitions are clearly expressive (cf. Potts 2007 for possible modelling), and are less targetable by rejecting responses like *no*. We will discuss planned experiments to investigate these social meanings.

References

Brody, S. & Diakopoulos, N. 2011. Cooooooooooooooooolllllllllllllll!!!!!!!!!!!!!! Using word lengthening to detect sentiment in microblogs. *Proceedings of the 2011 Conference on Empirical Methods in Natural Language Processing.* 562–570.

Fuchs, S., Savin, E., Reichel, U.D., Ebert, C. & Krifka, M. 2018. Letter replication as prosodic amplification in social media. *Proceedings of the conference: Phonetics and phonology in the German-speaking countries*, 65-68. Berlin: HU.

Fuchs, S., Savin, E., Solt, S., Ebert, C. & Krifka, M. (submitted). Antonym adjective pairs and prosodic iconicity: Evidence from letter replications in an English blogger corpus.

Hockett, C.S. 1960. The origin of speech. *Scientific American* 203. 88–106.

Potts, C. 2007. The expressive dimension. *Theoretical Linguistics* 33: 165-198.

Schlenker, Philippe (in press). Iconic Pragmatics. *Natural Language and Linguistic Theory*.

Schler, Jonathan, Moshe Koppel, Shlomo Argamon & James Pennebaker. 2006. Effects of age and gender on blogging. *Proceedings of 2006 AAAI Spring Symposium on Computational Approaches for Analyzing Weblogs*, 1–7.