Affective transparency in compound word processing

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Compound words contain morphological constituents that correspond to distinct whole words. The denotational relationship between constituent and compound, referred to as semantic transparency, has been the subject of extensive psycholinguistic inquiry. However, the same cannot be said for the connotational relationship between compound and constituent, referred to here as affective transparency. For instance, while a compound like 'bedpan' may be semantically transparent (i.e. it refers to a 'pan' used in a hospital 'bed'), it is affectively opaque. According to the Warriner norms database (Warriner et al., 2013), the compound 'bedpan' has a negative connotation (valence = 2.74), while its whole-word constituents, 'bed' and 'pan', have positive connotations (valence = 7.16 and 5.15 respectively). Since constituent valence has been shown to influence compound processing (Kuperman, 2013), it is possible that incongruity between compound and constituent connotation does also, much like the effects of denotational incongruity reported in studies of semantic transparency.

Experiment 1 investigated the impact of affective transparency on compound word recognition using a constituent-prime lexical decision task, while Experiment 2 focused on compound production using a visual stimulus typing task (Libben & Weber, 2014). The critical stimuli for both experiments were 108 English bi-constituent compounds. Stimuli consisted of 36 compounds with affectively transparent constituents (e.g. 'DREAMLAND') and 72 with affectively opaque constituents. Opaque compounds were divided into two groups of 36, one where the constituents' connotations were more positive than the compound (e.g. 'BEDPAN'), and one where they were more negative (e.g. 'PAINKILLER'). Affective transparency was operationalized by the difference between compound and constituent valence ratings in the Warriner norms database. In Experiment 1, participants (n=57) made lexical decisions for compounds and non-word pseudo-compounds presented visually following a masked constituent prime (75ms). Three prime conditions (neutral, modifier, and head) were counterbalanced across sessions. Lexical decision response time and accuracy were measured. In Experiment 2, participants (n=44) typed compound stimuli presented to them visually. The latency and accuracy of individual keystrokes were recorded. Both experiments were constructed in PsychoPy (Peirce et al., 2019) and participants were recruited through Amazon's Mechanical Turk.

The results of both experiments provided positive evidence that compound processing is influenced by affective transparency. In Experiment 1, compounds in which the head constituent had more positive connotations than the compound itself were responded to significantly more slowly than other compounds. This result suggests that the automatic activation of connotatively incongruous whole-word constituents interferes with compound recognition. Typed responses in Experiment 2 showed a similar effect. Keystrokes at the morphological constituent boundary were significantly slower for compounds in which the head constituent had more positive connotations than the compound. The interpretation of this finding is discussed in terms of constituent representation in the mental lexicon and in the context of previous compound typing

research. In conclusion, these results suggest that the notion of affective transparency provides a promising new angle on compound processing research.

References

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