

Subjective and Objective Linguistic Constraints in Idiom Processing

Mahsa Morid¹ & Laura Sabourin¹

¹University of Ottawa

Idioms are conventionally defined as expressions whose figurative meaning do not (necessarily) derive from the literal meaning of their constituents (Jackendoff, 1995). Classical models of idiom processing were mainly concerned about the compositional versus non-compositional analysis involved in the processing of idioms (e.g., Bobrow & Bell, 1973; Gibbs & Nayak, 1989; Cacciari & Tabossi, 1988). However, recent models pinpoint the importance of considering multiple *linguistic constraints* on the processing of idioms, including both *subjective* measures, such as participants' familiarity with idioms, and *objective* measures, such as the frequency of the idioms' constituents (Libben & Titone, 2008, Titone et al., 2015).

The question we addressed in this study is: how do multiple objective and subjective linguistic constraints impact the processing of idioms? We considered a variety of factors while introducing *concreteness*, an objective factor that, to our knowledge, has not yet been explored. Given that idiomatic expressions are often abstract (Citron, 2016), and that there are fundamental differences between the processing of abstract and concrete words, that is, faster processing time for concrete words compared to abstract words (Milburn, 2018), we hypothesized that the *concreteness* of the nouns that constitute the idiom will affect its processing.

To date, 13 participants have participated in this study. Participants performed a self-paced reading task during which they were presented with 80 idiomatic expressions (e.g., "She broke her word"). Participants' reaction time (RT) on the last word of the expressions were used for the analysis. After this task, participants gave their ratings (on a 5-point scale) on the level of *Familiarity*, (i.e., how frequently they encounter or use that idiom in every-day communication), *Meaningfulness* (i.e., how well they know the meaning of the idiom), and *Literal-plausibility* (i.e., whether the idiomatic expression has a possible literal interpretation). The objective measures included *Noun-* and *Verb-Frequency*, and noun *Concreteness*.

Two multiple regression models were computed separately for subjective and objective factors. Among objective measures, *Noun-Frequency* and *Concreteness* were significant predictors of RT ($t = -2.93$; $p < .05$ and $t = 2.41$; $p < .05$; $R^2 = .28$). The increase in *Noun-Frequency* contributed to faster RT. However, the effect of *Concreteness* was inconsistent with the general expectations for processing of concrete versus abstract words: abstract words were processed faster. *Meaningfulness* and *Literal-Plausibility* were objective measures whose effects on RT were significant ($t = -3.98$; $p < .05$ and $t = 2.70$; $p < .05$; $R^2 = .76$), such that increase in *Meaningfulness* led to faster RTs, and increase in *Literal-plausibility* led to slower RTs.

To conclude, our results are consistent with a constraint-based approach which emphasizes the role of multiple linguistic constraints on idiom processing. While some prior studies have shown a stronger effect of familiarity (Libben & Titone, 2008), the result of the current study shows that the knowledge of the meaning of idioms is a stronger predictor in their processing. Slower processing of idioms with possible literal interpretations confirms the suggestions of the prior studies (Titone and Connine, 1994) on the dual activation of the meaning of idioms and the meaning of the individual components for such idioms. Additionally, we conclude that the ongoing processing of idioms might exert a mutual impact on the processing of their components, suggesting by the facilitative processing of abstract words embedded in idioms.

Our understanding on human language processing derives mainly from our knowledge on literal language processing. The study of figurative language processing, in and of itself is an interesting area to be explored, but more importantly, it extends our general knowledge about the representation and processing of language, for example, in regard to the processing of abstract and concrete concepts.

References

- Bobrow, S., & Bell, S. (1973). On catching on to idiomatic expressions. *Memory & Cognition*, *1*, 343–346.
- Cacciari, C., & Tabossi, P. (1988). The comprehension of idioms. *Journal of Memory and Language*, *27*, 668–683.
- Citron, F. M., Cacciari, C., Kucharski, M., Beck, L., Conrad, M., & Jacobs, A. M. (2016). When emotions are expressed figuratively: Psycholinguistic and Affective Norms of 619 Idioms for German (PANIG). *Behavior Research Methods*, *48*(1), 91–111.
- Gibbs, R., & Nayak, N. (1989). Psycholinguistic studies on the syntactic behavior of idioms. *Cognitive Psychology*, *21*, 100–138.
- Jackendoff, R. (1995). The boundaries of the lexicon. In M. Everaert, E-J. vander Linden, A. Schenk, & R. Schreuder (Eds.), *Idioms: Structural and psychological perspectives* (pp. 133–165). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Libben, M., & Titone, D. (2008). The multidetermined nature of idiom processing. *Memory & Cognition*, *36*, 1103–1121.
- Milburn, E., Warren, T., & Dickey, M. W. (2018). Idiom comprehension in aphasia: Literal interference and abstract representation. *Journal of Neurolinguistics*, *47*, 16-36.
- Titone, D., & Connine, C. (1994). Comprehension of idiomatic expressions: Effects of predictability and literality. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *20*, 1126–1138.
- Titone, D., Columbus, G., Whitford, V., Mercier, J., & Libben, M. (2015). Contrasting bilingual and monolingual idiom processing. In R. R. Heredia & A. B. Cieślicka (Eds.), *Bilingual figurative language processing* (pp. 171-207). New York, NY, US: Cambridge University Press.