

Competition between Verbs and Constructions for Sentence Meaning: Evidence from Sentence Interpretation in English and Korean

This study tests two hypotheses regarding sentence comprehension. The *lexical approach* (LA) emphasises verb's dominant role in sentence interpretation by assigning grammatical roles to its arguments^{[1][2]}, whereas the *constructional approach* (CA) favours the direct contribution of argument structure constructions to sentence meaning^{[3][4]}. Relative to extensive documentation on sentence comprehension in English notwithstanding^{[2][5][6][7]}, few studies have examined how speakers of head-final languages draw upon information from verbs or constructions and compared their behaviours with those from head-initial languages, particularly with regard to the two aforementioned accounts. We tested both approaches by investigating how sentence meaning is derived when speakers of English and Korean, two typologically distinct languages in terms of word order and case marking, interpret sentences in each language. To measure the contribution of verbs and constructions to sentence meaning, we conducted a sentence-sorting task where lexical information of verbs was manipulated.

Method Native speakers of English (n=60) and Korean (n=60) sorted 16 sentences into four piles based on overall sentence meaning under real-verb (RV) and nonce-verb (NV) conditions. Sentences were created by crossing four types of constructions with four RVs or NVs (Table 1). Half of participants in each language group saw RVs and the other half saw NVs. Participants' sorting was computed into deviation scores for verb- (Vdev) or construction-based (Cdev) sorts^[6]. On a scale from 0 to 12, a Vdev or Cdev closer to 0 indicates a stronger verb- or construction-centred sorting tendency, respectively. The data was also submitted to a cluster analysis^[8] to identify participants' specific sorting tendencies.

Prediction LA predicts a dominant role of verbs and thus a similar degree of verb-based sorting between the NV and the RV conditions, not affected by lexical contents and argument structure information encoded in verbs. Alternatively, CA predicts stronger construction-based sorting for the NV group than for the RV group because the NV group cannot extract lexico-semantic information from verbs, relying instead on constructional information, whilst the RV group can have access to both verb and construction cues. We also predicted that the degree of reliance on verb or construction cues will be modulated by typological differences of those languages (e.g., the location of verbs and the presence of case marking).

Results and Discussion Both groups exploited construction cues more when verb semantics was eliminated, as predicted by CA. Cross-linguistic differences were also found in the RV conditions: English participants had strong recourse to verb cues whereas Korean participants utilised both verb and construction cues as sorting criteria (Table 2 & Figure). Results indicate that constructions are utilised to a different degree across the languages, independent of individual lexical items. The distinct sorting patterns between English and Korean suggest that language-specific mechanisms of sentence comprehension are contingent on verbs and pre-verbal elements for sentence meaning in each language. Compared to English where a verb is an early-arriving cue with rigid word order, Korean has pre-verbal

elements with particles clearly visible in a sentence^[9], which may allow Korean speakers to effectively draw upon constructional information via those local cues.

(word count: 500, tables, figures, & references excluded)

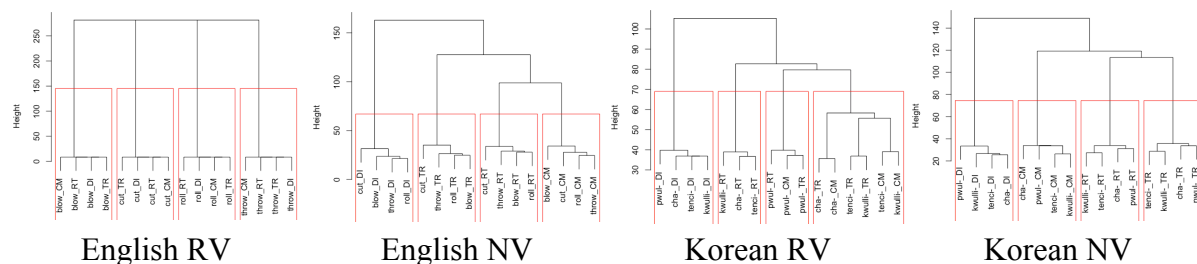
TABLE 1. Construction and Verb Used in Experiment

| Verb | Construction | Transitive, Ditransitive, Caused-motion, Resultative |
|--------------|---|--|
| | English RV/NV | <i>blow/fego, cut/keebo, roll/suto, throw/moopo</i> |
| Korean RV/NV | <i>pwul-/tami-</i> ‘blow’, <i>cha-/mikku-</i> ‘kick’, <i>tenci-/goppu-</i> ‘throw’, <i>kwulli-/pilkku-</i> ‘roll’ | |

TABLE 2. Deviation Score of Each Condition in English and Korean

| Language Type | Deviation Score Type | Mean (SD) | | <i>F</i> | η^2 | Sig. |
|---------------|----------------------|--------------|-------------|----------|----------|--------|
| | | Real Verb | Nonce Verb | | | |
| English | Vdev | 1.20 (3.66) | 8.23 (4.95) | 39.119 | .403 | < .001 |
| | Cdev | 10.80 (3.66) | 5.07 (5.02) | 25.564 | .306 | < .001 |
| Korean | Vdev | 6.27 (5.77) | 7.10 (5.42) | 0.332 | .006 | |
| | Cdev | 6.03 (5.66) | 5.50 (5.36) | 0.140 | .002 | |

FIGURE. Cluster Analysis (Euclidean distance; Ward’s method)



REFERENCES

- [1] Jackendoff, R. (1975). Morphological and semantic regularities in the lexicon. *Language*, 51, 639–671.
- [2] Pinker, S. (1989). *Learnability and cognition: The acquisition of argument structure*. MIT Press.
- [3] Goldberg, A. E. (1995). *Constructions: A construction grammar approach to argument structure*. Chicago University Press.
- [4] Goldberg, A. E. (2006). *Constructions at work: The nature of generalization in language*. Oxford University Press.
- [5] Healy, A., & Miller, G. (1970). Verbs as main determinant of sentence meaning. *Psychonomic Science*, 20(6), 372.
- [6] Bencini, G. M., & Goldberg, A. E. (2000). The contribution of argument structure constructions to sentence meaning. *Journal of Memory and Language*, 43(4), 640–651.
- [7] Altmann, G. T., & Kamide, Y. (1999). Incremental interpretation at verbs: Restricting the domain of subsequent reference. *Cognition*, 73(3), 247–264.
- [8] Everitt, B. S., Landau, S., Leese, M., & Stahl, D. (2011). *Cluster Analysis (5th edition)*. John Wiley & Sons.
- [9] Choi, Y., & Trueswell, J. C. (2010). Children’s (in) ability to recover from garden paths in a verb-final language: Evidence for developing control in sentence processing. *Journal of experimental child psychology*, 106(1), 41–61.