Introduction

Usage-based theories of language claim that phrases longer than one word might be represented explicitly in long-term memory (e.g., [1]).

Like many other structures, multiword expressions show frequency effects in processing and production [2,3,4]. But this isn’t necessarily evidence that phrases longer than one word are explicitly represented. For example, it’s possible that some other feature of the phrase (e.g., semantic or event representation) is easier to process, with frequency a natural consequence of this.

How can we test whether multiword expressions are explicitly stored as holistic units?

Binominal Expressions

Phrases of the form “X and Y” / “Y and X”

Benefits:
– Same lexical items
– Identical formal semantic & syntactic structure
– Only difference between orders is exact string of words

If frequent multiword expressions can be stored as holistic units, we should see a word-order specific priming effect in frequently attested multiword expressions but not novel expressions.

Materials

48 attested binominal expressions (lifetime exposures: min 31, mean 2,000)
48 novel binominal expressions (lifetime exposures: 0)

Results

Per-Word Average Across Critical Regions

Word-by-Word

Design & Procedure

Participants: 207 native English speakers from Amazon Mechanical Turk were paid $4.00 each for their participation.

Training Phase: Participants read items in one item or the other in three different sentence contexts. Each item was presented in the same order in all training trials.

Testing Phase: Participants read (in self-paced reading) each trained item once in either the same (match) or different (mismatch) order as in training. They also read items that were not seen in training to establish a baseline.

Conclusions

1. Attested expressions show a word order-specific training benefit, but no overall gain from training as compared to no training.

2. Novel expressions show only an overall gain from training in either order, with no word order-specific training benefit in any region.

References


Future Work

Why do novel expressions show a larger overall training benefit?

– Larger increase in experience with novel items? (0 → 4 exposures more important than 2,000 → 2,004)

– Lexical frequency effect? Lower frequency words show larger repetition priming effects, and on average novel expressions contained lower frequency words than attested.

– Strength of lexical priming might be modulated by expression frequency?