**A VERBAL ILLUSION WITHOUT THE VERB: DERAILED COMPOSITIONAL INTERPRETATION IN SENTENCE COMPLETIONS**

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**INTRODUCTION**

- Wason & Reich (1979) observed that (1) is usually misinterpreted to mean *Treat all head injuries, no matter how trivial:*
  
  (1) No head injury is too trivial to be ignored.

  Compositional meaning:
  
  Ignore all head injuries, no matter how trivial*

  * Compare: No missile is too small to be banned (→ ban all)

- Wason & Reich speculated that the illusion is due to **negation overload**
  at the verb:

  no + (global negation)
  
  too + (too x to y ~ y)
  
  trivial + (= ~ serious)
  
  ignore + (= ~ treat)

- Paape & Vasishth (2017) found some eye tracking evidence consistent with the verb being the locus of the illusion

  Effect found at final region of the sentence could be due to spillover/overlap

- O’Connor (2015) also observed the illusion in sentence completions when no verb was present

- The current experiment aims to find further evidence for an illusion effect in production, using two different coding schemes for cloze responses

**THE EXPERIMENT**

- Single factor design: Double negation (DEPTCHARGE) versus single negation (CONTROL)

  Global negation, Adjectival negation (DEPTCHARGE)

  Keine Kopfverletzung ist zu ungefährlich, um ...
  
  No head injury is too un-dangerous to

  No global negation, Adjectival negation (CONTROL)

  Manch eine Kopfverletzung ist zu ungefährlich, um ...
  
  Some a head injury is too un-dangerous to

- 32 items, 60 subjects

- Cloze response, preamble reading time, completion time recorded

**Response coding**

- Coders are blind to experimental manipulation as preamble is not shown to them

- **Scheme A** (8 coders, 3 per list): Cloze response pasted into template with singular subject, e.g. *A head injury – ignore it / treat it*

  Question: Is the subject considered to be of importance/consequence?

  → Matches intuition of Wason & Reich (1979), Kizach et al. (2015) that there is a class of verbs that create or signal the illusion

- **Scheme B** (12 coders, 4 per list): Cloze response pasted into template without negation, quantification, e.g. *This head injury is too dangerous to be ignored / # be treated*

  Question: Is the sentence sensible?

  → Matches intuition that the illusion meaning is pragmatically normalized, negations ignored

**RESULTS**

- Inter-coder agreement higher for Scheme A (Fleiss’ κ: 0.77, ‘substantial agreement’) than for Scheme B (Fleiss’ κ: 0.49, ‘moderate agreement’)

- Completion types across coding schemes correlated at the observation level (r = 0.52, 95% interval: [0.51, 0.53])

- Illusion is relatively stable across items/subjects (but note exceptions):

**DISCUSSION**

- Results indicate that the depth charge illusion is triggered before the lexical verb appears

- Expectation for anomalous verb is reliably generated in depth charge sentences

- Mechanism still unclear:

  **Account A**

  Compositional processing fails at too trivial, normalized expectation is triggered as a result

  → Similar failures are expected for other cases of multiple negation

  **Account B**

  too embedded under no is inherently ambiguous between a ‘negative’ and a ‘positive’ reading (Cook & Stevenson, 2010; Fortuin, 2014)

  → Meaning reversal would not necessarily be expected to generalize

**REFERENCES**

- Fortuin (2014).
- Kizach, Christensen, & Wood (2016).
- J. Psycholinguist. Res. 45(3), 763-768.
- O’Connor (2015).

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