The role of animacy in sentence production: Evidence from French
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Complement order

- The complements of French ditransitive verbs can occur in either DO < IO or IO < DO order.

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(1) Pierre a donné [une fleur]_{NP} [à Sophie]_{PP}
(2) Pierre a donné [à Sophie]_{PP} [une fleur]_{NP}
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- Previous work in theoretical linguistics has identified a general preference for DO < IO order (Blinkenberg 1928, Berredonner 1987), as well as several factors influencing the order of complements, including:
  - Weight (short < long): (Blinkenberg 1928, Berredonner 1987, Abelli and Godard 2004, 2006)
  - Definiteness (definite < indefinite) (Berredonner 1987)
  - Discourse status (given < new) (Berredonner 1987)
  - Lexical semantics of the verb (Schmitt 1987)

- However, a quantitative corpus analysis (Thuilier 2012) revealed a significant effect of length only.
- The preference for DO to precede IO was supported (70.4% of corpus examples were NP-PP).

Animacy and sentence production

**Conceptual accessibility** (Bock and Warren, 1985): The ease with which the mental representation of some potential referent can be activated in or retrieved from memory.

- Assuming incrementality in sentence production (see e.g., Bock 1982), words that are more easily accessed from memory will tend to be produced first (Bock and Warren 1985, among others).
- Animate arguments have been argued to be more conceptually accessible than inanates, influencing the order of production (see Branigan et al. 2007).
- However, there has been a debate as to whether animacy affects a stage of production in which grammatical functions (such as subject and object) are assigned, or a stage that affects linear order.
- For Japanese, Tanaka (2011) finds evidence for an effect of animacy at both levels of production.

Sentence recall study

**Research Question:** Does animacy affect sentence production in French with respect to grammatical function assignment (e.g., subject, object), linear order, or both?

- Thuiller (2012) did not find a significant role for animacy in complement order, but this could have been due to confounds from other factors (e.g., length).
- If animacy affects linear order through conceptual accessibility, then we would expect a tendency to produce animate arguments first when other factors are controlled.
- In order to test this hypothesis, we followed others (see Branigan et al., 2007) in conducting a study of sentence recall, examining rates of order inversions as a way to detect effects of conceptual accessibility on production.

Results

- Voice alternations (31 subjects, 22 items)
  - Only two inversions from active to passive, so these were left out of analyses.
  - Analyzing only the passive-active inversions, we find a significant effect of animacy (Estimate = .869, SE = .27, z = 3.22, p < .01).
- Coordinations (33 subjects, 23 items)
  - No significant effect of animacy on order of conjuncts.
- Ditransitives (31 subjects, 22 items)
  - No tendency to put animate complements before inanates.
  - In fact the opposite was found, an interaction such that there were more inversions toward DO-IO order when DO was animinate (Estimate = -.69, SE = .20; z = -.385, p < .001).

Further analysis

- Productions were further coded for definiteness and length, which were controlled in the input sentences.
- These factors do not appear to drive the ditransitive pattern.

Conclusions

- We replicated the animacy effect found for voice alternations in the production literature (e.g., McDonald et al 1993), but found no animate-first preference in coordinations or ditransitives.
- Because DOs are typically inanimate (87%, Thuiller 2012), and because DO-IO is the canonical order, we interpret our surprising result with ditransitives as suggesting that canonical arguments tend to be produced in canonical position.