The non-independence of variants in judgment data

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Linguistic variants

- Contexts where there is “more than one way of saying the same thing”. A many-to-one mapping of form to meaning.

(1)  *walking* [n] ~ [ŋ]

(2)  a.  *Lo queremos ver.*
    it  want.1PL see.INFIN
    ‘We want to see it.’

    b.  *Queremos verlo.*
The (in)dependence of variants

A standard assumption in the Labovian lang. change literature is that linguistic variants are interdependent in speakers’ probabilistic knowledge (Cedergren & Sankoff 1974, Sankoff & Labov 1979, Kroch 1989, 2001).

Required in models of production data, where, for a context with \( n \) variants, the probability of use of variant \( n \) (\( v_n \)) will be

\[
1 - \sum_{i=1}^{n-1} Pr(v_i)
\]

**Figure 1:** Change in usage of two variants
Recent results suggest that acceptability judgments for competing variants closely mirror usage frequencies (Manning, 2003; Bresnan and Ford, 2010; Bader and Häussler, 2010; Melnick et al., 2011).

A question that arises in this light is whether acceptability of competing variants show interdependence in designs in which judges evaluate variants independently.

**Figure 2**: Mean PP-frame ratings for 30 items by corpus log odds (Bresnan and Ford, 2010)
The (in)dependence of variants

To test this, we need to examine two variables (between- or within-subjects) for which we have good theoretical reasons for assuming independence. In ditransitives, the effects of focus placement and word order on acceptability, for example, are not independent:

(3) Asterix handed Obelix\,( [+F]) the potion\,( [+F]).

(4) Obelix handed the potion\,( [+F]) to Obelix\,( [+F]).

But age and word order presumably are.
The (in)dependence of variants

- Perhaps related is Campbell-Kibler’s (2011) results suggesting that social information can attach to variants independently.

- Rating on a range of social attributes based on (ING)

- 3 guises: [ŋ], [m], and [obscured by noise]

- Independent social evaluations for [ŋ] and [m]
  - [ŋ]: intelligent, educated, articulate, not a student
  - [m]: casual, not gay
Main claims and outline:

- **Main claims:** Results from three large-sample judgment experiments, suggest that within-subject and between-subject factors affect variants partially independently. We suggest that judges implicitly compare variants in judgment tasks when they are close competitors, with largely overlapping sets of meanings (“true variants”).

- **Outline:**
  
  - **Part 1:** Introduction
  - **Part 2:** English quotative constructions (N=123)
  - **Part 3:** English particle verb constructions (N=237)
  - **Part 4:** Object order in Norwegian passives (N=500)
  - **Part 5:** Conclusion
Change in English quotative verbs

- Change in English verbs of quotation, very well described in corpus-based literature (Butters, 1982; Blyth et al., 1990; Tagliamonte and Hudson, 1999; Buchstaller, 2004; Tagliamonte and D’Arcy, 2007).

(5) She said/was like, “Shut up.”

Figure 3: Change in quotative expressions in Toronto (Tagliamonte & D’Arcy 2007)
A judgment experiment

- 123 self-described native speakers of Am. English, aged 18-73 ($M=31.1$, $SD=11.6$); 73 women, from different dialect areas, all Uni. educated.

- A 2x6 design crossing verb (be like vs. say) with 6 context conditions biasing stative vs. eventive interpretations of the verb (progressives, imperatives, force ... to, do-pseudoclefts, for-adverbials) or a “baseline” condition (Dowty, 1979; Rothstein, 1999).

- Web-based magnitude estimation experiment.
Results

- Apparent time increase in acceptance of *be like*, but no decrease in acceptability of *say*.
- Not expected on an approach where both variants are affected inversely in an equal way.

Figure 4: Acceptability of quotatives by participant age (Haddican et al., 2015)
Non-competition between *be like* and *say*

- But we might worry whether *be like* and *say* are true competitors, given different meanings they can have.

- First, a reported thought interpretation is available for *be like* but not *say*:

  (6) Obelix *was like*, “Ok, fine.”
  ‘Obelix seemed to be thinking, “Ok, fine.”’
  ‘Obelix said, “Ok, fine.”’

  (7) Obelix *said*, “Ok, fine.”
  *‘Obelix seemed to be thinking, “Ok, fine.”’*
  ‘Obelix said, “Ok, fine.”’
Non-competition between *be like* and *say*

- Second, for *be like* but not *say* the quote cannot be *wh*-questioned (Flagg, 2007):

  (8)  What was Obelix like?
  * ‘What did Obelix say?’
  OK: ‘What was Obelix’s state?’

(9) What did Aaron say?

- Third, unlike *say*, *be like* does not allow for quote-raising (Flagg, 2007):

  (10) “Hand me the potion”, Asterix said.

(11) *“Hand me the potion”, Asterix was like.*
Non-competition between *be like* and *say*

- Fourth, reported speech *be like* but not *say* has a paraphrase implicature:

  (12)  
  a. Word for word, she said, “I-didn’t-plagiarize.”
  b. She said exactly, “I promise to be there.”

  (13)  
  a. #Word for word, she was like, “I-didn’t-plagiarize.”
  b. #She was exactly like, “I promise to be there.”

- This meaning is cancellable:

  (14)  
  A: She was like, “I-didn’t-plagiarize.”
  B: Word for word?
  A: Yes.

  (15)  
  She was like, “I like apples.” In fact, that was exactly what she said.
Quotatives summary

- In judgement data, an increase in acceptance of *be like* quotatives (in apparent time) does not co-occur with a decrease in acceptability of another variant *say*.

- This does not align with findings from corpus data, where age effects on *be like* and *say* mirror each other.

- We have noted that the sets of meanings that quotative expressions with *be like* and *say* can have may diverge.

- If, in judging variants, subjects implicitly consider the availability of competitors, then the fact that *be like* and *say* are not true variants may be relevant.
The particle verb alternation

(16) Kim cut the melon open. [VOP]
(17) Kim cut open the melon. [VPO]

- Two main syntactic approaches. The complex head approach (Johnson, 1991; Dehé, 2002).

(18) [VP [V V Prt ] Obj ]

- The small clause approach (Kayne, 1985; Den Dikken, 1995, 2010; Svenonius, 2010; Haddican and Johnson, 2014). (Note (19)!) 

(19) [VP V [PP Obj P ] ]

(20) Van Gogh glued on his ear again. (ok: restitutive?)
Weight effects

- A frequently reported finding in corpus data —“light” objects favor VOP, “heavy” objects favor VPO (Kroch and Small, 1978; Gries, 2001, 2003; Lohse et al., 2004).

- For head-initial Ls, “end-weight” (Behaghel, 1909; Quirk et al., 1972).

- Lohse et al. (2004) explain weight effect in terms of a more general processing constraint: processing is facilitated when the material intervening between members of a syntactic dependency is minimized (Hawkins, 1995, 2004). Both imply effect on VOP only.

(21) Kim cut the big heavy melon open. [VOP]

(22) Kim cut open the big heavy melon. [VPO]
Diachronic effects

Brown family corpora:
American (circles) and British (squares)

Figure 5: Change toward VOP orders—Brown corpora results
Diachronic effects

Figure 6: Change toward VOP orders—COHA results
An experiment

- 113 US vs. 126 UK subjects, age 18-84 (mean 30)
- 2x2x2 design crossing: order, object weight (3 vs. 7 syllables), object focus (new vs. old information).

<table>
<thead>
<tr>
<th>Object Weight</th>
<th>VOP</th>
<th>VPO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light</td>
<td>...cut the melon open</td>
<td>...cut open the melon</td>
</tr>
<tr>
<td>Heavy</td>
<td>...cut the heavy juicy melon open</td>
<td>...cut open the heavy juicy melon</td>
</tr>
</tbody>
</table>

Table 1: Four conditions

- 32 lexicalizations created, also 50% fillers. Normalized using z-scores based on fillers.
- Web-based questionnaire using Ibex Farm (Drummond, 2013).
Results for participant age and object weight

Figure 7: Estimated effects of object weight on acceptability of VOP and VPO orders by speaker
Age effects

- The figure shows that this change has co-occurred with an apparent time increase in the acceptability of the VOP order, but no significant change in the acceptability of the VPO order.
- This is not expected on an approach to change in acceptability where both variants are affected inversely in an equal way.

**Figure 8:** Change in usage of two variants
Object weight effects

- The effects of weight on the two orders, however, do partially mirror each other.

- Increasing the weight of the object from three to seven syllables disfavors the Verb-Object-Particle order 50% more than doing so favors the Verb-Particle-Object order.

<table>
<thead>
<tr>
<th>Object Weight</th>
<th>VOP</th>
<th>VPO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light</td>
<td>0.618</td>
<td>0.575</td>
</tr>
<tr>
<td>Heavy</td>
<td>0.553</td>
<td>0.617</td>
</tr>
</tbody>
</table>

| $\Delta$      | 0.065| 0.042|

*Table 2: Average acceptability for four conditions*
Object weight effects

- The result for the VOP order can be explained by Lohse et al.’s (2004) processing-based account. A heavier object separating the verb and particle increases the size of the verb-particle processing domain.

- For object weight to affect the VPO order is unexpected from this perspective, since a heavier final object NP should have no effect at all on the size of the processing domain for the relevant dependency relation.

- This suggests that when subjects’ evaluations of the acceptability of a given syntactic structure is affected by the availability of a competing structure in the same environment.
Particle verbs summary

- VOP and VPO show a partially-inverse relationship on average, but no interdependence is seen in diachrony.
- Why not? VOP and VPO are close variants, but word order is sensitive to focus (Bolinger, 1971; Svenonius, 1996; Kayne, 1998; Dehé, 2002; Haddican and Johnson, 2014).

(23) Q: Who will you pick up?
A: I’ll pick (?the girls) up (the girls).

(Svenonius, 1996)

(24) Q: How are Turid and Ingrid going to get here?
A: I’ll pick (the girls) up (?the girls).

(Svenonius, 1996)
Passive symmetry in Norwegian

Norwegian is a “symmetric passive” language, meaning that in passives of double object constructions, both theme and goal arguments may passivize, as illustrated in (25).

(25)  

**Norwegian**

   Jens was given book-the
   ‘Jens was given the book.’

b. Bok-en ble gitt Jens.
   Book-the was given Jens
   ‘The book was given (to) Jens.’

(Haddican and Holmberg, 2012)
Passive symmetry in Norwegian

- Anagnostopoulou (2003) proposed that Th-passivization is fed by short theme movement, as in (26).

(26) **Theme passivization on the locality approach**

\[
[TP \text{ Theme T} [vP v [XP \text{ Theme} [XP \text{ Goal} [YP \text{ Theme}]]]]]
\]

- Anagnostopoulou (2003) suggested that this same theme movement feeds Th-G orders in object shift (OS):

(27) **Norwegian double object OS**

a. Elsa ga ham den ikke.
   Elsa gave him it not
   ‘Elsa didn’t give him it.’

b. %Elsa ga den ham ikke.
Design

- 500 subjects (age 18-81, mean 39)
- 2x3 design
- 4 items/condition

<table>
<thead>
<tr>
<th>Context</th>
<th>Th-G</th>
<th>G-Th</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passives</td>
<td>Den ble gitt ham.</td>
<td>Han ble gitt den.</td>
</tr>
<tr>
<td></td>
<td>‘It was given him.’</td>
<td>‘He was given it.’</td>
</tr>
<tr>
<td>Active OS</td>
<td>Elsa ga den ham ikke.</td>
<td>Elsa ga ham den ikke.</td>
</tr>
<tr>
<td></td>
<td>‘Elsa didn’t give it him.’</td>
<td>‘Elsa didn’t give him it.’</td>
</tr>
<tr>
<td>Active-non-OS</td>
<td>Elsa har ikke gitt den ham.</td>
<td>Elsa har ikke gitt ham den.</td>
</tr>
<tr>
<td></td>
<td>‘Elsa hasn’t given it him.’</td>
<td>‘Elsa hasn’t given him it.’</td>
</tr>
</tbody>
</table>

Table 3: Example sentences for six conditions
Results

- Theme-goal orders in active contexts *very* marginal in our data.
- Both passive orders accepted readily.
- No correlation between acceptance of Th-G orders in actives and passives.

![Figure 9: Preference for Th-G over G-Th order (Passive and Active OS compared to Active-non-OS)](image-url)

Other sentence type
- Passive
- Active-OS

$r = -0.075, p = 0.096$
$r = 0.57, p = 0$
Results

- Tendency toward Th-G order by speaker.
- No difference in historically dative area of central Norway (Eyþórsson et al., 2012).
- No stylistic difference between variants.
Diachronic effects: Norwegian passives

Figure 10: Acceptability of goal-theme (Han ble gitt den) and theme-goal (Den ble gitt han) word orders in the passive, by speaker
Diachronic effects: Norwegian passives

- Mirroring slopes for the effect of age is exactly the pattern we expect if grammatical change reflects incremental change in the probability of choosing one abstract representation vs. a competing one—“grammar competition” in Kroch’s (1989; 1994) terms.

- Importantly, there is no meaning difference between these variants reported in the literature (Holmberg and Platzack, 1995; Anagnostopoulou, 2003)
Main points

- Much has been learned from the standard methodology that treats variants of a linguistic variable as choices (or the input and output of rules/processes). From this perspective, binary variants always appear to respond inversely to the factors affecting variation.
- However, in some respects variants can also behave independently.
- Our results suggest that, for different (within- and between-speaker) effects, one and the same variable can affect the variants independently or not.
- We have suggested that whether or not subjects evaluate a variant in relation to an alternative form is determined by how closely the variants compete for expression.
- A predictive model of these effects should surely be a goal of variationist sociolinguistics.
Many thanks to ...

- Marcel den Dikken, Nanna Haug Hilton, Anders Holmberg, Meredith Tamminga
References I


References II

References III


References IV

References V

References VI