



# L1/L2 differences in processing verbal vs. adjectival short passive constructions

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## Introduction

Previous research suggests that 'implicit' agent arguments are activated into the discourse during online comprehension of short passive constructions (Manner & Koenig, 1999). Yet some researchers have claimed that there exists a distinction between adjectival and verbal passives, and that only the latter are able to license and project an agent. For example, Kratzer (1996) argues that the external argument (e.g., the agent) is never a direct argument of the verb; rather, it is introduced via a higher, functional head (e.g., Voice). Adjectival passives lack a higher Voice head, and thus do not project an "external" argument.

Short passives also present an interesting question in regards to second language (L2) processing. It has been shown that for some constructions, L2 speakers may show crosslinguistic influence from their L1, especially when there are dissimilarities between the L1/L2 forms (e.g., French-Mestre & Pynte, 1997; van Hell & Tokowicz, 2010). Short passive forms are superficially similar in English, but are distinctly marked in a number of other languages, like Swedish, where *vara* (to be) marks the stative usage (1) and other forms mark the eventive usage (2). This difference between English and Swedish short passive forms may thus pose problems for Swedish L2 speakers of English.

Adjectival Passive ( <i>vara</i> )	Verbal Passive ( <i>blir</i> or "s-passive")
(1) <i>Prislistan var mycket organiserad.</i> Price-list-the was highly organized. "The price list was highly organized."	(2) a. <i>Prislistan blev snabbt organiserad.</i> Price-list-the was quickly organized. "The price list was quickly organized."
Short Passives in Swedish and English	b. <i>Prislistan organiserades snabbt.</i> Price-list-the organized-pass quickly "The price list was quickly organized."

## Research Goals

- Determine whether short adjectival passives will show a processing cost in relation to short verbal passives and controls when an agent is required further downstream (e.g., when a rationale clause is present) – and determine to what extent the frequency by which a participle appears in its verbal form will help to mitigate this cost.
- Examine the possibility that Swedish L2 speakers of English may experience crosslinguistic influence from Swedish, leading to difficulties in the processing of both short passive structures in English relative to a control condition containing an explicit agent.

## Experiment 1

Using word-by-word reading, we tested monolingual L1 English speakers for differences in agent activation between short adjectival passives (*apass*, 3a) short verbal passives (*vpass*, 3b), and an overt, long verbal passive by-phrase control (*vcontrol*, 3c)

- The price list was **highly** organized to make searches easier for the new employees.
- The price list was **quickly** organized to make searches easier for the new employees.
- The price list was **quickly** organized by the manager to make searches easier for the new employees.

We hypothesized that for L1 English speakers, verbal passive participles would activate and make available an agent in the discourse, thus facilitating processing at an agent-dependent, rationale clause (to *make*...), whereas adjectival passives would not.

## Method

### Participants

Forty-five monolingual L1 English speakers, aged 18-40, prescreened for language history to minimize the influence of other languages.

### Materials

Via a BYU-BNC corpus search (Davies, 2004-).

### Past participles

- Adjectival passives:** all participles coded as adjectives and that ended in *-ed* or *-en*.
- Verbal passives:** all words coded as verbal past participles

### Past part. frequency

A continuous measure, but selected from three ratio bands of verb:adjective (V:A) freq.

- Less-verbal past participles** (V:A .05 to 1.91)
- More-verbal materials**

(V:A 1.94 to 7.04).

- Most verbal materials** (V:A 7.28 to 28.41)

### Adverb selection

- Adjective modifying adverbs** (e.g., *very*) (V:A = .003 to .44)
- Verb modifying adverbs** (e.g., *quickly*) (V:A = 4.75 to 41.75)

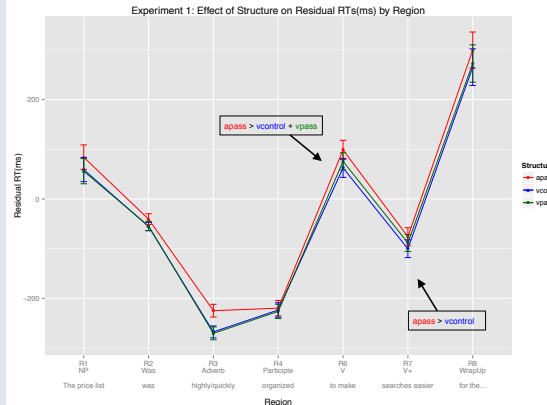
### Other constraints

- Excluded participles with high verb + infin. continuations.
- Rational clause verbs all denote an event that takes a sentient/animate subject
- Main clause subjects are all inanimate and non-sentient.
- By-phrase agent is always a good-fit rationale clause subject

### Procedure

Word-by-word self-paced reading using E-Prime 2.0. 120 items (36 critical and 84 fillers), across three lists.

## Experiment 1 Results



**Experiment 1 Results (linear mixed models analysis)**  
**R6** Fixed: Structure, Random: Subject and Item,  $\chi^2(2) = 8.7735, p < .05$ , **apass > vcontrol** ( $\beta = 36.22, SE = 12.43, t = 2.915, p < .05$ ), **apass > vpass** ( $\beta = 24.17, SE = 12.48, t = 1.937, p = .05$ )  
**R7** Fixed: Structure, Random: Subject (Struct random slopes) and Item,  $\chi^2(5) = 18.77, p < .05$ , **apass > vcontrol** ( $\beta = 26.05, SE = 13.28, t = 1.962$ )  
 Note: There were no significant effects in **R8**. **R5** has been omitted from visuals as it was only used in vcontrol. *p*-values not avail. for models with random slopes

## Experiment 2

For the Swedish L2 speakers of English, we explored the possibility of crosslinguistic influence from Swedish (e.g., French-Mestre & Pynte, 1997), whereby superficial similarities between Swedish *vara* and English *to be* would support adjectival activation and thus preclude agent activation, causing processing difficulty for both *apass*(3a) and *vpass* (3b) beginning at the rationale clause region.

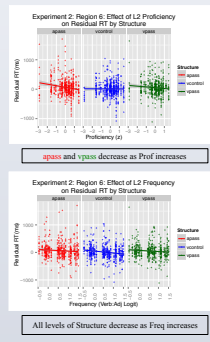
## Method

### Participants

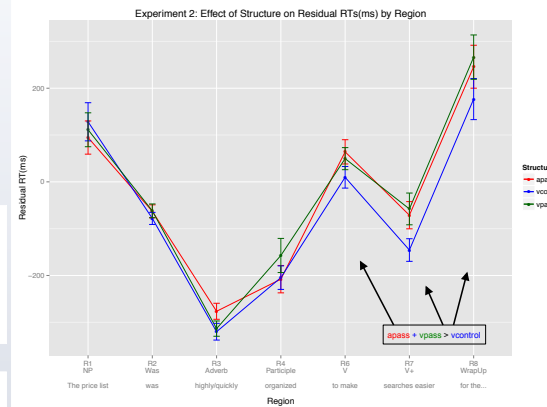
Forty-two Swedish L2 English speakers, aged 18-40, prescreened for language history to exclude native English speakers and bilinguals.

### Materials and Procedure

As in Experiment 1, with two additional proficiency tests at the end of the experiment: LexTALE (Lemhöfer & Broersma, 2011) to test vocabulary knowledge and a subset of the Oxford Placement Test (Allan, 1992). Both were standardized and averaged into one Proficiency factor.

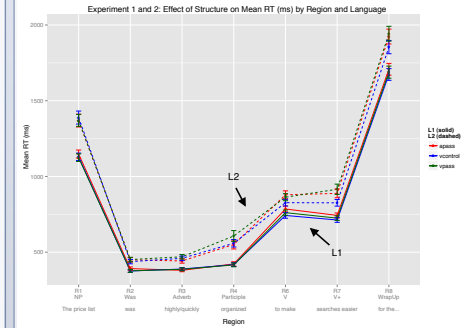


## Experiment 2 Results



**Experiment 2 (linear mixed models analysis)**  
**R6** Fixed: Structure\*Prof and Frequency, Random: Subject and Item (Freq random slope for both),  $\chi^2(2) = 10.1, p < .05$ , **apass > vcontrol** ( $\beta = 55.42, SE = 15.57, t = 3.56$ ), **vpass > vcontrol** ( $\beta = 38.49, SE = 15.637, t = 2.46$ ), Frequency ( $\beta = -52.78, SE = 22.70, t = -2.33$ ). **High V:A < Low V:A**, Structure\*Proficiency: **apass and vpass decrease as Prof increases** ( $\beta = -56.58, SE = 18.00, t = -3.143; \beta = -36.284, SE = 18.02, t = -2.01$ )  
**R7** Fixed: Structure, Random: Subject (Struct random slopes) and Item ( $\chi^2(5) = 65.408, p < .001$ ), **apass > vcontrol** ( $\beta = 72.93, SE = 19.48, t = 3.75$ ), **vpass > vcontrol** ( $\beta = 90.16, SE = 27.46, t = 3.28$ )  
**R8** Fixed: Structure, Random: Subject (Struct random slopes) and Item,  $\chi^2(2) = 14.13, p < .05$ , **apass > vcontrol** ( $\beta = 66.32, SE = 31.90, t = 2.08$ ), **vpass > vcontrol** ( $\beta = 87.47, SE = 33.39, t = 2.62$ )  
 Note: *p*-values not avail. for models with random slopes.

## Experiments 1 and 2: L1/L2 RT Differences



**L2 > L1:** **R3** ( $\beta = .17, SE = .05, t = 3.07$ ), **R4** ( $\beta = .22, SE = .03, t = 3.11$ ), **R6** ( $\beta = .11, SE = .05, t = 2.41$ ), **R7** ( $\beta = .17, SE = .05, t = 3.17$ ), **R8** ( $\beta = .14, SE = .05, t = 2.57$ )

## Conclusions

- The main effect of Structure in Experiment 1 R6 and R7 suggests that adjectival passives do not activate agents into the discourse to the same degree as their verbal counterparts.
- For the L2 group in Experiment 2, the longer reading times in R3-R8 (compared to the L1 group) demonstrate an expected finding that processing is slower overall for non-native speakers.
- With regard to structure, Swedish L2ers process both adjectival passive types with more difficulty than the control (an effect attenuated with increasing proficiency), but show no difference between the two types. The absence of a distinction between the two types in Swedish, raises the possibility that the differences observed in L2 stem from L1 transfer.
- The L2 data, showing an early overall facilitation for more frequently verbal participles further suggest that Swedish L2 speakers are making more use of lexical information (past participle frequency) than native speakers.

## Open Questions

- Can the agent be computed from the discourse (e.g., Williams, 1985)? Similar patterning between our L1 verbal passive and overt agent control supports the claim that agent activation is tied to a participle's lexical representation and not just computed from the discourse.
- Transfer or general L2 effects? A third study on a different group of L2 speakers is needed to confirm the current study's initial findings.
- It is not clear why the Structure by Proficiency interaction would show a benefit for *apass* and *vpass* (as opposed to just *vpass*). What does higher proficiency lead to?
- Contribution of adverb to the Structure effect?

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