# Wh-movement with there: experimental evidence

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## **1** Introduction

Aissen (1975) observed that the English *there*-construction has two faces depending on the verb it occurs with: either *be* (henceforth: *there-BE construction*), cf. (1-a) or unaccuastive verbs (henceforth: *there-V construction*), cf. (1-b). She shows on the basis of introspective data that the two constructions behave differently with respect to *wh*-movement (among others). In this respect, she argues, the *there-V* construction patterns with locative inversion, illustrated in (1-c).

- (1) a. There was a bus in front of the station.
  - b. There arrived a bus in front of the station.
  - c. In front of the station was/ arrived a big coach.

This paper presents experimental evidence from a magnitude estimation experiment that partly supports Aissen's intuition.

# 2 The Data

The current study tested the interaction of (i) construction type (existential: *there* V/be NP; locative: *there* V/be NP PP; inversion: PP V/be NP;) (ii) verb type (*be* vs. unaccusative verbs) and (iii) type of *wh*-item (base vs. *what* vs. *which* X vs. *how many* X).<sup>1</sup> These variables classify 24 separate sentence types, for each of which the 45 participants in the online experiment have been tested twice. The study employed the magnitude estimation technique (cf. Bard et al., 1996) with the help of the WebExp Software version 2.1 (cf. Keller et al., 1998). The set of (lexical) data used was carefully selected with respect to word frequency, syllable length and plausibility considerations.

<sup>&</sup>lt;sup>1</sup>I would like to thank Sam Featherston for his generous help with the set up and implementation of this experiment. Without him, I would not have been able to do this experiment, yet, the shortcomings and errors are all mine.

#### **3** Results

**1.** All encoded variables showed a significant effect on the judgements of the participants (for *wh*-movement:  $F_I(3,38)=176$ , p<.001; for the factor verb:  $F_I(1,40)=312$ , p<.001; for construction type:  $F_I(2,39)=176$ , p<.001). Order had a significant effect ( $F_I(1,40)=6.5$ , p<.025), as well.

**2.** The main finding is that there is indeed a difference between the *there*-be construction and the *there*-V construction with respect to *wh*-movement. First of all the level of acceptability is significantly higher with the *there*-BE construction than with the *there*-V construction (p<.025 for all pairs), cf. Table 1.<sup>2</sup> Furthermore, with *there*-BE the differences between *how many* vs. *what* vs. *which* are significant in a pairwise comparison (*what* vs. *which*: p<.025, *what* vs. *how many*: p<.025, *which* vs. *how many*: p<.025), with the *there*-V construction, only *how many* extraction differs significantly in a pairwise comparison from *what*- and *which*-extraction, with the latter two not showing evidence for differences (*what* vs. *which*: p=.917, *what* vs. *how many*: p<.025, *which* vs. *how many*: p<.025).

	base	what	which	how many
there-BE	1.282	0.706	-0.045	0.996
there-V	0.206	-0.622	-0.615	-0.397
loc inversion	0.731	-0.714	-0.762	-0.733

Table 1: There-BE vs. there-V vs. locative inversion

**3.** The *there*-BE construction is also different from the locative inversion construction, both in terms of level of grammaticality under *wh*-movement and sensitivity to extracted *wh*-item. Whereas *there*-BE shows significant effects with extraction (see above), the locative inversion construction does not (pairwise comparison for locative inversion: *what* vs. *which*, p=.288; *what* vs. *how many*, p=.690; *which* vs. *how many*, p=.574).

**4.** *There*-V patterns on a par with the locative inversion construction with respect to the level of acceptability of *what*- and *which*-extraction. However, *there*-V has a significantly better score for extraction of *how many* than locative inversion does (cf. table 1).

# 4 Discussion

First of all, the findings support Aissen's idea that the *there*-BE and the *there*-V construction have to be distinguished. This result is interesting in two respects. It shows,

<sup>&</sup>lt;sup>2</sup>The judgements are given in mean z-scores. Please note that these scores do not present an absolute grammaticality but can only express relative acceptability, nothing more.

first of all, that the introspective data used by Aissen is valid. Second, it challenges Moro's (1997) analysis of English *there*, which predicts, as will be shown in more detail, that *which*-extraction out of *there*-BE should pattern with extraction in the locative inversion. This cannot be supported from the data raised here.

Furthermore, the data also shows the so-called definiteness effect (cf. Milsark, 1977; Safir, 1985): *what*- and *how many*-extraction is judged more acceptable than *which*-extraction. However, the data also reveals that to extract *how many* out of *there*-BE is slightly but significantly better than extraction of *what*. This might mean that the two should be treated differently, however, it might also be an effect of 'context': extraction with *how many* gives an additional noun (*How many buses*...? as opposed to *What*..?) providing more information for finding a natural context for the clauses. Whether this effect holds, needs to be investigated further.

Finally, the results do neither clearly support nor clearly reject Aissen's position that *there*-V has to be treated on a par with locative inversion constructions. On the one hand, the level of acceptability is equal, suggesting that they are similar. However, the fine-grained judgements of the magnitude estimation technique revealed that the *there*-V construction is sensitive to the type of *wh*-item, with *how many*-extraction judged significantly higher than *what* vs. *which*-extraction. The locative inversion construction does not show this sensitivity.

## References

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