On experiments on PPs with gaps in

Synopsis. Omission of the object of a preposition in configurations such as (1) is permitted in British (BrE) but not North American (NAE) English. Such phenomena are known as *Prepositional Object Gaps* (POGs), and are the subject of an ongoing debate in the literature. In the first systematic generative study of POGs, Griffiths & Sailor (G&S, 2015) propose that they are traces of A-movement, as in (2) (see also G&S 2017, S&G 2019). However, Stockwell & Schütze (S&S 2019) critique both the data and analysis of G&S. They present an alternative empirical picture and suggest that POGs would be better analysed as akin to French "orphan" Ps and/or (null) R-pronouns in mainland Germanic (see also Stockwell et al., to appear).

(1) He was carrying a box with cups in (it).
(2) He was carrying [a box]$_1$ with cups in t_1.

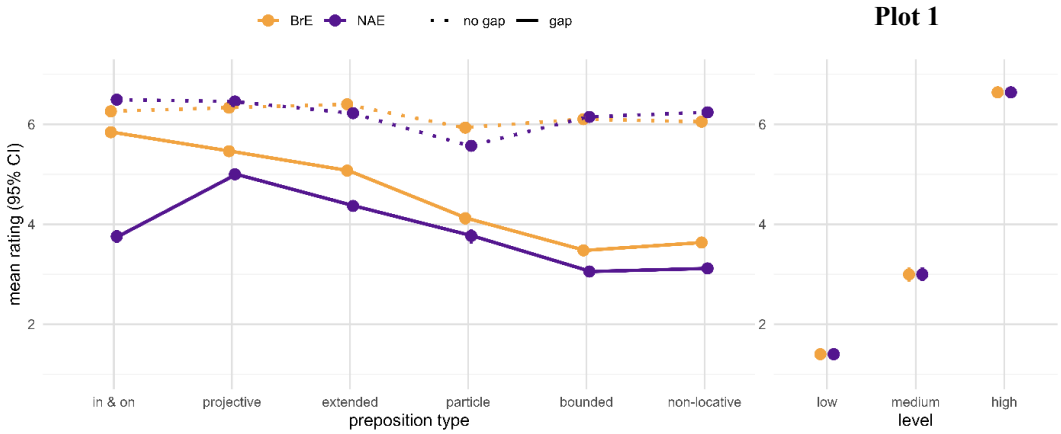
The contrasting empirical datasets from G&S and S&S are both based on acceptability judgment data collected informally from a handful of (different) BrE speakers. While such methods are usually unproblematic for generative syntax research (Sprouse & Almeida 2012, 2017, 2018, Sprouse et al. 2013), there are circumstances where more formal methods are appropriate. For reasons relating to small effect sizes, the potential for regiolectal variation on POGs within BrE, and the likelihood of high idiolectal variation (which is common for omission phenomena; see e.g., Thoms 2019 for VP ellipsis), we suggest this is one such circumstance. To create a reliable empirical foundation on which competing analyses of POG configurations can be evaluated, we conducted five large-scale acceptability judgment studies using formal experimental methods (e.g. large sample sizes; modelling idiolectal variation as a random effect). Each experiment addresses an issue relating to POGs, most often a point of empirical contention between G&S and S&S. Our results support G&S on some points, and S&S on others. We conclude that, overall, a revised version of G&S's analysis currently seems best-suited to capture the properties of POGs we observe. This abstract summarises only the results of experiment 1 (287 BrE speakers & 218 NAE speakers); however, the findings of experiments 2 to 5 are described briefly below, and will be covered in depth during the talk.

Background to experiment 1. G&S and S&S agree that POGs are licensed only with locative spatial Ps, but disagree over exactly which Ps. This question cannot be answered by obtaining judgments from only BrE speakers, as all English varieties permit a wide variety of phrases to be omitted after locative spatial Ps (3-4). Therefore, we collected judgments both from POG dialects (BrE) and non-POG dialects (NAE). If the BrE speakers accept the configuration but the NAE speakers reject it, then we would have evidence of a true POG configuration. G&S applied this methodology to Svenonius' (2010) taxonomy of locative spatial prepositions; see (5) for their list of POG-licensing Ps. S&S report different BrE judgments to G&S: for S&S, POGs are fully acceptable only with *in* and *on*. S&S's judgments come from speakers of 'Standard Southern British English', whereas G&S's come from various regions of England (London, Cambridge, Bristol, East Midlands). One possible explanation for the different judgments could therefore be that there is regiolectal variation within BrE regarding which Ps license POGs. The purpose of Exp1 was to test this, and determine just which Ps are true POG-licensors.

(3) That film was just a remake with the plot taken away ([$_{\text{PathP}}$ from it]).
(4) Nils looked over the snow drift. The frozen fjord beyond ([$_{\text{DP}}$ it]) was dotted with seals.
(5) **projective:** above, behind, below, beyond
extended: across, along, around, over
bounded: between
particle: down, in, on, up
(6) Mine's the mug with the coaster **under** (it). [extended]
(7) I think this crowd has some undercover police officers **among** (it). [bounded]
(8) Look – this table here has stools **beneath** (it). Let's sit here! [projective]
(9) Mine's the house with a bus-stop in front **of** (it). [non-locative]

Procedure. All five experiments (each 1-7 Likert scale) were conducted between April 2020 and April 2023. Participants were sourced via *Prolific* (online, unsupervised). BrE and NAE speakers completed 2 different versions of each experiment, where stimuli differed across these versions only regarding salient natiolectal variants, for instance in spelling conventions (e.g., *colour* vs. *color*) and lexis (*flat* vs. *apartment*). Each experiment contained the *standard fillers* for English from Gerbrich et al. (2019). Comparison across the BrE and NAE groups (henceforth COHORT) was made possible by z-scoring a participant's raw

ratings for test items over her ratings for the standard fillers. We fit linear mixed effect models (LMMs) using R's *lmer*. When required, we conducted post-hoc Tukey-adjusted t-tests of the best fitting model's estimated marginal means (using R's *emmeans*). We focus here on Experiment 1, which had a 2 x 2 x 6 design. The factor PREPTYPE had 6 levels: each of the classes listed in (5), *in&on*, and *non-locative*. The factor GAP (*yes*, *no*) compared P-object omission and retention. See (7-9) for example test items. Plot 1 shows the mean ratings for test items (left) and standard fillers (right). Because the best-fitting LMM of the z-scored results (10) returned significant interactions, we conducted post-hoc comparisons.



(10) score ~ cohort * gap * preptype
+ (cohort | item) + (1 | subject)

Results. As expected, in the *no-gap* condition, differences across COHORT (BrE vs. NAE) and PREPTYPE are insignificant. In the *gap* condition, a small (~0.3 on the 1-7 scale) but statistically-significant difference between the BrE and NAE groups was observed at each level of PREPTYPE aside from *in&on*, where the difference is highly significant ($t = 13.55$, $p > 0.01$). BrE speakers treat gap configurations involving *in* and *on* like those involving projective Ps ($t = 1.86$, $p = 0.42$), whereas NAE speakers treat *in* and *on* like just another particle (*in&on* vs. *particle*: $t = 0.09$, $p = 0.99$). Other tests (omitted here) revealed no regiolectal variation within BrE, ruling this out as a potential source of the differing empirical claims between G&S and S&S. **Discussion.** The results of Exp1 support S&S's claim that POGs are only licensed with *in* and *on*. P-object omission with other Ps looks like *ground omission*: the acceptability cline aligns with Svenonius's (2010) claim that ground omission is most acceptable with projective Ps, less so with extended Ps, and unacceptable – relatively so, it transpires – with bounded and non-locative Ps. G&S's claim that the Ps in (5) are POG-licensors likely arises from a misinterpretation of the upward shift of the acceptability cline on Plot 1 for BrE speakers. That the worst cases of P-object omission receive 'medium' scores in absolute terms (i.e., when compared to the standard fillers) is unsurprising: these sentences involve only omission of a contextually-recoverable pronoun, not the garbled syntax of the 'low' fillers (e.g., *Historians wondering what cause is disappear civilization.*).

Pulling back from Exp1, G&S's A-movement analysis predicts that POG configurations should show freezing effects, and that POGs should be licensed only within possessive structures introduced by *have* and *with*. The results of Exp2, Exp4, and Exp5 test – and confirm – these predictions. Conversely, S&S claim that figure extraction causes unacceptability in POG configurations. Exp3 shows that such extraction causes mild, statistically-insignificant degradation in acceptability. The results of Exp3 therefore contradict very recent experimental findings reported in Stockwell et al. (to appear), and pose a challenge for their analysis of POGs. In the talk, we take stock of the extant analytical options consistent with our findings.

Selected References. Griffiths, J. & C. Sailor. 2015. Prepositional object gaps in British English. *Linguistics in the Netherlands* 32, 63-74. • Stockwell, R. & C. Schütze. 2019. Objectless locative prepositions in British English. *Proceedings of the Linguistic Society of America* 4 (1): 48:1–15. • Stockwell, R., Himmelreich, A. & C. Schütze. To appear. An extraction restriction with complement-less prepositions in British English but not dialectal German. To appear in *Proceedings of 35th Comparative Germanic Syntax Workshop*. Lang. Sci. Press. • Svenonius, P. 2010. Spatial P in English. In G. Cinque & L. Rizzi (eds.), *Mapping spatial PPs: The cartography of syntactic structures*, 127–160. OUP.