

Pseudogapping does not involve heavy shift

Introduction. Pseudogapping (1b), which is similar to English VP ellipsis (VPE) (1a), has proven to be an important case study for investigating the interaction between ellipsis and other grammatical phenomena.

- (1) a. John hasn't dated Mary, but Bill has dated ~~Mary~~.
b. John hasn't dated Mary, but Bill has ~~dated~~ Susan.

The question of which arguments can be a pseudogapping remnant has implications for the location of ellipsis in the grammar. Does ellipsis target structures in which the remnant has undergone Object Shift (Lasnik 1995, 1999), Heavy NP Shift (HNPS; Jayaseelan 1990), or both (Takahashi 2004, cf. Lasnik 1999)?

- (2) a. (*)John gave Mary a lot of money, and Bill will ~~give~~ Susan ~~a lot of money~~.
b. (*)John gave Mary a lot of money, and Bill will ~~give~~ ~~Mary~~ a lot of advice.

One difficulty that arises in using pseudogapping to investigate this question is that authors report inconsistent judgments on crucial datapoints—e.g., the pattern of grammaticality in (2) matters for various theories but some authors report that (2a) is ungrammatical while others report that (2b) is. This disagreement is likely due in part to the marginality of the construction as a whole—a marginality that has long been noted (Levin 1978, 1986). Some authors go as far as to deny its grammaticality *tout suite* (Jackendoff 1971).

Contribution. Here, we present a large-scale acceptability judgment study aimed at ascertaining which pseudogapping remnants are in fact licit. We show (i) that, *pace* Jackendoff, pseudogapping is indeed a grammatical, if marginal, phenomenon; and (ii) that, contrary to proposals reliant on heaviness or focus to evacuate a remnant from an elided VP (Jayaseelan 1990, 2001; Gengel 2007), NP heaviness does not predict pseudogapping's acceptability as it does for HNPS sentences—if anything, it further degrades it.

Background. The fact that pseudogapping and VPE share surface features (Sag 1976, Johnson 2001) has led many authors to propose that pseudogapping should be treated as an instance of VPE. Seminal approaches posit that pseudogapping involves dislocation of the verb's object to a VP-external position prior to VPE.

Jayaseelan (1990) suggests that HNPS feeds VPE to produce pseudogapping sentences. As evidence, Jayaseelan notes parallels between HNPS targets and pseudogapping remnants—e.g., the unavailability of preposition stranding in either case, and the constraint that both the remnants and HNPS objects be heavy. (See also more recent proposals that posit movement to spec. FocP, such as Jayaseelan 2001, Gengel 2007.)

Lasnik (1999) notes a misalignment of HNPS and pseudogapping with respect to double object constructions. Lasnik reports that the first object in a double object construction is not available to undergo HNPS, but it is an acceptable pseudogapping remnant, while the second object in a double object construction is free to undergo HNPS, but is an unacceptable pseudogapping remnant. (The judgments in (3) are Lasnik's.)

- (3) a. ?John gave Bill a lot of money, and Mary will Susan.
b. *John gave a lot of money the fund for the preservation of VOS languages.
c. *John gave Bill a lot of money, and Mary will a lot of advice.
d. John gave Bill yesterday more money than he had ever seen.

Lasnik suggests that the pseudogapping remnant escapes the VP through leftward Object Shift to the specifier of an Agr_{OP}. Object Shift accounts for the difference between the two objects in the double object construction to be pseudogapping remnants, since the first objects asymmetrically c-commands the second, and thus movement of the second over the first would be a violation of relativized minimality.

Takahashi (2004) offers a hybrid of Jayaseelan's and Lasnik's approaches, in which both HNPS and Object Shift are operational in the grammar and available for deriving the right side remnant. Crucially, Takahashi suggests that both objects in a double object construction are acceptable pseudogapping remnants.

Predictions. In our experiment, we investigate the interaction between heaviness and remnant type to assess the above proposals. Approaches that posit heaviness as a means of escaping the VP predict that the acceptability of pseudogapping should improve as weight is added to the DP in the form of NP adjuncts.

Experiment. A $3 \times 2 \times 2$ factorial design was used with all variables within subjects. The three factors were CONSTITUENT—three levels: transitive direct object (*DOT*), ditransitive first direct object (*DOI*),

ditransitive second direct object (*DO2*)—SENTENCE TYPE—two levels: *pseudogapping*, *NP shift*—and NP WEIGHT—two levels: *light*, *heavy*. Example experimental items for each condition are given in (4) and (5). *Light* items are those without the parenthesized NP adjuncts, and *heavy* items are those with those adjuncts.

(4) *Pseudogapping*

DO1: John gave the valet a tip, and Mary will **the maid (who cleans their room)**.

DO2: John gave the valet a tip, and Mary will **the keys (to their red convertible)**.

DOT: Frank met the captain, and Lloyd will **the general (who ordered the assault)**.

(5) *NP shift*

DO1: Mary will give a tip before the dinner **the maid (who cleans their room)**.

DO2: Mary will give the maid before the dinner **a tip (that is too small)**.

DOT: Lloyd will meet after the parade **the general (who ordered the assault)**.

124 participants were recruited through Amazon Mechanical Turk to rate sentence acceptability on a 1-to-7 scale. Each test item was judged by 30 participants, and each participant judged 36 test items (3 per condition) and 36 filler items. Filler items consisted of versions of our test items with extraposed NP adjuncts, e.g. (6), as well as verb-particle constructions involving light, e.g. (7), and heavy NPs, e.g. (8).

(6) Lloyd will meet **the general** after the parade **who ordered the assault**.

(7) a. Stacy turned off **it**.

(8) a. Stacy turned off **the lamp she hung next to the bed**.

b. Stacy turned **it** off.

b. Stacy turned **the lamp she hung next to the bed** off.

Results. We report comparisons of conditions using Wilcoxon signed rank tests for clarity, but ordinal mixed model analyses of our data produce the same pattern of results. There are three main findings.

First, NP shift is good with the second object (*DO2*) in a double object construction (DOC) and the only object (*DOT*) in a transitive construction but bad with the first DOC object (*DO1*). Further, NP shift with *DO2* and *DOT* improves with heaviness, but it does not with *DO1*. This is evidenced by the fact that the mean rating for *DO1* in both *NP shift* conditions is low (2.2), and the difference between the *DO1 light* and *heavy NP shift* conditions is not reliable ($p = 0.412$). In contrast, the *DO2* and *DOT light NP shift* conditions are better than the *DO1 light NP shift* condition ($ps < 0.001$), and the corresponding *DO2* and *DOT heavy NP shift* conditions are better than their *light* counterparts ($ps < 0.001$).

Second, though marginal, pseudogapping with *DO1*, *DO2*, and *DOT* remnants is still better than HNPS with *DO1*. This is evidenced by the fact that the *light pseudogapping* conditions for all three are reliably better than the *DO1 light NP shift* condition ($ps < 0.01$). This suggests that, *pace* Jayaseelan, HNPS cannot be the only process feeding ellipsis in pseudogapping sentences, since that account predicts that pseudogapping with *DO1* should be no better than HNPS with *DO1* (though Takahashi's account remains an option).

Finally, the acceptability of pseudogapping with *DOT* remnants is better than pseudogapping with *DO1* and *DO2* remnants when the remnant is light, but no better when the remnant is heavy. Furthermore, pseudogapping does not reliably improve with heaviness for any of the three; and in the case of *DOT*, it actually gets worse ($p < 0.001$). This suggests that accounts on which HNPS feeds VPE are incorrect; otherwise, we would have seen the same sort of heaviness improvement seen in the *NP shift* sentences.

Discussion. We established that pseudogapping is grammatical and that accounts on which HNPS feeds VPE to produce pseudogapped sentences are untenable. This raises the question which accounts are left. One difficulty is that available accounts not based on HNPS, such as Lasnik's, cannot handle the fact that both *DO1* and *DO2* appear to be possible remnants. One finding that may indicate a way forward is the difference between pseudogapping with transitive object remnants v. ditransitive object remnants—the former are better than the latter. A licensing-based account, in the spirit of Lasnik's, might take advantage of this.

Keywords: pseudogapping, ellipsis, heavy NP shift, object shift, rightward movement

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