

At the Interfaces: Deriving and Interpreting Focus and Anaphora in VP-Ellipsis

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Recent research suggests that a full understanding of the interaction between ellipsis and anaphora must involve more than the syntactic, phonological, semantic, or pragmatic components viewed in isolation (Kehler (2000), Winkler (2005), among others). To better determine the architecture of the grammar, research has shifted to interface conditions between the aforementioned components. The present study supports this shift by exploring the processing of focus and anaphoric constituents in VP-ellipsis. Specifically, I report the results of a psycholinguistic study investigating the generation and interpretation of the VP-ellipsis structure in (1a), on the interpretation in (1b), dubbed the “reciprocal.” Current theory (Foley et al. (2003) following Sag (1976)) disallows the reciprocal reading. But, I argue that it is in fact available when certain focus features are “appropriately accommodated.” I present experimental data on a processing model that handles (1a) on the canonical (*sloppy* and *strict*) interpretations, as well as the reciprocal. The model supports a syntactic-prosodic analysis in which focus features are used at the interfaces to aid in generating the appropriate syntactic, phonological, and semantic representations of (1a). More generally, I formalize a set of computational processes that interact at the interfaces, and present an analysis of focus that yields interesting implications for (i) our understanding of the licensing of VP-ellipsis, and (ii) our current theory of the connections between the narrow syntax, PF, LF, and the interfaces.

The reciprocal interpretation of (1a) challenges current theory, as it cannot be classified as a canonical *sloppy* or *strict* interpretation. I argue that the reciprocal falls out from an extension of the analysis of Reinhart’s (2004) processing theory of Stress Shift and the newly discovered prosodic operation known as “Stress Transfer.” Specifically, I show that it follows from Reinhart’s theory that the reciprocal interpretation is available for the overt, non-elided structure in (2b) when Stress Shift is applied. I then account for the licensing of VP-ellipsis by formalizing Parker’s (2008) introduction of Stress Transfer. According to Reinhart, Stress Shift is an uneconomical, parsing-specific operation that adjusts the output of the Computational System of human language (CS) to meet (contextual) interface needs by changing focus selection. Stress Shift applies in (2b) by adjusting the output of the Neutral Main Stress Rule (NSR) to shift focus from the subject DPs to the object pronouns. Reinhart notes that foci obtained in this way are “contrastive” and “switches reference.” Stress Shift switches reference of the pronouns in (2b) (as based on the overtly mentioned members of the reference set, *viz.* {*Calvin, Hobbes*}) to yield a standard reciprocal interpretation. According to the Phonological Reduction Hypothesis (Chomsky and Lasnik (1993)), ellipsis is licensed when redundant information is marked by a low-flat intonation. Thus, it would appear as though ellipsis cannot be licensed in (2b) with the overt presence of the focused (intonationally prominent) pronoun in the second clause. However, experimental data from this study indicate that VP-ellipsis on the reciprocal is in fact permitted, but only when Stress Transfer is applied. Formalizing Parker (2008), Stress Transfer is a prosodic operation that shifts focus selection to the nearest categorically parallel constituent. This operation is used as a bypassing strategy to yield appropriate LF and PF representations when the output of the CS does not meet interface needs. Stress Transfer applies in (2c) by shifting focus from the object pronoun in the second clause to the local subject. This operation leaves the pronoun with a low-flat intonation, thereby allowing VP-ellipsis.

The model’s predictions are strongly supported by acceptability data collected from a magnitude estimation experiment (acceptability ratings most relevant for present purposes are charted in Figure (1)). As we can see in (3f) and (3c), the reciprocal is in fact available when Stress Shift and Stress Transfer are appropriately applied. Furthermore, differences in acceptability ratings document a processing cost that is hypothesized to occur in adults during restricted instances of Reference-Set Computation (Reinhart (2004)). Most importantly, I account for a complex phenomenon and reveal how the core components of the grammar connect to generate and process focus anaphoric elements in VP-ellipsis by elucidating for the first time a particularly interesting interaction between Stress Shift and Stress Transfer. In discussion, I will assess the explanatory value of my syntactic-prosodic analysis, and explore its broader implications for current theory by exploiting the operations of Stress Shift and Stress Transfer to account for a set of phenomena beyond VP-ellipsis. Overall, I show how focus features play an active and important role in the mapping between the narrow syntax, PF, LF and the interfaces during the processing of anaphoric elements.

Data

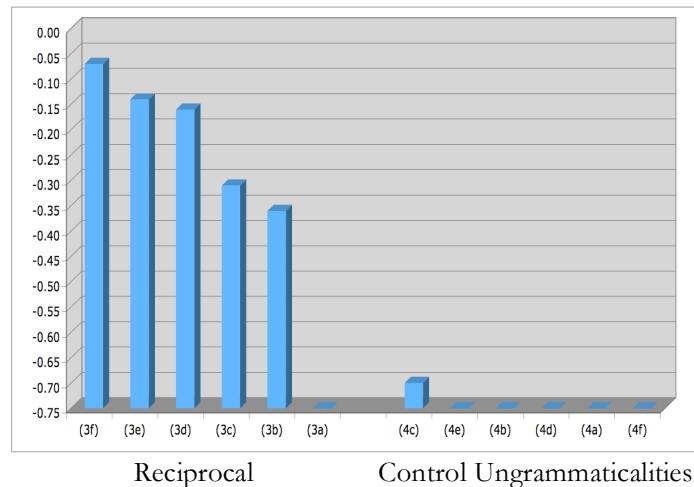
- (1) a. Calvin pounced on him because Hobbes did [~~pounce on him~~]
 b. Calvin pounced on Hobbes because Hobbes pounced on Calvin
- (2) a. *Output of NSR*: **CALVIN** pounced on him because **HOBBS** pounced on him
 b. *Apply Stress Shift*: Calvin₁ pounced on **HIM**₂ because Hobbes₂ pounced on **HIM**₁
 c. *Stress Transfer and Ellipsis*: Calvin₁ pounced on **HIM**₂ because **HOBBS**₂ did [~~pounce on him~~]

(3) Relevant Target Expressions for Figure (1):

- a. Calvin pounced on him because Hobbes did
 b. Calvin pounced on **HIM** because Hobbes did
 c. Calvin pounced on **HIM** because **HOBBS** did
 d. Because Hobbes pounced on him, Calvin did right back
 e. Because Hobbes pounced on **HIM**, Calvin did right back
 f. Because Hobbes pounced on **HIM**, **CALVIN** did right back

Note:
BOLD indicates Focus

Figure (1):



40 adult, native English speakers were tested. A repeated measures ANOVA indicated a statistically significant difference between the reciprocal and the control ungrammaticalities ($F=18.68, p=0.002$). Target (3f) clearly demonstrates that the reciprocal is an acceptable interpretation for VP-ellipsis when the operations of Stress Shift and Stress Transfer are accommodated. Degradations in (3e-a) follow from the controlled manipulation of the placement of focus.

Selected References:

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- Foley, C., Núñez del Prado, Z., Barbier, I., & Lust, B. 2003. Knowledge of variable Binding in VP-ellipsis: Language acquisition research and theory converge. *Syntax 6(1)*: 52-83
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- Reinhart, T. 2004. The Processing Cost of Reference-Set Computation: Acquisition of Stress Shift and Focus. *Language Acquisition, 12(2)*: 109-155.
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