PRO as an anaphoric variable: Rebinding and MAXELIDE-effects

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1 Introduction

A significant amount of research has focused on understanding the nature of the silent, embedded subject position of Control structures, indicated as Δ in (1) below:

(1) Lou tried [Δ to leave]

Much of this research, which is reviewed in Davies & Dubinsky 2004 and Landau 2013, has become concerned with defending one of two prominent positions. The standard transformational analysis in (2) postulates the null pronominal argument PRO, which is promoted to the embedded subject position (Chomsky 1981, Landau 2000, Landau 2015).[1] The influential alternative presented in (3) proposes that the embedded subject position may contain an A-trace of the matrix subject (e.g., Hornstein 2001, Grano 2015, Green 2019).

(2) *PRO Theory of Control*
Lou$_1$ tried [PRO$_1$ to leave]

(3) *Movement Theory of Control*
Lou$_1$ tried [t_1 to leave]

I will argue in what follows that the behavior of Δ under ellipsis offers a way of adjudicating between the hypotheses above. Section 2 introduces the observation by Sag (1976) that, in the context of $\overline{\text{A}}$-movement, there is a preference in Control structures for ellipsis of a root-level predicate over an embedded predicate.[2]

(4) GARY knows who$_1$ Δ to invite x_1 and also
  a. ANNE does $\langle_{\text{VP}}$ ~~know who$_2$ Δ to invite y_2~~ $\rangle$
  b. * ANNE knows who$_2$ Δ to $\langle_{\text{VP}}$ ~~invite y_2~~ $\rangle$

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[1] Although not explicitly discussed here, I believe it is appropriate to group predicative theories of Control, such as Williams 1980 and Manzini 1983, together with the PRO Theory. These theories, too, posit variables in the embedded subject position that are to be distinguished from A-traces.

[2] A significant issue, which deserves more attention than it is afforded here, is the placement of the additive particle *also*. While the placement of *also* regularly affects naturalness, I have found that it much less frequently affects the MAXELIDE-effect for speakers who have provided judgments. In an attempt to account for this factor, the data presented throughout the paper illustrate several alternative placements of *also* that the reader is invited to experiment with. I also offer constructions in section 4 that do not rely on the presence of this particle.

We will also see in section 2 that this contrast shows the signature properties of so-called MAXELIDE-effects, which arise in the context of variables that are 're-bound' from outside an ellipsis site (e.g., Sag 1976, Takahashi & Fox 2005). By characterizing the data in this way, it will be possible in section 3 to demonstrate that treating Δ as a bound variable offers an explanation for the contrast in (4). The analysis, therefore, serves as evidence in favor of the PRO Theory of Control.

Section 4 investigates a pair of predictions of the proposed analysis. To the extent that Δ can be identified as the bound anaphoric variable PRO, other bound anaphoric variables, such as pronouns, should similarly feed MAXELIDE-effects. We will see several ways in which this prediction is borne out. The proposed analysis also leads us to expect that A-traces should fail to feed MAXELIDE-effects in similar environments. The limitations of English prevent us from fully testing this prediction. However, I will lay out the desiderata for running the intended experiment before offering some considerations against the alternative Movement Theory of Control.

Most of the discussion to follow focuses on environments that display Obligatory Control, like in (4). However, Section 5 will briefly investigate Sag's (1976) original data, which display MAXELIDE-effects in the context of Non-Obligatory Control. Because PRO in these cases is not plausibly treated as a bound variable, there is a possible concern that these facts are not consistent with the analysis to come. I will argue that the data are in fact entirely consistent with the proposed analysis and offer an account of the identical behavior of unbound overt pronominals. The paper concludes with section 6.

2 MAXELIDE-effects in infinitival clauses

Research on MAXELIDE-effects is typically concerned with offering an account of the contrast in (5):

(5) I know that Jeanette was talking to SOMEONE but
  a. I don't know WHO$_1$ $\langle_{\text{TP}}$ ~~she was $[_{\text{VP}}$ talking to x_1 $]$~~ $\rangle$
  b. * I don't know WHO$_1$ $[_{\text{TP}}$ she was $\langle_{\text{VP}}$ ~~talking to x_1~~ $\rangle$ $]$

These data demonstrate a preference for ellipsis of the larger TP constituent, a process referred to as Sluicing, over ellipsis of the smaller VP constituent (see Schuyler 2001, Stockwell 2020, and the references therein). MAXELIDE-effects have also been observed in the context of sloppy interpretations for pronouns, as in (6):

(6) TOM$_1$ said that I embarrassed him$_1$ and
  a. SUSIE$_2$ did $\langle_{\text{VP}}$ ~~say that I $[_{\text{VP}}$ embarrassed her$_2$ $]$~~ $\rangle$ too
  b. * SUSIE$_2$ $[_{\text{VP}}$ said that I did $\langle_{\text{VP}}$ ~~embarrass her$_2$~~ $\rangle$ $]$ too

On the intended interpretation, whereby the elided pronoun *her*$_2$ is coreferential with *Susie*, there is a significant preference for ellipsis of the root-level predicate over the embedded predicate (Sag 1976, Takahashi & Fox 2005).

Building on the extensive discussion by Schuyler (2001), Merchant (2008) offers a descriptive generalization regarding the appearance of MAXELIDE-effects that we will adapt into the following:

(7) *Generalized* MAXELIDE
Let XP be an elided constituent containing a bound variable x_n. Let YP be a possible target for deletion. YP must not properly contain XP.

i. ✓ ZP$_n$ $\langle_{\text{XP}}$ ~~$\ldots$ [$_{\text{YP}}$ $\ldots$ x_n $\ldots$]~~ $\rangle$

ii. * ZP$_n$ [$_{\text{YP}}$ $\ldots$ $\langle_{\text{XP}}$ ~~$\ldots$ x_n $\ldots$~~ $\rangle$]

That is, in the case that ellipsis results in the non-pronunciation of a bound variable—an $\overline{\text{A}}$-trace or a bound pronoun—there is a significant pressure to elide the largest constituent that contains that bound variable. This statement is intended to reflect the general consensus that A-movement does not generate the conditions that feed MAXELIDE-effects (Merchant 2008, Messick & Thoms 2016, Overfelt 2020; *cf.* Hartman 2011). In (8) for example, Raising of the embedded argument *Peter* does not result in the same pressure against ellipsis of the embedded predicate (see also Takahashi & Fox 2005).

(8) ALLISON$_1$ seemed to t_1 enjoy the movie and

a. PETER$_2$ ALSO did $\langle_{\text{VP}}$ ~~seem to [$_{\text{VP}}$ t_2 enjoy the movie]~~ $\rangle$

b. ? PETER$_2$ ALSO [$_{\text{VP}}$ seemed to $\langle_{\text{VP}}$ ~~t_2 enjoy the movie~~ $\rangle$]

The primary empirical interest of this paper is illustrated by the data in (9)–(10), which are adapted from Sag 1976 and discussed in Lobeck 1995. In each case, an embedded question creates the conditions under which we observe MAXELIDE-effects in infinitival Control constructions. More specifically, there is a preference for ellipsis of the root-level predicate over ellipsis of the embedded predicate.

(9) GARY knows who$_1$ Δ to invite x_1 and also

a. ANNE does $\langle_{\text{VP}}$ ~~know who$_2$ Δ to invite y_2~~ $\rangle$

b. * ANNE knows who$_2$ Δ to $\langle_{\text{VP}}$ ~~invite y_2~~ $\rangle$

(10) JAMES asked what$_1$ Δ to read x_1 and

a. MAXINE ALSO did $\langle_{\text{VP}}$ ~~ask what$_2$ Δ to read y_2~~ $\rangle$

b. * MAXINE ALSO asked what$_2$ Δ to $\langle_{\text{VP}}$ ~~read y_2~~ $\rangle$

There are a couple of indicators that these constructions reflect the MAXELIDE-effects described above. As stated by the generalization in (7), the preference to maximize ellipsis arises only when ellipsis targets a constituent that contains an $\overline{\text{A}}$-trace or a bound pronominal. In the absence of any such bound variable, as in (11) and (12), ellipsis of the smaller predicate becomes possible, although possibly still with some degree of markedness.

(11) GARY knows Δ to invite someone and also

a. ANNE does $\langle_{\text{VP}}$ ~~know Δ to [$_{\text{VP}}$ invite someone]~~ $\rangle$

b. ? ANNE [$_{\text{VP}}$ knows Δ to $\langle_{\text{VP}}$ ~~invite someone~~ $\rangle$]

(12) JAMES asked Δ to read a poem and

a. MAXINE ALSO did $\langle_{\text{VP}}$ ~~ask Δ to read a poem~~ $\rangle$

b. ? MAXINE ALSO asked Δ to $\langle_{\text{VP}}$ ~~read a poem~~ $\rangle$

Second, following Schuyler (2001), it is understood that MAXELIDE-effects can be ameliorated by the presence of focus marked elements. The relevant generalization adapted from Schuyler 2001 is stated in (13).

(13) *Contrast-locality condition for VP-ellipsis*
For [variable binding from outside] the site of VPE to be licensed, there must be a contrastively focused expression in the c-command domain of the [binder] phrase.

This statement reflects the intuition that the pressure to not elide a focused element, such as sentential negation in (14) and (15), overrides the preference to maximize ellipsis. The result is the ability to elide the embedded predicate, but notably only when the focused negation appears in the scope of the *wh*-binder for the elided variable, as in the (a) variants.

(14) GARY knows who$_1$ Δ to invite x_1 but
  a. $^{?}$ ANNE [$_{\text{VP}}$ knows who$_2$ Δ NOT to $\langle_{\text{VP}}$ ~~invite y_2~~ $\rangle$]
  b. * ANNE DOESN'T [$_{\text{VP}}$ know who$_2$ Δ to $\langle_{\text{VP}}$ ~~invite y_2~~ $\rangle$]

(15) JAMES asked what$_1$ Δ to read x_1 and
  a. $^{?}$ MAXINE [$_{\text{VP}}$ asked what$_2$ Δ NOT to $\langle_{\text{VP}}$ ~~read y_2~~ $\rangle$]
  b. * MAXINE DIDN'T [$_{\text{VP}}$ ask what$_2$ Δ to $\langle_{\text{VP}}$ ~~read y_2~~ $\rangle$]

The relevant generalization regarding MAXELIDE-effects in Control structures can, therefore, be schematically represented as in (16) (see also Lobeck 1995).

(16) MAXELIDE-*elide effects in Control structures schematized*
  i. ✓ ZP $\langle_{\text{VP}}$ ~~$\ldots$ *wh*$_1$ $\ldots$ Δ $\ldots$ [$_{\text{VP}}$ $\ldots$ x_1 $\ldots$]~~ $\rangle$
  ii. * ZP [$_{\text{VP}}$ $\ldots$ *wh*$_1$ $\ldots$ Δ $\ldots$ $\langle_{\text{VP}}$ ~~$\ldots$ x_1 $\ldots$~~ $\rangle$]

The facts to be understood in the discussion that follows is that $\overline{\text{A}}$-movement across Δ exerts pressure to delete a larger predicate over a smaller predicate.

3 The role of PRO in MAXELIDE-effects

In order to make sense of the generalization in (16), I propose that Δ has the status of a bound variable, namely PRO. As such, it will induce additional MAXELIDE-effects of the kind described by Generalized MAXELIDE in (7).

3.1 A licensing condition for ellipsis

Behind this analysis is Sag's (1976) original account for the source of MAXELIDE-effects. As shown in (17), a pronoun that is free within an ellipsis site cannot be contra-indexed with a parallel pronoun in the antecedent.

(17) a. * Gary will [$_{\text{VP}}$ invite **her$_1$**] and then Anne will $\langle_{\text{VP}}$ ~~invite **her$_2$**~~ $\rangle$
'Gary will invite Sue and then Anne will invite Martha.'
  b. $[\![[_{\text{VP}} \text{ invite her}_1]]\!]^g \neq [\![\langle_{\text{VP}} \text{ invite her}_2 \rangle]\!]^g$

Descriptively, the attempted disjoint-reference interpretation disrupts the licensing of ellipsis. In a more technical sense, the contra-indexed pronouns are not guaranteed to be semantically equivalent under different variable assignment functions.

For Sag (1976), the same issue arises when a variable is "rebound" from outside the ellipsis site.[3] This is precisely the situation we observe when ellipsis deletes the trace of the *wh*-element in the embedded question in (18):

(18) a. * Gary knows **who$_1$** to [$_{\text{VP}}$ invite $\boldsymbol{x_1}$] and also
Anne knows **who$_2$** to $\langle_{\text{VP}}$ ~~invite $\boldsymbol{y_2}$~~ $\rangle$

b. $[\![\ [_{\text{VP}}$ invite $x_1\ ]\ ]\!]^g \neq [\![\ \langle_{\text{VP}}$ invite $y_2\ \rangle\ ]\!]^g$

Comparing the VPs in the example above, we again find variables that are free and contra-indexed within an ellipsis site and its antecedent. Thus, it should be expected that ellipsis is not possible.

While this intuition has proven to be influential, it has also become clear that there are instances of grammatical rebinding (Evans 1980, Jacobson 1992, Schuyler 2001). An illustrative example is provided in (19):

(19) a. **Sue$_1$**, we will [$_{\text{VP}}$ invite $\boldsymbol{x_1}$] and
Martha$_2$, we will $\langle_{\text{VP}}$ ~~invite $\boldsymbol{y_2}$~~ $\rangle$ also

b. $[\![\ [_{\text{VP}}$ invite $x_1\ ]\ ]\!]^g \neq [\![\ \langle_{\text{VP}}$ invite $y_2\ \rangle\ ]\!]^g$

Despite the $\overline{\text{A}}$-movement of the topics out of the ellipsis site and the antecedent, ellipsis of the VP is permitted.

This seemingly paradoxical state affairs, whereby rebinding is both impossible and possible, can be accommodated within the focus-based redundancy theory of ellipsis licensing that is offered in Rooth 1992a. Building on Takahashi & Fox 2005, we will state this condition as follows:

(20) *Redundancy Condition on Ellipsis Licensing*
Ellipsis of some XP is permitted only if

i.) there is a Parallelism Domain (PD) that contains XP,

ii.) there is an Antecedent Constituent (AC), and

iii.) either $[\![\ \underline{\text{AC}}\ ]\!]^{\text{o}} \in [\![\ \underline{\underline{\text{PD}}}\ ]\!]^{\text{f}}$ or $[\![\ \underline{\text{AC}}\ ]\!]^{\text{o}} \subseteq [\![\ \underline{\underline{\text{PD}}}\ ]\!]^{\text{f}}$

In different terms, licensing ellipsis involves recovering an Antecedent Constituent (AC) from the discourse that is either a member or a subset of the focus semantic value of a Parallelism Domain (PD). The PD may be a constituent that is co-extensive with, or one that properly contains, the XP to be elided. This makes it possible to calculate the licensing of ellipsis with reference to a constituent that contains the binder for the elided variable and, thus, avoid the issue of free contra-indexed variables.

The calculation of the redundancy condition on ellipsis for example (19) is presented in (21). By extending the PD to the CP2, which contains the binder for the elided variable, the CP1 will provide a suitable AC.

[3]The terms "rebound" and "rebinding" are adopted from Takahashi & Fox 2005.

(21) $\underline{[_{\text{CP1}}\ \textsc{Sue}_1\ \text{we will invite}\ x_1\ ]}$ and
$\underline{[_{\text{CP2}}\ \textsc{Martha}_2\ \text{we will}\ \langle_{\text{VP}}\ \sout{\text{invite}\ y_2}\ \rangle\ ]}$ also

i.) $[\![\ \underline{\text{CP2}}\ ]\!]^{\text{f}} = \left\{ \begin{array}{c} \text{that we will invite Martha, that we will invite Nancy,} \\ \text{that we will invite Sue, that we will invite Robert} \end{array} \right\}$
$= \{\ p : p =$ that we will invite $y \mid y \in Alt(\text{Martha})\ \}$

ii.) $[\![\ \underline{\text{CP1}}\ ]\!]^{\text{o}} =$ that we will invite Sue

iii.) $[\![\ \underline{\text{CP1}}\ ]\!]^{\text{o}} \in [\![\ \underline{\text{CP2}}\ ]\!]^{\text{f}}$; ellipsis is licensed

In the calculation above, the focus semantic value of CP2, shown in (21i), is a set of propositions that are computed by replacing the focus-marked constituent *Martha* with its salient alternatives. The ordinary semantic value of CP1 is a member of this set of alternative propositions. Consequently, it will be determined that elements of the form *that we will invite y* are redundant in the discourse and can be felicitously and grammatically targeted for ellipsis.

3.2 PRO as an indexed variable

Given only the tools above, it is not obvious that ellipsis should not also be licensed in the Control construction of interest in (18). As shown in (22), extending the PD to include the *wh*-element that rebinds the elided variable might lead one to expect that a suitable AC could again be recovered from the first conjunct.

(22) * Gary knows $\underline{[_{\text{CP1}}\ \textsc{who}_1\ \Delta\ \text{to invite}\ x_1\ ]}$ and also
Anne knows $\underline{[_{\text{CP2}}\ \textsc{who}_2\ \Delta\ \text{to}\ \langle_{\text{VP}}\ \sout{\text{invite}\ y_2}\ \rangle\ ]}$

i.) $[\![\ \underline{\text{CP2}}\ ]\!]^{\text{f}} = \{\ p : p =$ for Δ to invite $y \mid y \in Alt(\text{who})\ \}$

ii.) $[\![\ \underline{\text{CP1}}\ ]\!]^{\text{o}} = \{\ p : p =$ for Δ to invite $x \mid x \in Alt(\text{who})\ \}$

iii.) $[\![\ \underline{\text{CP1}}\ ]\!]^{\text{o}} \subseteq [\![\ \underline{\text{CP2}}\ ]\!]^{\text{f}}$; ellipsis is *incorrectly* licensed

This calculation for ellipsis-licensing supposes that both the ordinary semantic value of a question and its focus semantic value denote sets of possible answers that are computed by replacing a *wh*-element with its salient alternatives, such as Martha, Nancy, and others (Hamblin 1973, Rooth 1992b, Kotek 2019). As such, both the ordinary semantic value of CP1 and the focus semantic value of CP2 deliver the set of propositions shown in (22i) and (22ii). Because the CP1 is a subset of the CP2, it should be determined that elements of the form *for* Δ *to invite y* are redundant in the discourse and could be felicitously and grammaticality targeted for ellipsis.

The fact that we observe otherwise suggests that something in (22) is precluding the licensing of ellipsis. The claim, again, is that it is the infinitival subject position Δ that should be held responsible. By treating this position as the variable PRO, it is possible to assert that this element is a pronominal that is both free and contra-indexed within the PD defined by movement of *wh*-element. The desired consequence is that these elements will disrupt the licensing of ellipsis.

Consider the representation in (23) below, which includes PRO and a calculation of ellipsis-licensing. In response to the bound-variable created by extraction of the

wh-element from the embedded predicate, the PD must be extended to include its binder. Sufficiently extending the PD to CP2 now requires identifying an AC for a constituent that contains the bound-variable PRO_4, which is both free within this domain and contra-indexed with the parallel variable in CP1.

(23) * GARY$_3$ knows $[_{\text{CP1}}$ WHO$_1$ PRO$_3$ to invite x_1 $]$ and also
ANNE$_4$ knows $[_{\text{CP2}}$ WHO$_2$ PRO$_4$ to $\langle_{\text{VP}}$ ~~invite y_2~~ $\rangle$ $]$

i.) $[\![$ CP2 $]\!]^{\text{f}} = \{\ p : p =$ for PRO$_4$ to invite $y \mid y \in Alt(\text{who})\ \}$

ii.) $[\![$ CP1 $]\!]^{\text{o}} = \{\ p : p =$ for PRO$_3$ to invite $x \mid x \in Alt(\text{who})\ \}$

iii.) $[\![$ CP1 $]\!]^{\text{o}} \not\subseteq [\![$ CP2 $]\!]^{\text{f}}$; ellipsis is not licensed

Given any assignment function g, the focus semantic value of CP2 is not guaranteed to have as a member or a subset the ordinary semantic value of the structurally parallel CP1 in the first conjunct, nor any other constituent. It is correctly predicted, therefore, that ellipsis cannot be licensed in this representation.

In order to accommodate the retrieval of an AC and license ellipsis in this structure, the PD must be extended further to the include the binder for the newly rebound PRO_4. The relevant representation is provided in (24), where the PD has been extended to the VP2 and contains the A-trace of the subject *Anne*.[4]

(24) GARY$_3$ $[_{\text{VP1}}$ GARY$_3$ knows who$_1$ PRO$_3$ to invite x_1 $]$ and also
ANNE$_4$ does $\langle_{\text{VP2}}$ ~~ANNE$_4$ know who$_2$ PRO$_4$ to invite y_2~~ $\rangle$

i.) $[\![$ VP2 $]\!]^{\text{f}} = \{\ p : p = z$ knows who PRO$_z$ to invite $\mid z \in Alt(\text{Anne})\ \}$

ii.) $[\![$ VP1 $]\!]^{\text{o}} =$ Gary$_3$ knows who PRO$_3$ to invite

iii.) $[\![$ VP1 $]\!]^{\text{o}} \in [\![$ VP2 $]\!]^{\text{f}}$; ellipsis is licensed

The focus semantic value of this extended PD will be computed by replacing the focus-marked *Anne* in VP2 with its salient alternatives. Assuming with Kratzer (1991) that all co-indexed expressions, including PRO, are uniformly replaced in the computation of focus alternatives, this will produce the set of propositions in (24i). This set will have as one of its members the ordinary semantic value of the structurally parallel VP1 in the first conjunct. As such, ellipsis is now licensed and can grammaticality and felicitously target VP2.

To summarize the analysis in different terms, the PRO of an infinitival clause can produce rebinding configurations and feed MAXELIDE-effects in essentially the same way that we saw for bound sloppy pronouns in (6). This occurs in the context of an embedded question because, upon extending the PD to accommodate the $\overline{\text{A}}$-trace created by *wh*-movement, the bound variable PRO becomes included in additional calculations for licensing ellipsis. This in turn requires further extending the PD to include the binder for PRO, which requires identifying a larger AC for the purpose of licensing of ellipsis. Assuming that ellipsis targets the largest deletable

[4]The choice to define the PD by the A-trace of the binder for PRO in (24) reflects the observation in section 2 that A-traces do not induce the MAXELIDE-effects that we have associated with rebinding. We will see more on this point in section 4.2.

constituent within any possible PD (Takahashi & Fox 2005, though see Messick & Thoms 2016), there will be pressure to elide VP2 instead of the embedded VP.

4 Variables feed MAXELIDE-effects

With the results of the previous section in hand, it is possible to revise the schematic representation of MAXELIDE-effects in Control constructions from (16) to the following:

(25) MAXELIDE-*effects induced by PRO*
* ZP_n $[_{\text{VP}}$ ... *wh*$_1$ ... PRO_n ... $\langle_{\text{VP}}$ ~~... x_1 ...~~ $\rangle$ $]$

To the extent that ellipsis is disrupted in such configurations on account of rebinding the variable PRO, we should expect to find that other anaphoric variables, like pronouns, should similarly feed MAXELIDE-effects. In as far as this offers evidence for identifying the subject of Control complements as PRO, we should also expect to find that A-traces in comparable constructions do not feed MAXELIDE-effects. The following subsections investigate each of these predictions in turn.

4.1 Comparing PRO with pronouns

As noted, the proposed analysis predicts that minimally differing configurations with pronouns, indicated as "pro" in (26), should show a strong pressure for ellipsis of the root-level predicate over ellipsis of the embedded predicate.

(26) MAXELIDE-*effects induced by a pronoun*
* ZP_n $[_{\text{VP}}$ ... *wh*$_1$ ... pro_n ... $\langle_{\text{VP}}$ ~~... x_1 ...~~ $\rangle$ $]$

For a relevant test case, consider the example presented below in (27). On the sloppy interpretation under consideration, whereby the pronominal subject of the embedded clause is bound by the root-level subject, ellipsis of the embedded predicate is strongly dispreferred to ellipsis of the root-level predicate.

(27) BETH$_3$ asked who$_1$ she$_3$ should interview x_1 and then
a. WALTER$_4$ did $\langle_{\text{VP}}$ ~~ask who$_2$ he$_4$ should interview y_2~~ $\rangle$
b. * WALTER$_4$ asked who$_2$ he$_4$ should $\langle_{\text{VP}}$ ~~interview y_2~~ $\rangle$

These familiar MAXELIDE-effects are exactly what we should expect from the analysis that was presented above. As shown in (28), to license ellipsis within the embedded clause, it is necessary to identify an antecedent for a PD that contains the *wh*-element that binds the elided variable, namely CP2. Under these circumstances, it will once again be impossible to identify an AC that licenses ellipsis. On account of the contra-indexed pronominal subjects, the ordinary semantic value of CP1 is neither a member nor a subset of the focus semantic value of CP2.

(28) * BETH$_3$ asked $\underline{[_{\text{CP1}}\ \text{who}_1\ \text{she}_3\ \text{should interview}\ x_1\ ]}$ and then
WALTER$_4$ asked $\underline{[_{\text{CP2}}\ \text{who}_2\ \text{he}_4\ \text{should}\ \langle_{\text{VP}}$ ~~interview y_2~~ $\rangle\ ]}$

i.) $[\![$ CP2 $]\!]^{f} = \{\ p : p =$ that he$_4$ should interview $y \mid y \in Alt(\text{who})\ \}$
ii.) $[\![$ CP1 $]\!]^{o} = \{\ p : p =$ that she$_3$ should interview $x \mid x \in Alt(\text{who})\ \}$
iii.) $[\![$ CP1 $]\!]^{o} \not\subseteq [\![$ CP2 $]\!]^{f}$; ellipsis is not licensed.

As in the previous section, only the root-level VPs will satisfy the redundancy condition on ellipsis, resulting in ellipsis of the larger VP2; see (29).

(29) BETH$_3$ [$_{\text{VP1}}$ BETH$_3$ asked who$_1$ she$_3$ should interview x_1] and then
WALTER$_4$ did $\langle_{\text{VP2}}$ ~~WALTER$_4$ ask who$_2$ he$_4$ should interview y_2~~ $\rangle$

i.) $[\![$ VP2 $]\!]^{f} = \{\ p : p = z$ asked who z should interview
$\mid z \in Alt(\text{Walter})\ \}$
ii.) $[\![$ VP1 $]\!]^{o} =$ Beth asked who Beth should interview
iii.) $[\![$ VP1 $]\!]^{o} \in [\![$ VP2 $]\!]^{f}$; ellipsis is licensed.

As a purported instance of the kind of MAXELIDE-effects identified above, we should expect that the dispreference for eliding the embedded predicate can be ameliorated. In fact, there seems to be an intuitive impulse to repair (28) with a focus pitch accent placed on the embedded pronouns. As shown below, ellipsis of the embedded predicate becomes acceptable under these circumstances, as per Schuyler's (2001) generalization in (13).

(30) BETH$_3$ [$_{\text{VP1}}$ BETH$_3$ asked who$_1$ SHE$_3$ should interview x_1] and then
WALTER$_4$ [$_{\text{VP2}}$ WALTER$_4$ asked who$_2$ **HE$_4$** should $\langle_{\text{VP}}$ ~~interview y_2~~ $\rangle$]
$[\![$ VP1 $]\!]^{o} \in [\![$ VP2 $]\!]^{f}$; ellipsis is licensed

We also expect that the observed MAXELIDE-effect will be remedied by eliminating the *wh*-trace in the embedded predicate. Without the relevant variable-binding relationship, the embedded VPs will satisfy the redundancy condition on ellipsis. This expectation, too, is borne out:[5]

(31) BETH$_3$ asked if SHE$_3$ should [$_{\text{VP1}}$ SHE$_3$ interview someone] and then
WALTER$_4$ asked if HE$_4$ should $\langle_{\text{VP2}}$ HE$_4$ ~~interview someone~~ $\rangle$
$[\![$ VP1 $]\!]^{o} \in [\![$ VP2 $]\!]^{f}$; ellipsis is licensed

The proposed analysis in fact makes a more general prediction regarding the possibility of ellipsis within an embedded clause. As we have seen, the presence of a bound variable subject in an embedded question will preclude that CP constituent from identifying a suitable AC. Thus, it should not be possible to license ellipsis of any constituent of the embedded clause. This includes the embedded TP in (32), meaning we correctly predict that Sluicing is also not possible in the infinitival embedded questions that are of interest to our investigation.

[5]There appears to still be an impulse to place focus on the elided pronouns in (31). This reflects the fact that ellipsis-licensing requires a PD to contrast appropriately with its AC (Rooth 1992a, Griffiths 2019, Stockwell 2020). We will return to this issue in section 5 where we will also consider data in which the embedded clauses contain free, as opposed to bound, pronominals.

(32) * GARY$_3$ knows [$_{CP1}$ who$_1$ PRO$_3$ to invite x_1] and also
ANNE$_4$ knows [$_{CP2}$ who$_2$ ⟨$_{TP}$ ~~PRO$_4$ to invite y_2~~ ⟩]
⟦ CP1 ⟧^{o} ⊈ ⟦ CP2 ⟧^{f}; ellipsis is not licensed

The same is correctly expected of minimally differing constructions that contain a bound pronoun, which is demonstrated by the example in (33) below.

(33) * BETH$_3$ asked [$_{CP1}$ who$_1$ she$_3$ should interview x_1] and then
WALTER$_4$ asked [$_{CP2}$ who$_2$ ⟨$_{TP}$ ~~he$_4$ should interview y_2~~ ⟩]
⟦ CP1 ⟧^{o} ⊈ ⟦ CP2 ⟧^{f}; ellipsis is not licensed

In sum, the analysis offered here not only accounts for the preference for ellipsis of the root-level predicate over the embedded predicate, but it also offers an account of the dispreference for eliding any constituent smaller than the root-level predicate. Moreover, we have seen that the analysis correctly predicts that these effects appear in the context of both PRO and bound pronouns.

4.2 Considerations against an A-movement analysis

The next step of the argument would ideally demonstrate that uncontroversial A-traces in minimally differing configurations like (34) do not give rise to MAX-ELIDE-effects. This would provide strong evidence for the claim that we should distinguish the null subject of Control constructions from A-traces.

(34) *No* MAXELIDE*-effects induced by an A-trace*
✓ ZP$_n$ [$_{VP}$ … *wh*$_1$ … t_n … ⟨$_{VP}$ ~~… x_1 …~~ ⟩]

Unfortunately, it seems that the limitations of English might prevent us from conducting this experiment in the way that it has been designed. As the examples in (35) demonstrate, the clausal complement of a Raising predicate like *appear* does not tolerate $\overline{\text{A}}$-movement to a position in its left periphery. This is true for both *wh*-movement (35b) and topicalization (35c).

(35) a. Dave$_1$ appears [t_1 to understand the abstract]
A

b. * Dave$_1$ appears [what$_2$ t_1 to understand x_2]
A $\overline{\text{A}}$

c. * Dave$_1$ appears [the abstract$_2$ t_1 to understand x_2]
A $\overline{\text{A}}$

In terms of the analysis, the relevant instance of $\overline{\text{A}}$-movement that is expected to extend the PD to include the A-trace and create a potential rebinding environment is independently unavailable. Because the source structures are ungrammatical, it is not possible to confidently draw any conclusions on the basis of the ungrammaticality of their ellipsis counterparts:

(36) * DAVE$_3$ appears what$_1$ t_3 to understand x_1 and

a. JANA$_4$ does $\langle_{\text{VP}}$ ~~appear what$_2$ t_4 to understand y_2~~ $\rangle$ also

b. JANA$_4$ appears what$_2$ t_4 to $\langle_{\text{VP}}$ ~~understand y_2~~ $\rangle$ also

The desiderata for running this experiment, therefore, require that we identify a language with the following properties:

(37) (i) There is a process of VP-ellipsis or modal-complement ellipsis,
(ii) there are predicates that permit (hyper)raising from embedded complement clauses, and
(iii) those same embedded complement clauses permit $\overline{\text{A}}$-movement (scrambling, topicalization, *wh*-movement) to their edge.

It must be left to future work to identify and investigate a relevant language.[6]

Having said that, one could rightly contend that the door remains open for the possibility that Δ in Control constructions is an A-trace. One might even propose, as shown in (38), that the non-identity of A-traces in Control structures can be held responsible for the inability to license ellipsis in the embedded clause, just as we have argued for PRO and pronouns.

(38) * **GARY$_3$** knows [$_{\text{CP1}}$ who$_1$ **GARY$_3$** to invite x_1] and also
ANNE$_4$ knows [$_{\text{CP2}}$ who$_2$ **ANNE$_4$** to $\langle_{\text{VP}}$ ~~invite y_2~~ $\rangle$]
$[\![$ CP1 $]\!]^{\text{o}} \not\subseteq [\![$ CP2 $]\!]^{\text{f}}$; ellipsis hypothesized to not be licensed

There is good reason, however, to suspect that (38) does not reflect a possible account of the relevant contrast. First, we have already seen that A-traces do not induce MAXELIDE-effects; recall the example from (8). The example in (39) similarly shows that the presence of A-traces in an embedded clause does not disrupt ellipsis of the embedded predicate, nor does it create pressure to elide a larger constituent in the way that we have observed with PRO and pronouns.

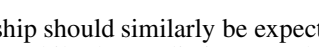
(39) DAVE$_1$ [$_{\text{VP}}$ t_1 appears t_1 to [$_{\text{VP}}$ t_1 understand the abstract]] and

a. JANA$_2$ does $\langle_{\text{VP}}$ ~~t_2 appear t_2 to [$_{\text{VP}}$ t_2 understand the abstract]~~ $\rangle$ also

b. ? JANA$_2$ [$_{\text{VP}}$ t_2 appears t_2 to $\langle_{\text{VP}}$ ~~t_2 understand the abstract~~ $\rangle$] also

[6] In light of the claim that pronominal binding generates rebinding configurations, there is an imaginable alternative to the experiments that we are performing in this section. One could compare PRO and A-traces in environments like (i) where pronominal binding, as opposed to $\overline{\text{A}}$-movement, crosses the embedded subject position.

(i) *Experimental environment for detecting* MAXELIDE*-effects in binding configurations*
ZP$_n$ [$_{\text{VP}}$ … XP$_1$ … Δ_n … $\langle_{\text{VP}}$ ~~… pro$_1$ …~~ $\rangle$]



This binding relationship should similarly be expected to extend the PD for ellipsis-licensing to the point of including Δ. While the predictions are the same as those laid out in the paper, I believe that this experiment also suffers from several confounds that cannot be properly addressed on this occasion. Therefore, this experiment, too, must be left to future work.

Moreover, it would be undesirable to claim that non-identical A-positions disrupt the licensing of ellipsis. If this were the case, we would incorrectly expect that the example in (40) would be ungrammatical; the non-identical links in the A-chains here would presumably disrupt ellipsis-licensing in the extended PD on this occasion as well.

(40) It is known $[_{\text{CP1}}$ who$_1$ **GARY$_3$** should $[_{\text{VP}}$ GARY$_3$ invite x_1 $]$ $]$ and
It is known $[_{\text{CP2}}$ who$_2$ **ANNE$_4$** should $\langle_{\text{VP}}$ ~~ANNE$_4$ invite y_2~~ $\rangle$ $]$
$[\![$ CP1 $]\!]^{\text{o}} \subseteq [\![$ CP2 $]\!]^{\text{f}}$; ellipsis is licensed

In fact, if non-identical A-positions disrupted the licensing of ellipsis, then any instance of VP-ellipsis, including the familiar MAXELIDE-compliant example repeated in (41), would be expected to be ungrammatical given the standard assumption that subjects A-move out of the predicate.

(41) **GARY$_3$** $[_{\text{VP1}}$ GARY$_3$ knows who$_1$ PRO$_3$ to invite x_1 $]$ and also
ANNE$_4$ does $\langle_{\text{VP2}}$ ~~ANNE$_4$ know who$_2$ PRO$_4$ to invite y_2~~ $\rangle$
$[\![$ VP1 $]\!]^{\text{o}} \in [\![$ VP2 $]\!]^{\text{f}}$; ellipsis is licensed

Thus, it does not seem to be productive to analyze MAXELIDE-effects in Control constructions under an analysis that treats the embedded subject position as an A-trace. In fact, the following discussion of Sag's (1976) original contrast suggests that it is the non-identity of A-positions that facilitates the licensing of ellipsis.

5 MAXELIDE-effects in Non-Obligatory Control

The analysis that has been presented up to this point has given special attention to environments with Obligatory Control (OC). From the perspective of the PRO Theory of Control, these represent cases in which the embedded subject behaves most like a bound variable (see Landau 2013, 2015). From the perspective of the Movement Theory of Control, these cases offer the strongest evidence for A-movement (see Hornstein 2001, Boeckx *et al.* 2010). As such, OC environments represent the fairest testing-ground for comparing the two theories.

The original data regarding MAXELIDE-effects in Control structures, however, arise in the context of Non-Obligatory Control (NOC). These data, which come from Sag 1976, 117–121, where the observation is credited to Lakoff (1968), are presented in a slightly modified version in (42).[7]

(42) THE STEAK$_1$ is ready $[_{\text{CP}}$ Op_1 PRO$_{arb}$ to eat x_1 $]$ and
a. THE TOFU$_2$ is $\langle_{\text{AP}}$ ~~ready $[_{\text{CP}}$ Op_2 PRO$_{arb}$ to eat y_2 $]$~~ $\rangle$ also
b. * THE TOFU$_2$ is ready $[_{\text{CP}}$ Op_2 PRO$_{arb}$ to $\langle_{\text{VP}}$ ~~eat y_2~~ $\rangle$ $]$ also

Notably, the embedded subject positions are not controlled or bound by an argument of the root-level clause. As indicated by the use of PRO$_{arb}$, they instead receive

[7] The data in (42) are in fact part of a robust pattern in which MAXELIDE-effects arise in both complement and adjunct infinitival clauses that display various types of Control; see Overfelt 2025.

an arbitrary interpretation as some unspecified individual or group. While PRO in these constructions might be controlled by some possibly implicit perspective holder, the example in (43a) demonstrates that an arbitrary interpretation remains available even when such an entity is explicitly named. The example in (43b) shows that PRO can even be controlled by an argument of a super-ordinate clause or a non-c-commanding expression, both of which are also properties of NOC.

(43) a. (According to Lou_2) the steak_1 is ready $\text{PRO}_{2/arb}$ to eat x_1.
b. Lou_2's mom_3 realized that the steak_1 is ready $\text{PRO}_{2/3/arb}$ to eat x_1.

As an instance of NOC, the embedded subject PRO_{arb} is not plausibly treated as a bound variable. This means that we face the same problem that we initially feared in section 3.2. Specifically, on the interpretation that is presented in (44) below, the redundancy condition on ellipsis is satisfied and ellipsis within the embedded clause should be licensed, contrary to fact.

(44) * THE STEAK$_1$ is ready $[_{\text{CP1}}\ Op_1\ \text{PRO}_{arb}$ to eat $x_1\ ]$ and
THE TOFU$_2$ is ready $[_{\text{CP2}}\ Op_2\ \text{PRO}_{arb}$ to $\langle_{\text{VP}}$ ~~eat y_2~~ $\rangle\ ]$ also
$[\![\ \text{CP1}\ ]\!]^{\text{o}} \subseteq [\![\ \text{CP2}\ ]\!]^{\text{f}}$; ellipsis is *incorrectly* licensed?

The solution that we adopted for OC contexts in section 3.2 was to assert that the bound PRO subjects were contra-indexed and, thereby, disrupted ellipsis licensing. Applying the same solution to the current NOC construction would be undesirable, as doing so would fail to generate the intended arbitrary interpretation. The possible worry, then, is that these data might undermine the analysis of MAXELIDE-effects in Control constructions under the PRO Theory of Control.

To the contrary, these facts are entirely consistent with the PRO Theory of Control. They are also consistent with the proposed analysis once it is supplemented with the observations by Rooth (1992a), Griffiths (2019), and Stockwell (2020) that ellipsis licensing is also subject to a requirement that an antecedent appropriately contrasts with the constituent targeted for ellipsis. This contrast condition can be enforced alongside our familiar redundancy condition in the way shown in (45).

(45) *Conditions on Ellipsis Licensing*
Ellipsis within some Parallelism Domain (PD) is permitted only if there is an Antecedent Constituent (AC) such that:
i.) $[\![\ \text{AC}\ ]\!]^{\text{o}} \neq [\![\ \text{PD}\ ]\!]^{\text{o}}$ and (contrast)
ii.) $[\![\ \text{AC}\ ]\!]^{\text{o}} \in [\![\ \text{PD}\ ]\!]^{\text{f}}$ or $[\![\ \text{AC}\ ]\!]^{\text{o}} \subseteq [\![\ \text{PD}\ ]\!]^{\text{f}}$ (redundancy)

The new contrast condition requires that the PD and an identified AC have distinct ordinary semantic values. Importantly, it is on this measure that ellipsis licensing in (44) fails; the ordinary semantic value of CP1 is equivalent to the ordinary semantic value of CP2 ($[\![\ \text{CP1}\ ]\!]^{\text{o}} = [\![\ \text{CP2}\ ]\!]^{\text{o}}$). It is on the same measure that we can distinguish the grammatical instance of root-level VP-ellipsis in (46):

(46) THE STEAK$_1$ is $[_{\text{AP1}}$ THE STEAK$_1$ ready Op_1 PRO_{arb} to eat $x_1\ ]$ and
THE TOFU$_2$ is $\langle_{\text{AP2}}$ ~~THE TOFU$_2$ ready Op_2 PRO_{arb} to eat y_2~~ $\rangle$ also
$[\![\ \text{AP1}\ ]\!]^{\text{o}} \neq [\![\ \text{AP2}\ ]\!]^{\text{o}}$ and $[\![\ \text{AP1}\ ]\!]^{\text{o}} \in [\![\ \text{AP2}\ ]\!]^{\text{f}}$; ellipsis is licensed

Notably, it is the contrast between the A-traces in each conjunct, like in (41), which ensures that the ordinary semantic values of AP1 and and AP2 are distinct. Because the ordinary semantic value of AP1 is also a member of the focus semantic value of AP2, ellipsis of AP2 is licensed.

This contrast condition on ellipsis-licensing was an implicit part of the analysis presented in sections 3 and 4. For instance, in the key data repeated below from (23) and (24), the contrast condition is satisfied on account of the contra-indexed PROs and A-traces in the hypothesized representations. It is instead a failure to satisfy the redundancy condition that precludes ellipsis of the embedded clause.

(23) * GARY$_3$ knows $[_{\text{CP1}}$ WHO$_1$ PRO$_3$ to invite x_1 $]$ and also
ANNE$_4$ knows $[_{\text{CP2}}$ WHO$_2$ PRO$_4$ to $\langle_{\text{VP}}$ ~~invite y_2~~ $\rangle$ $]$
$[\![$ CP1 $]\!]^{o} \neq [\![$ CP2 $]\!]^{o}$ and $[\![$ CP1 $]\!]^{o} \not\subseteq [\![$ CP2 $]\!]^{f}$; ellipsis is not licensed

(24) GARY$_3$ $[_{\text{VP1}}$ GARY$_3$ knows who$_1$ PRO$_3$ to invite x_1 $]$ and also
ANNE$_4$ does $\langle_{\text{VP2}}$ ~~ANNE$_4$ know who$_2$ PRO$_4$ to invite y_2~~ $\rangle$
$[\![$ VP1 $]\!]^{o} \neq [\![$ VP2 $]\!]^{o}$ and $[\![$ VP1 $]\!]^{o} \in [\![$ VP2 $]\!]^{f}$; ellipsis is licensed

Thus, while the postulation of PRO contributes to the explanation of MAXELIDE-effects in both OC and NOC configurations, the analysis is based on a failure to satisfy one of two separate, but necessary, conditions on licensing ellipsis.

Finally, we can appreciate once more that minimally differing configurations with pronouns again show the same behaviors. When the embedded clauses contain free, non-contrastive pronominal subjects, there is a strong preference for ellipsis of the root-level predicate over ellipsis of the embedded predicate.

(47) * BETH$_3$ asked $[_{\text{CP1}}$ who$_1$ **they**$_{arb}$ should interview x_1 $]$ and then
WALTER$_4$ asked $[_{\text{CP2}}$ who$_2$ **they**$_{arb}$ should $\langle_{\text{VP}}$ ~~interview y_2~~ $\rangle$ $]$
$[\![$ CP1 $]\!]^{o} = [\![$ CP2 $]\!]^{o}$ and $[\![$ CP1 $]\!]^{o} \subseteq [\![$ CP2 $]\!]^{f}$; ellipsis is not licensed

(48) BETH$_3$ $[_{\text{VP1}}$ BETH$_3$ asked who$_1$ **they**$_{arb}$ should interview x_1 $]$ and then
WALTER$_4$ did $\langle_{\text{VP2}}$ ~~WALTER$_4$ ask who$_2$ **they**$_{arb}$ should interview y_2~~ $\rangle$
$[\![$ VP1 $]\!]^{o} \neq [\![$ VP2 $]\!]^{o}$ and $[\![$ VP1 $]\!]^{o} \in [\![$ VP2 $]\!]^{f}$; ellipsis is licensed

Like the examples with PRO$_{arb}$, the ungrammaticality of eliding the embedded predicate in (47) reflects a failure to satisfy the contrast condition on ellipsis. The ability to elide the root-level VP in (48) is, yet again, facilitated by the contrast between the A-traces in VP1 and VP2. In sum, the status of the elided subject as a variable—either PRO or a pronoun—again offers an explanation for MAXELIDE-effects in both Control and non-Control structures.

6 Conclusion

This paper has argued that the MAXELIDE-effects observed in English Control constructions reflect the status of the embedded subject position as the variable argument PRO. When PRO acts as a bound variable in Obligatory Control contexts, it gives rise to rebinding configurations that disrupt ellipsis of smaller constituents

and favors ellipsis of root-level predicates. I also proposed that unbound PRO in Non-Obligatory Control constructions can disrupt ellipsis licensing by failing to contribute to a contrast condition on the licensing of ellipsis.

In both cases, we saw that these behaviors mirror those that can be observed with embedded overt pronominal subjects. These facts have collectively been interpreted as support for the PRO Theory of Control. I have also argued that these facts speak against a Movement Theory of Control. While it remains for future research to demonstrate that A-traces fail to create re-binding configurations in comparable structures, we saw several reasons for believing that analyses making appeal to A-traces would not offer a coherent theory of MAXELIDE-effects.

References

Boeckx, C., N. Hornstein, & J. Nunes. 2010. *Control as Movement*. Cambridge, UK: Cambridge University Press.

Chomsky, N. 1981. *Lectures on Government and Binding*. Dordrecht, The Netherlands: Foris.

Davies, W. D., & S. Dubinsky. 2004. *The Grammar of Raising and Control: A Course in Syntactic Argumentation*. Malden, MA: Blackwell.

Evans, G. 1980. Pronouns. *Linguistic Inquiry* 11. 337–362.

Grano, T. 2015. *Control and Restructuring*. Oxford, UK: Oxford University Press.

Green, J. J. 2019. A movement theory of adjunct control. *Glossa* 4(1): 87. 1–34.

Griffiths, J. 2019. Beyond MaxElide: An investigation of Ā-movement from elided phrases. *Linguistic Inquiry* 50. 571–607.

Hamblin, C. L. 1973. Questions in Montague English. *Foundations of Language* 10. 41–53.

Hartman, J. 2011. The semantic uniformity of traces: Evidence from ellipsis parallelism. *Linguistic Inquiry* 42. 367–388.

Hornstein, N. 2001. *Move! A Minimalist Theory of Construal*. Malden, MA: Blackwell.

Jacobson, P. 1992. Antecedent contained deletion in a variable-free semantics. In *Proceedings of SALT II*, ed. by C. Barker & D. Dowty, 193–214, Columbus, OH. The Ohio State University.

Kotek, H. 2019. *Composing Questions*. Cambridge, MA: The MIT Press.

Kratzer, A. 1991. The representation of focus. In *Semantics: An International Handbook of Contemporary Research*, ed. by A. von Stechow & D. Wunderlich, 825–834. Berlin: Walter de Gruyter.

Lakoff, G. 1968. *Deep and Surface Grammar*. Bloomington, IN: Indiana University Linguistics Club.

Landau, I. 2000. *Elements of Control: Structure and meaning in infinitival constructions*. Dordrecht: Kluwer.

Landau, I. 2013. *Control in Generative Grammar*. Cambridge, UK: Cambridge University Press.

Landau, I. 2015. *A Two-Tiered Theory of Control*. Cambridge, MA: The MIT Press.

Lobeck, A. 1995. *Ellipsis: Functional heads, licensing, and identification*. Oxford, UK: Oxford University Press.

Manzini, M. R. 1983. On Control and Control Theory. *Linguistic Inquiry* 14. 421–446.

Merchant, J. 2008. Variable island repair under ellipsis. In *Topics in Ellipsis*, ed. by K. Johnson, 132–153. Cambridge, UK: Cambridge University Press.

Messick, T., & G. Thoms. 2016. Ellipsis, economy, and the (non)uniformity of traces. *Linguistic Inquiry* 47. 306–332.

Overfelt, J. 2020. A remark on the economics of Quantifier Raising. *Linguistic Inquiry* 51. 366–394.

Overfelt, J. 2025. PRO as an anaphoric variable: Rebinding and MAXELIDE-effects. Handout presented at the 61st Meeting of the Chicago Linguistics Society, Chicago, IL. May 9. Available at: https://joverfelt.net/.

Rooth, M. 1992a. Ellipsis redundancy and reduction redundancy. In *Proceedings of the Stuttgart Ellipsis Workshop*, ed. by S. Berman & A. Hestvik, 1–26, Stuttgart. Universitäten Stuttgart und Tübingen in Kooperation mit der IBM Deutschland.
Rooth, M. 1992b. A theory of focus interpretation. *Natural Language Semantics* 1. 75–116.
Sag, I. 1976. *Deletion and logical form*. Massachusetts Institute of Technology dissertation.
Schuyler, T. 2001. Wh-movement out of the site of VP ellipsis. In *Syntax and Semantics at Santa Cruz*, ed. by S. Mac Bhloscaidh, volume III, 1–20. Santa Cruz, CA: Linguistics Research Center.
Stockwell, R. 2020. *Contrast and Verb Phrase Ellipsis: Triviality, Symmetry, and Competition*. Los Angeles, CA: UCLA dissertation.
Takahashi, S., & D. Fox. 2005. MaxElide and the re-binding problem. In *Proceedings of SALT XV*, ed. by E. Georgala & J. Howell, 223–240, Cornell University, Ithaca, NY. CLC Publications.
Williams, E. 1980. Predication. *Linguistic Inquiry* 11. 203–238.