Licensing and Interpretation: A comprehensive theory of sluicing

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NELS 47
October 14-16, 2016

1 Introduction

Sluicing is an ellipsis phenomenon in which the TP of an interrogative is elided, stranding an overt wh-phrase.

(1) Bernie knows that [someone voted for Trump]A, but he doesn’t know who <voted for Trump>E.

Since its original observation in Ross (1969), most researchers have agreed that ellipsis in sluicing constructions is licensed via an identity condition that holds between some antecedent material (A) and the elided (or missing) material (E). The exact nature of this identity condition has characterized the force of the majority of the work on the topic since.

1.1 The e-GIVENness Account

In his seminal book, Merchant (2001) observes that a strict syntactic identity condition between antecedent and ellipsis sites, as proposed in Ross (1969), is too strict to capture the entire range of possible data.

For example, the antecedent and ellipsis sites in (2) below contain a finiteness mismatch and therefore fail a strict syntactic identity condition.

(2) FINITENESS MISMATCHES: [Sally cooks every night]A. She learned how <to cook>E from her father.

'This project was borne out of the authors’ independent and collaborative work on the Santa Cruz Ellipsis Project. Thank you to Pranav Anand, Dan Hardt, and Jim McCloskey for their invaluable support and guidance on this project. Thank you also to Sandra Chung, Bill Ladusaw, Jason Merchant, and audiences at Santa Cruz, UC Berkeley, and SUB 21. Finally, thank you to the undergraduate annotators of the Santa Cruz Ellipsis Project for their work in classifying the original corpus data. This project has in part been supported by a UC Santa Cruz Institute of Humanities Research cluster grant to the Santa Cruz Ellipsis Consortium and by the National Science Foundation Grant No. 1451819: The Implicit Content of Sluicing.
Based on the possibility of syntactic mismatches between antecedent and ellipsis sites in sluicing constructions, Merchant proposes a purely semantic identity condition in terms of mutual entailment between the sluicing antecedent and ellipsis sites, called e-GIVENness.

(3) a. e-GIVENness:
An expression E counts as e-GIVEN iff E has a salient antecedent A and, modulo ∃ type-shifting:
i) A entails F-clo(E), and
ii) E entails F-clo(A)

b. Focus condition on TP-ellipsis:
A TP α can be deleted only if α is e-GIVEN

1.2 Challenges to e-GIVENness

Subsequent work has raised empirical challenges for the e-GIVENness condition on sluicing, suggesting that it is both too weak and too strong.

Mutual Entailment (alone) is Too Weak

One line of work argues that semantic identity can’t be the full story about the grammaticality of sluices. Merchant (2005/2013b) and Chung (2005/2013) argue that there are substantive syntactic restrictions on the grammaticality of sluicing. For instance, the impossibility of active/passive mismatches between antecedent and ellipsis sites:

(4) ACTIVE/PASSIVE MISMATCHES:
*[John was murdered]A, but I don’t know who <murdered him>E.

Mutual Entailment is Too Strong

Another line of work (Kroll 2016a/2016b, Rudin 2016) argues that e-GIVENness is too strong a condition on sluicing. Specifically, it rules out mismatches in modality and polarity of the kind robustly attested in recent corpus work (q.v. §2):

(5) POLARITY MISMATCHES:
Context: Students were given the option to do an extra credit problem, but were required to mark which problem they did on a spreadsheet. There is no mark next to John’s name. The TA says:
Either [Johnj didn’t do an extra credit problem]A, or hej didn’t mark which onei <hej did tr>E.

Example (5) contains a mismatch in polarity between its antecedent and elided content, and no relevant semantic identity condition holds between the two.¹

¹Jason Merchant (pc) points out to us that these data run counter to the claim made in Merchant (2013a, pg. 15), which claims that negation present in the antecedent of a sluicing construction requires a corresponding negation present in the ellipsis site.
1.3 The Current Landscape

The current landscape of sluicing theories falls into roughly two camps: semantics+ theories and hybrid theories.²

(I) Semantics+
Predominantly semantic theories with supplemental syntactic stipulations.
(e.g. Barker 2013, whose scopability analysis stipulates a special feature to capture Case-matching; and AnderBois 2014, who follows Merchant 2007 in adopting the constraint No New Morphemes, which requires that E not include any morphemes that aren’t in A.³)

(II) Hybrid
Hybrid theories in which there are both substantive syntactic and substantive semantic conditions on the grammaticality of sluicing.⁴
(e.g. Chung 2013, Merchant 2013b)

It is in relation to this landscape that we situate our proposal.

1.4 Goal of the Current Project

The goal of the current project is to advocate for a dual-perspective approach to the acceptability of sluicing.

(6) The Dual-Perspective Approach
There is both a grammar and a pragmatics of sluicing. The full range of data is problematic from either perspective in isolation, but becomes tractable when both are considered simultaneously.

Assumptions of the Account

▷ There is a pragmatics of ellipsis, namely that cooperative speakers only elide material under conditions in which their interlocutors can recover their intended interpretation.
▷ This pragmatics is conceptually necessary and conceptually independent of the grammaticality of elliptical constructions.

²Certain theories, such as Ginzburg & Sag (2000) and Barros (2014), fall outside the scope of this division in relying on syntactic as well as pragmatic constraints. As the syntactic constraints in these two theories can also be argued to be theoretically stipulative, we believe our current objections to the discussed theories here can be extended to these theories as well. Note, though, that the pragmatic aspect of the current talk shares much in spirit with these proposals.
³Note that example (5) here shows this generalization to be empirically inaccurate.
⁴Hybrid syntactic/semantic theories of ellipsis have their roots in analyses of Verb Phrase Ellipsis proposed by Rooth (1992), Tancredi (1992) and Heim (1997).
Goals of the Current Talk

i Present a purely syntactic identity condition that allows all mismatches that haven’t been shown to be syntactically impossible.

ii Present a pragmatic condition that restricts the set of such mismatches that are available in any given context.

More detailed accounts of the syntactic identity condition and pragmatic interpretation condition proposed in this talk can be found in Rudin (2016) and Kroll (2016a/b), respectively.

Structure of the Talk:
§2 The Empirical Terrain: We present the range of mismatches to be accounted for
§3 The Syntax of Sluicing: A syntactic identity condition on sluicing
§4 The Pragmatics of Sluicing: A pragmatic interpretation condition of sluicing
§5 Conclusion: Conclusion and final thoughts

2 The empirical terrain

A methodological prologue: The novel corpus examples given here were identified by undergraduate annotators trained by the Santa Cruz Ellipsis Project and were verified by graduate students and faculty working on the Ellipsis Project. Many examples presented have more than one possible interpretation for the pre-sluice (i.e. the un-elided form of the example). The claim is not that the pre-sluices provided here are the only interpretation available for each example, but merely that they are felicitous, freely available interpretations.

As shown in examples (2), (4), and (5), the test of an adequate identity condition on sluicing is to be flexible enough to allow grammatical mismatches between the antecedent and ellipsis sites. The categories of mismatches observed in the literature are given below.

2.1 Possible Sluicing Mismatches

(7) SPRouting (Chung et al. 1995/2011, Merchant 2001, AnderBois 2014): [John called me]_A, but I don’t know with whose phone <he called me>_E.

(8) Finiteness mismatches (Merchant 2001 pg. 22, 2005): The baseball player went public with his desire [to be traded]_A. He doesn’t care where <he is traded>_E.

(9) Tense mismatches (Merchant 2005): [Your plant is alive]_A, but you can never be sure for how long <it will be alive>_E.
(10) **GERUND ANTECEDENTS (Merchant 2001/2016):**

\[
\text{[Gardening]}_A \text{ is very fun once you learn how } \langle \text{to garden} \rangle_E.
\]

(11) **ILLOCUTIONARY FORCE MISMATCHES (Merchant 2001):**

\[
\text{[Always save a little from each paycheck]}_A. \text{ Once you’re older, you’ll understand why } \langle \text{you should always save a little from each paycheck} \rangle_E.
\]

(12) **MODALITY MISMATCHES (Rudin 2016):**

a. Although Sally sees that [she must defeat her competitors,]$_A$, she relies on Susie to tell her how \langle \text{to defeat them} \rangle_E.

b. This is a problem, that [physics must solve]$_A$, but for a long time it wasn’t clear how \langle \text{physics could solve it} \rangle_E.

(13) **POLARITY MISMATCHES (Kroll 2016a/b):**

a. I don’t think that Trump will comply with the debate requirements, but I don’t know why \langle \text{he won’t comply with the debate requirements} \rangle_E.

b. Context: On the day the Japanese invaded Pearl Harbor, Hummel was rounded up and locked in an internment camp along with about 2,000 other foreigners… “I don’t know why I wasn’t scared”$_E$, but [I really cannot remember being scared]$_A$,” Hummel said. “It all seemed like great fun.”

However, not all mismatches are allowed.

### 2.2 Impossible Sluicing Mismatches

(14) **ACTIVE/PASSIVE MISMATCHES (Merchant 2013b):**

\*[[John was murdered]$_A$, but I don’t know who \langle \text{murdered him} \rangle_E.

(15) **CAUSATIVE/INCHOATIVE MISMATCHES (Merchant 2005):**

\*[[The jug broke]$_A$, but I don’t know who \langle \text{broke the jug} \rangle_E.

(16) **DOUBLE OBJECT/OBLIQUE OBJECT MISMATCHES (Levin 2003, Merchant 2005):**

a. \*[[They embroidered something with peace signs]$_A$, but I don’t know on what \langle \text{they embroidered peace signs} \rangle_E.

b. \*[[They embroidered something on their jackets]$_A$, but I don’t know with what \langle \text{they embroidered their jackets} \rangle_E.

A complete theory of the identity condition on sluicing must be permissive enough to allow the grammatical mismatches in (7)-(13), while being rigid enough to rule out the ungrammatical mismatches in examples (14)-(16).

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5The modality and polarity mismatch data comes from collaborative work on the Santa Cruz Ellipsis Project http://ohlone.ucsc.edu/SCEC/.
3 The syntax of sluicing (précis of Rudin 2016)

Any condition requiring some form of syntactic identity between antecedent and ellipsis site must permit the good mismatches from the previous section. Because some mismatches are possible, total syntactic identity is not feasible.

▷ An alternative to total identity: evaluate syntactic identity head by head, applying the requirement of syntactic identity to a (potentially proper) subset of the heads contained within the elided constituent.6

▷ Intuition (prompted by the grammaticality of sprouting): syntactic identity conditions on sluicing should ignore material that doesn’t go unpronounced by virtue of the ellipsis—i.e., the syntactic identity condition should ignore stuff that has ‘moved out’ of the ellipsis site and escaped deletion thereby.

▷ Implementation: a head-based syntactic identity for sluicing that ignores traces/lower copies.

(17) SYNTACTIC IDENTITY CONDITION (to be revised):
Given a prospective ellipsis site \( \alpha \) and its antecedent \( \beta \), ellipsis of any head \( h \in \alpha \) is licit only if either \( h \) is a non-maximal element in a movement-dependency chain or \( h \) has a STRUCTURE-MATCHING CORRELATE \( n \in \beta \).

Supplementary definitions:

(18) STRUCTURE-MATCHING:
A node \( n \) STRUCTURE-MATCHES a head \( h \) iff \( h \) and \( n \) are dominated by an identical sequence of immediately dominating notes (within a given domain).
(Where a ‘sequence of immediately dominating notes’ above a node \( n \) is the label of \( n \)'s mother, followed by the label of \( n \)'s mother’s mother, and so on.)

(19) CORRELATE:
A node \( n \) can be a correlate of a head \( h \) iff the content of \( n \) is either lexically or referentially identical to \( h \).7

This will allow for sprouting, while ruling out the impossible mismatches from §2. For instance, consider the argument structure mismatch in (16b), repeated here:

(20) *[They embroidered something on their jackets]_A, but I don’t know with what <they embroidered their jackets>_E.

In this case, the deleted heads in the DP their jackets in E do have correlates in A, but those correlates are not structure-matching: the antecedent DP is inside a PP, but the elided DP is not.

6For concreteness, we can consider a ‘head’ to be a syntactic terminal node post-vocabulary insertion.
7See appendix A for more details on correlates.
This first pass at a condition is too strong: it doesn’t allow for mismatches of the kind shown to be possible in §2.

- Generalization: the mismatches that are grammatical are all above the verbal domain; the mismatches that are ungrammatical are inside of it.\(^8\)
- Intuition: sluicing privileges content that originates within the verbal domain (the verb and its arguments) over content that doesn’t (cf. Langacker’s (1974) notion of ‘objective content’).
- Implementation: restrict head-based syntactic identity condition to heads that originate within the verbal domain.\(^9\)

\[\text{(21) Syntactic Identity Condition (final):} \]
Given a prospective ellipsis site \(\alpha\) and its antecedent \(\beta\), non-pronunciation of the phonological content associated with any head \(h \in \alpha\) is licit only if at least one of the following conditions hold
\[
\begin{align*}
\text{a. } & \text{h’s external merge site is outside of } \alpha’s \ vP \\
\text{b. } & h \text{ has a STRUCTURE-MATCHING CORRELATE } i \in \beta.
\end{align*}
\]

This revised condition now permits the attested mismatches from the previous section: it allows all mismatches above the verbal domain.

\[\text{(22) Sally knows that there is always the potential for [awful things to happen]\(A\), but} \]
she doesn’t know when \(<\text{awful things } \{\text{will, might} \} \text{ happen}>E\).\]

\(^8\)I use the term ‘verbal domain’ to refer to that constituent of a CP that contains the external merge sites of the verb and its arguments, as well as the head that determines the voice of the clause. In my formal implementation I treat the \(vP\) as the verbal domain—nothing crucial rests on this. In a theory with a more elaborate verbal architecture, the highest phrase in that architecture would serve as the ‘verbal domain’ for our purposes here.

\(^9\)Because the syntactic condition must ignore material that has moved out of the ellipsis site, this condition must be assessed at some stage of the syntax after all visible movement operations have occurred, either surface syntax or LF. Because (in English) subjects move out of the verbal domain, and subject mismatches are impossible under sluicing, we must talk about material that \textit{originated within} the verbal domain rather than material that is within it at the time the syntactic identity condition is assessed.
In (23), material originating in the verbal domain of E is colored red; material not colored red is not required to have a structure-matching correlate in the antecedent, and is therefore freely mismatchable.

4 The pragmatics of sluicing (précis of Kroll 2016a)

We’ve seen that the syntactic identity condition given here correctly rules out impossible mismatch categories in sluicing constructions. However, it over-generates the availability of possible interpretations of ellipsis sites. It is not the case that the antecedent and ellipsis sites in sluiced constructions can always mismatch in polarity or modality: the mismatch must be pragmatically licensed.

(24) a. Context: Students in a semantics class were given a set of extra credit problems, which they could choose to do exactly one of. If they chose to do a problem, they were required to mark the number of that problem on a spreadsheet. The professor and TA look at the spreadsheet and see that nothing is marked down under John’s name. The TA says to the professor:

Possible Sluice: [John, either didn’t do an extra credit problem]_A, or he didn’t mark which one, <he did>._E.

b. Context: Students in a semantics class were given a set of extra credit problems, which they could choose to do up to half of. All students were required to put a mark on a spreadsheet next to each question, indicating whether they did or didn’t do it. The professor and TA look at the spreadsheet and see that John has not put a mark next to all of the questions. The TA says to the professor:

Impossible Sluice: [John marked which problems he did]_A, but he didn’t mark which ones, <he didn’t do>._E.
Examples such as (24b) should not be ruled out by a syntactic constraint on possible structure mismatches, since mismatches in polarity are possible and attested, as we see in (24a). Instead, (24b) is properly filtered out by our pragmatics.

### 4.1 Pragmatic Interpretation Condition

Our pragmatic interpretation condition optimally constrains the availability of mismatches by requiring contextual entailment between the local context and the ellipsis site. Informally, a TP can be elided iff it expresses a proposition that is entailed by the local context ($c_L$) and is uniquely salient.

Formally:

(25) **LOCAL GIVENNESS:**

A TP $\alpha$ can be deleted iff $\text{ExClo}(\lceil\alpha\rceil_{w,g})$ expresses a proposition $p$, such that $c_L \subseteq p$ and $p$ is uniquely salient.

We now present a case study of how the pragmatic interpretation condition works. Another case study is provided in Appendix C.

### 4.2 Deriving Exclusive Disjunction Polarity Reversal Sluices

(26) [John$_j$ either didn’t do an extra credit problem]$_A$, or he$_j$ didn’t mark which one$_i$ he$_j$ did$_t$.$^{10}$

**Karttunen’s (1974) Local Context for Exclusive Disjunction:**

For propositions $p$, $q$ such that $p \lor q$ is uttered in a context $c$:

- $c_L$ for $p = c$,
- $c_L$ for $q = c + \neg p$.

**Informal Application of Local Givenness to (26):**

1. Assertion of Exclusive Disjunction in (26):

(26) asserts that either (A) John didn’t do an e.c. problem or (E) John did an e.c. problem.

The disjunction is exclusive because the two disjuncts are opposites: they cannot both be true (or false) at the same time.

$^{10}$Note that the wh-phrase which one is d-linked in the sense of Pesetsky (1987), meaning that it ranges over a salient set in the discourse. As the d-linking is orthogonal to the example here, we suppress this issue for the sake of expository clarity.
2. Karttunen’s Local Context for Disjunction:

\( c_{L-A} \) for John did not do an e.c. problem = c

\( c_{L-E} \) for John did an e.c. problem = c + \( \neg A \) = c + \( \neg [\text{John did not do an e.c. problem}] \) = John did an e.c. problem

3. Local Givenness:

(E) John did an e.c. problem must be entailed by its local context.

(\( c_{L-E} \)) John did an e.c. problem \( \rightarrow \) (E) John did an e.c. problem

Local Givenness is satisfied and we correctly predict felicitous elision in (26).

Formal Application of Local Givenness to (26):

i. Denotation of \( \Lambda \):
\[
\llbracket \Lambda \rrbracket^{w, g} = \{ w : \neg \exists x [\text{extra credit problem}(x)(w) \land do(x)(j)(w)] \}
\]

ii. Denotation and Existential Closure of \( E \):
\[
\text{ExClo}(\llbracket E \rrbracket^{w, g}) = \{ w : \exists x [\text{extra credit problem}(x)(w) \land do(x)(j)(w)] \}
\]

iii. Karttunen’s Local Context for \( \Lambda \) and \( E \)
\( c_{L-A} = c = W \)
\( c_{L-E} = c + \neg A = W \cap \{ w : \neg \neg \exists x [\text{extra credit problem}(x)(w) \land do(x)(j)(w)] \} \)

iv. Local Givenness:
\( c_{L-E} \subseteq \text{ExClo}(\llbracket E \rrbracket^{w, g}) = \{ w : \neg \neg \exists x [\text{extra credit problem}(x)(w) \land do(x)(j)(w)] \} \subseteq \)
\[
\{ w : \exists x [\text{extra credit problem}(x)(w) \land do(x)(j)(w)] \}
\]

Recall the impossible sluice from (24b), repeated below. How does the current account rule this out?

Impossible Sluice: [John\(_j\) marked which problems he did]\(_\Lambda\), but he\(_j\) didn’t mark which ones, <#he\(_j\) didn’t do >\(_E\).

The local contextual entailment of the elided phrase comes from the presuppositional properties of the disjunction operator; replacing the disjunction operator with ‘but’ changes the contextual entailments such that Local Givenness is no longer satisfied, and we correctly rule out the impossible interpretation of (24b).\(^{11}\)

\(^{11}\)Note that the unelided form of (24b) sounds best with verum focus in the clause that is elided in the infelicitous sluice:

(1) John marked which problems he did, but he didn’t mark which ones he DIDN’T do.

The fact that the elided clause is comfortable hosting focus is independent empirical confirmation of the notion that its interpretation is not a salient entailment of the local context.

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\(^{11}\) Note that the unelided form of (24b) sounds best with verum focus in the clause that is elided in the infelicitous sluice.
5 Conclusion

In this talk, we’ve advocated for a dual-perspective approach to sluicing.

Main Points

▷ there is both a grammar and a pragmatics of sluicing

▷ the two perspectives complement each other well: what is problematic to account for from one perspective is easy to account for from the other

▷ this is different from a hybrid approach to the grammaticality of sluices: the two perspectives are independent, and independently necessary

Though we’ve focused on sluicing in this talk, we believe the dual-perspective approach may be applicable to ellipsis more broadly. We hope this approach can be profitably extended to the analysis of other elliptical constructions.

References


Kroll, Margaret. 2016a. Polarity reversals under sluicing. Manuscript, UCSC.


Levin, Beth. 2003. Objecthood and object alternations. Talk given at UCLA.


Rudin, Deniz. 2016. Head-based syntactic identity in sluicing. Manuscript, UCSC.


Appendix A: More on Correlates

The syntactic condition presented in §3 relies crucially on the notion of a CORRELATE of a head.

(27) **CORRELATE:**
A node \( n \) can be a correlate of a head \( h \) iff the content of \( n \) is either lexically or referentially identical to \( h \).

Lexical identity is straightforward. Referential identity is defined in terms of coindexation.\(^{12}\) Consider the following data:

(28) a. I don’t know who, \( t_1 \), said what, \( t_2 \), or why \(<\text{they}>, \text{ said it}, >_E \).

\(^{12}\)For previous avenues toward formalizing the notion that indexation is relevant to ellipsis-licensing, see Sag (1976), Rooth (1992), Fiengo & May (1994), and Heim (1997) (cf. critical discussion in Merchant 2001). The conflation of lexical and referential identity under ellipsis in (27) is a straightforward restatement of the notion of ‘vehicle change’ in Fiengo & May (1994).
b. I think [a guy I know] won a gold medal, but I don’t know when \(<\text{he, won a gold medal}>_E\).

c. (from Elliott & Sudo 2016) Someone applied to [five graduate schools]_1, but I don’t know who \(<\text{applied to them}>_E\).^13

Examples (28a-28c) show that traces, \(\text{wh}\) elements, pronouns, and full DPs, including quantified DPs, can serve as correlates for each other. Merchant (2013a) notes that NPIs can mismatch under ellipsis as well:

(29) John didn’t see anyone, but Mary did <see someone>_E.

His explanation for this fact is that NPIs like anyone and their non-NPI correspondents, like someone, are lexically identical—the NPI is the reflection of agreement with polarity.

There may be further modifications necessary to make the definition in (27) empirically adequate. Consider the following grammatical sluice:

(30) Many prominent congressmen still have not endorsed the candidate. In a moment, two of them will explain why <they still have not endorsed the candidate>_E.

The relevant interpretation of (30) is the one in which the elided they is interpreted as referring back to the two congressman doing the explaining, not the the DP many prominent congressmen in the antecedent. In this case, we have a grammatical sluice in which an elided pronoun meets neither of the conditions on correlate identification in (27): material in the relevant portion of the antecedent is neither lexically identical or referentially identical (coindexed).

Assuming quantifier raising, at LF the antecedent and the ellipsis site will both contain at Spec, TP a variable that is bound by an operator outside of the TP. The solution to the empirical problem posed by examples like (30) may be to expand the definition in (27) to allow any variables that are bound by operators outside of the domain of structure-matching to serve as correlates for each other, perhaps with supplementary restrictions discussed in the literature on scope parallelism constraints on elliptical constructions (see e.g. Fiengo & May 1994).

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13This is to be contrasted with another potential interpretation of this sluice:

(1) Someone applied to five graduate schools, but I don’t know who <applied to five graduate schools>_E.

See Elliott & Sudo (2016) for detailed arguments that both readings are possible, contra Chung et al. (2011).
Appendix B: More on the Pragmatics

Context $c$: the set of worlds compatible with what is accepted as true by participants in a conversation at a particular point in the conversation (Stalnaker’s 2002 context set).

Local context $c_L$: the set of worlds compatible with the presuppositions of the local proposition.

The local context allows propositions to be entered into the discourse as temporary assumptions without being entered into the global discourse context (Karttunen & Peters 1979, Heim 1983, Kadmon 2001).

Context update:

a. If $c_L$ entails the presuppositions of a proposition $p$, then $c_L + p = \{c_L \cap p\}$

b. If $c_L$ does not entail the presuppositions of $p$, then either:
   i. undefined, or
   ii. the presuppositions of $p$ are accommodated, $c_L + p = \{(c_L \cap ps(p)) \cap p\}$

Remember
In some contexts, to not remember an eventuality $e$ is to believe that $e$ did not happen (see Karttunen’s (1971) ‘implicative’ verb, Higginbotham’s (2003) obligatory de se interpretation).

\[31\] [corpus example 91594, Santa Cruz Ellipsis Project]

Context: [O]n the day the Japanese invaded Pearl Harbor, Hummel was rounded up and locked in an internment camp along with about 2,000 other foreigners...

Sluice: “I don’t know why $<I$ wasn’t scared$>_E$, but I really cannot remember being scared,” [Hummel] said. “It all seemed like great fun.”

Remember is not a neg-raiser. However, in certain contexts it licenses the pragmatic inference that $\neg\text{remember } p \rightarrow \neg p$.

Negative Non-factive Attitude Verbs: Doubt

In some contexts, to doubt a proposition $p$ is to weakly believe $\neg p$ (Asher 1987, Anand & Hacquard 2013).

\[32\] [modified corpus example 99105, Santa Cruz Ellipsis Project]

We doubt that Iraq will comply with the mandate, but we don’t know why $<\text{they won’t comply with the mandate}>_E$.

If to doubt a proposition $p$ is to believe weakly that it is not the case that $p$ or to have a preference for $\neg p$, then the inference doubt $p \rightarrow$ believe $\neg p$ will hold in contexts in which the speaker’s preference for, or belief that, $\neg p$ becomes salient or strong enough to push the commitments of the speaker to $\neg p$ over $p$. 15
Another category of polarity reversal mismatches in which pragmatics constrains the possible availability of mismatches is that involving neg-raising verbs, such as (33).

(33) I don’t think that [Trump will comply with the debate requirements]₁, but I don’t know why <he, won’t comply with the debate requirements>₂.

Note that the same reversal is not available with non-neg raising verbs, like know.¹⁴

(34) Mary doesn’t know that [Trump will comply with the debate requirements]₁, but I’m not sure why <#he, won’t comply with the debate requirements>₂.

What is special about neg-raising verbs like think vs. non-neg raising verbs like know? In (33), ‘¬think that p’ commits the speaker (in a defeasible way) to ‘think that ¬p’.

Gajewski (2007) proposes that neg-raising verbs are conventionally associated with a pragmatic excluded-middle presupposition, while non-neg raising verbs are not.

Applying Local Givenness to (33):

i. \( c = W \)

ii. (33A) semantically asserts that it is not true that the speaker believes that Trump will comply.

(35) _Semantic Denotation of (33A):_

\[
[\text{A}]^{w,g} = \neg \forall w[w \in W_{\text{dox},s} \rightarrow \text{comply}(t)(w)]
\]

iii. The pragmatic excluded middle presupposition—conventionally associated with the verb think—requires that the speaker either believes that Trump will comply or believes that Trump will not comply.

(36) _Excluded Middle Presupposition of (33A):_

\[
[\forall w[w \in W_{\text{dox},s} \rightarrow \text{comply}(t)(w)] \lor \forall w[w \in W_{\text{dox},s} \rightarrow \neg \text{comply}(t)(w)]]
\]

iv. (33A) + (36) derive the strengthened neg-raised interpretation: Because (33A) asserts that it is not true that the speaker believes that Trump will comply, it follows that the speaker believes that Trump will not comply.

(37) _Strengthened Neg-Raised Interpretation of (33A):_

\[
\forall w[w \in W_{\text{dox},s} \rightarrow \neg \text{comply}(t)(w)]
\]

v. The assertion of (37) yields a local context that includes only those worlds in which Trump will not comply.

¹⁴Note that the example changes from first to third person because it is infelicitous for a speaker to deny knowledge of a fact they are asserting.
(38) Context + assertion of (37):
\[ c + (37) = \{ w : \neg \text{comply}(t)(w) \} = c_{L,E} \]

vi. (33E) asserts that Trump will not comply.

(39) Semantic Denotation of (33E):
\[ \text{ExClo}(\lfloor E \rfloor_{w,g}) = \{ w : \neg \text{comply}(t)(w) \} \]

vii. Local Givenness requires that the elided proposition be entailed by its local context. There is mutual entailment between the world sets in (32) and (33), and we therefore predict felicitous elision of the proposition expressed by (33E).

(40) Local Givenness Applied to (33):
Local Givenness = \( c_L \subseteq E = \{ w : \neg \text{comply}(t)(w) \} \subseteq \{ w : \neg \text{comply}(t)(w) \} \)