



Sentential Polarity under Ellipsis*

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ABSTRACT

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This paper sheds light on a relatively under-studied phenomenon observed in an elliptical construction – polarity reversal under Sluicing. Specifically, we look into a Sluicing construction in which the unstated proposition in the elliptical site bears inverse polarity to the presumable antecedent. After reviewing Kroll's (2019) latest work among the relevant literature and presenting an array of intriguing empirical facts, we make the following three generalizations and proposals: [1] In exclusive disjunction contexts, in which verum focus does not play a grammatical role, polarity reversal under Sluicing is readily observed. In line with Rudin's (2019) syntactic condition, we propose that functional categories such as sentential polarity as well as aspect, modal, tense, and complementizer enter syntax without being specified concerning their lexico-syntactic features. Crucially, we propose that identity in ellipsis be computed before such features are determined at LF. Then, it is only the vP that counts in the calculation of identity for the license of ellipsis. [2] In other non-exclusive disjunction contexts, in which verum focus plays a crucial role in yielding relevant interpretations, polarity reversal under Sluicing is not allowed. This suggests that what is involved in so-called Neg-'raising' and implicative verb contexts is, in fact, not polarity reversal but polarity concord under Sluicing. [3] Unlike English, Korean allows polarity reversal under (pseudo-)Sluicing relatively freely in non-exclusive disjunction contexts, which is attributed to the fact that it does not require phonological realization of verum focus. This contrastive property is conjectured to be due to the fact that verum focus is given to an auxiliary verb in English while it is attracted to a Wh-XP in Korean.

KEYWORDS

polarity reversal, Sluicing, exclusive disjunction, pseudo-Sluicing, verum focus

1. Introduction

Ellipsis is well-known to be a phenomenon where a constituent remains silent under identity with the antecedent as in (1). This coordinate construction is understood as ‘Joe can play the violin and Sue can play the violin, too’.

- (1) Joe can play the violin and Sue can, too.

Sluicing, a type of ellipsis, is introduced by a *wh*-XP, which stands alone due to ellipsis of the following IP as illustrated in (2). In this case, the second clause is interpreted as ‘I don’t know what Joe can play’.

- (2) Joe can play something, but I don’t know what.

Polarity reversal under ellipsis then refers to the phenomena that the antecedent and the ellipsis target exhibit apparent opposite polarity in interpretation. The relevant constructions are split into two types - exclusive disjunction and Neg-‘raising’ contexts in English, as claimed by Kroll (2019).

First, given a rich situational context, Sluicing in exclusive disjunction ‘either-or’ contexts like (3) allows polarity reversal. Specifically, the antecedent clause is a negative proposition while the elided one is a positive statement.

- (3) Situation: Students were given the option to do an extra credit problem, but were required to mark which problem they did next to their name on a spreadsheet. There is no mark next to John’s name.

The TA says:

Sluice: Either [John_j didn’t do an extra credit problem]_A, or he_j didn’t mark [which one]_i [~~he_j did do it~~]_E.
Kroll (2019: (3))

Analogously, in so-called Neg ‘raising’ contexts, inverse polarity is observed in Sluicing even without invoking a situational context. For example, the antecedent and the elided clause in (4-5) are interpretively opposite in polarity:

- (4) I don’t think that [Trump_j will comply]_A, but I don’t know why [~~TP he_j won’t comply~~]_E.
(5) I don’t think that [California will comply]_A, but I don’t know why [~~TP California won’t comply~~]_E.
Kroll (2019: (2))

Kroll (2019) further notes that given an appropriate context, polarity reversal is also attested in VP ellipsis, as in (6):

- (6) Situation: In an internet discussion of the controversial political book *Fire and Fury*, which some discussants argue did not properly document all its claims:

Commenter: “Much of the book is unsourced, but some is [~~sourced~~].” Kroll (2019: (58))

With this backdrop, we are to critically review Kroll’s study of polarity reversal under Sluicing. Specifically, we will present some empirical facts that challenge Kroll’s proposal that sluicing be handled as a pragmatic phenomenon licensed by local contextual entailment. Departing from her analysis, we are going to make three claims. We present these first, and then attempt to justify them throughout this paper. First, we claim that polarity

reversal in the exclusive disjunction ‘either–or’ context is just apparent in that the polarity feature, like other functional features, is unvalued when subject to ellipsis, particularly in computing identity in ellipsis. Even opposite polarities thus do not count in the calculation of identity in ellipsis, which suggests that the relevant features be contextually filled at LF. The second claim is that polarity reversal in the Neg ‘raising’ context is, in fact, ‘polarity harmony or concord’ since the propositional attitude complement in the antecedent clause is semantico-pragmatically construed as a negative proposition in a given discourse. Lastly, we propose that verum focus, being closely related with the licensing of polarity reversal in the elliptical contexts, needs to be phonologically realized in English, while it does not in Korean.¹ That is, phonological realization of verum focus is grammaticalized in English while it is not in Korean. Specifically, since verum focus receives a nuclear accent, it need be phonologically realized on an auxiliary verb in English. Korean, however, does not require phonological realization of verum focus due to lack of a nuclear accent. This difference in turn accounts for the fact that not Sluicing but VP ellipsis is resorted to in such contexts in English where verum focus should be phonologically realized.

In the following sections, we present a wide variety of intriguing empirical facts, most of it novel, and then review Kroll’s (2019) account for the related data. In so doing, we provide justifications for our claims above.

2. Exclusive disjunction contexts

2.1. Exclusive disjunction in English and Korean

This section investigates polarity reversal in exclusive disjunction contexts in English and Korean. Crucially, we propose that identity in ellipsis is computed before functional features such as *sentential polarity* are determined in syntax, i.e., they enter syntax without being specified. As for the disjunctive, the Korean counterpart of the English exclusive disjunction ‘or’ is ‘-kena’ or ‘ani-myen’, which denotes ‘or’ and ‘otherwise’, respectively. As represented in Sluices in situation (7), the antecedent and the elided clause exhibit opposite polarity. Specifically, the antecedent clause has negative polarity while the elided one has positive polarity.

- (7) Situation: A person who takes a test in the midterm exam must write the number of each bonus question that he/she solves next to his/her name. While grading John’s test paper, the professor says:

a. Sluice in English:

It seems either [John_i didn’t do an extra credit problem]_A, or he didn’t mark which one_i [~~he_i did do t_i~~]_E.
Kroll (2019: (3))

b. Sluice in Korean:

¹ Verum focus refers to a phenomenon which accentuates left peripheral elements along the clausal spine such as a finite verb, complementizer, relative or *wh*-element (Lohnstein 2016). That is, it is a focus phenomenon observed in German, which is realized at the finite verb or a complementizer as exemplified in (i-ii):

- (i) Karl HAT den Hund gefüttert
Carl HAS the dog fed
‘Carl DID feed the dog.’
- (ii) Karl HAT den Hund gefüttert
Carl HAS the dog fed
‘DID Carl feed the dog?’

Its semantic effect is characterized as highlighting the declaration of truth of a proposition (Höhle 1988; 1992).

Cheli-ka ponesu mwuncey-lul phwul-ci anh-ass-kena,
 Cheli-Nom bonus question-Acc solve-Neg-Past-either
 animyen (Cheli-ka) [e] etten mwuncey-i-nci phyosiha-ci anh-un kes kaththa.
 or (Cheli-Nom) which question-be-Comp mark-Neg-seem
 ‘It seems either [Cheli_i didn’t do an extra credit problem]_A, or he didn’t mark which one_i; [he_j did do t_i]_E.
 ([e] = ku-ka phwun-kes-i)

The bracketed *e* -- [e] -- represents the phonologically null propositional content corresponding to the antecedent clause, and this null category [e] is derived via what is called *pseudo-Sluicing* named in a parallel way after *pseudo-Cleft*. Specifically, the empty subject [e] in (7b) above is conjectured to have the following structure (8) by the consideration of the relevant meaning although the postulation of the null category would need further justification:

- (8) Cheli-ka ponesu mwuncey-lul phwul-ci anh-ass-kena, animyen
 Cheli-Nom bonus question-Acc solve-Neg-Past-either or
 [e = ku-ka phwun-kes-i] etten mwuncey-i-nci phyosiha-ci anh-un kes kaththa.
 he-nom solve-what-nom which question-be-Comp mark-Neg-seem

The same pattern holds in (9-11), which illustrates different types of Wh-XPs, i.e., ‘which item’ in (9), ‘who’ in (10) and ‘why’ in (11).

- (9) Situation: As John/Cheli prepared for his trip, he was going to make a list of things to put in the trunk, and everything he put in the trunk would be erased with an X mark. But when his wife actually looked at the list, nothing was given the X mark. She says:

a. Sluice in English:

It seems either [John_j didn't put any items in the trunk]_A, or he didn't mark which one_i; [he_j put t_i in the trunk]_E.

b. Sluice in Korean:

Cheli-ka thulengkhu-ey mwulken-ul (cenhye) neh-ci anh-ass-kena,
 Cheli-Nom trunk-in stuff-Acc at.all put-Neg-Past-either
 animyen (Cheli-ka) [[e] etten mwulken-i-nci] phyosiha-ci anh-un kes kaththa.
 or (Cheli-Nom) which item-be-Comp mark-Neg-seem
 ‘It seems either [Cheli_j didn't put any items in the trunk]_A, or he didn't mark which one_i; [he_j put t_i in the trunk]_E.’ ([e] = ku-ka thulengkhu-ey nehun-kes-i)

- (10) Situation: 20 kindergarten kids have gathered in a garden and are going to go on a picnic by shuttle bus. There's a piece of paper with 20 names on it. For the kids who have arrived, the homeroom teacher is supposed to circle them next to their names. When the kindergarten director looks at the list on the sheet before boarding the shuttle, there is no circle next to each name. The director makes the following remark.

a. Sluice in English:

It seems either [no kid has come]_A, or she didn't mark who_i [t_i has come]_E.

b. Sluice in Korean:

aitul-i (acik) amwuto an wa-ss-kena,
 kids-Nom yet anyone Neg come-Past-either

animyen [[e] nwukwu-i-nci] phyosi-lul an ha-yss-na pokwuna.
 or who-be-Comp mark-Acc Neg do-Past-seem
 ‘It seems either [no kid has come]_A, or she didn’t mark who_i [t_i has come]_E.’
 ([e] = o-n salam-i)

- (11) Situation: On Dec. 10, Senator McCain sent a letter to the FCC urging the five-member board to end two years of deliberations and decide whether Paxson Communications should be given a license for a Pittsburgh station. Angela J. Campbell, an attorney for opponents to the deal, told the Globe that McCain’s letter likely ‘tipped’ the scales in favor of the decision. [Corpus example 22987, Santa Cruz Ellipsis Project. Taken from Rudin (2019)]

a. Sluice in English:

“Senator McCain said, ‘[Do it by December 15]_A or explain why [you cannot do it by December 15]_E,’ and the commission jumped to it and did it that very day,” Campbell told the Globe.

b. Sluice in Korean:

12-wel 15-il-kkaci (i saan-ul) kyelceng-ul ha-tenci,
 December 15-day-by (this issue-Acc) decision-Acc make-Comp
 animyen [[e] way-i-nci-lul] selmyengha-si-o.
 or why-be-Comp-Acc explain-Hon-Decl

‘[Do it by December 15]_A or explain why [you cannot do it by December 15]_E.

([e] = kyelceng-ha-ci anh-nun-kes-i)

Kroll (2019) accounts for polarity reversal in exclusive disjunction ‘either-or’ as follows. Essentially, by the semantic relation between the first and the second disjunct in exclusive disjunction contexts, the proposition described by the first disjunct is negated in the description of the second disjunct. If the first disjunct is a negative clause, the second disjunct ends up with the negation of the first disjunct, which yields a positive clause. Specifically, the antecedent disjunct clause in (7a) is “John didn’t do an extra credit problem” and the elided, second disjunct clause is “John did an extra credit problem”, which is the negation of the antecedent clause.

Kroll’s (2019) account based on the disjunctive operator seems to work nicely as for (7) and other similar set of data illustrated above. Significantly, those data severely undermine Merchant’s (2001) mutual semantic entailment approach (12) for an account of various elliptical constructions. In his proposal, ellipsis is licensed as follows; after the existential focus-closure of each antecedent and ellipsis target, if they both entail each other, deletion is triggered.

(12) Focus Condition on Ellipsis

(FCE, or truth conditional mutual entailment condition on ellipsis, Merchant 2001: 26):

- a. A constituent E can be deleted iff E is e-given.
- b. An expression counts as e-given iff E has a salient antecedent A and, modulo \exists -type shifting,
 - i. A entails F-clo (E), and
 - ii. E entails F-clo (A).

Now, on this mutual entailment condition, take (13) (= (7a) reintroduced) again, for example.

- (13) It seems either [John_j didn’t do an extra credit problem]_A, or he didn’t mark which one_i [he_j did do t_i]_E.

In (13), the antecedent clause is a positive one while the elided is a negative one. They never entail each other. This begs an answer to the question how ellipsis occurs in Merchant's (2001) style analysis.

Kroll (2019) further argues, examples such as (13) show that "a pragmatically-enriched bidirectional entailment account is insufficient to explain the polarity reversal data, as no pragmatic enrichment of the semantic content of A and E in (13) will yield bidirectional entailment of the propositions. Instead, the crucial licensing factor is the disjunctive operator, which contributes its heritage properties to A and E, and not the propositional content of A and E themselves."

Crucially, Kroll (2019) rules in examples like (13) by loosening up Merchant's entailment relation for identity in ellipsis. To be specific, she revised Merchant's entailment relation from mutual entailment to uni-directional one. Given this slight revision, in exclusive disjunction contexts, by virtue of exclusive disjunctive operator, the first disjunct 'John_j didn't do an extra credit problem' entails its negation 'He_j did which extra credit problem' in the second disjunct, thereby meeting identity requirement in ellipsis. Following Karttunen's (1974) proposal of the local contexts for exclusive disjunction constructions, as for (13), Kroll (2019) goes on to state that the context in which the first disjunct is admitted is just the global conversational context, but the context in which the second disjunct is admitted takes into account its opposition to the first disjunct, and therefore all the worlds in which the first disjunct holds are excluded.

Kroll's (2019) loosening up of identity in ellipsis, however, immediately faces a difficulty in accounting for examples like (14):

(14) a. Lately, Mark hasn't been able to play the sonata flawlessly. I don't know why.

i. = why Mark hasn't been able to play the sonata flawlessly.

ii. ≠ why Mark has been able to play the sonata flawlessly.

b. Abby didn't turn off the stove, but I don't know when.

i. = when she didn't turn off the stove.

ii. ≠ when she turned off the stove.

(Merchant 2013: 19)

(14a) and (14b) denote (14ai) and (14bi), respectively, but they cannot be understood as (14aii) or (14bii). This set of examples made Merchant (2013) claim that a negation in an antecedent clause will always require a corresponding negation in the elided clause (Merchant 2013: 19).

Taken together, data (7-10) seem to be in stark contrast to data (14) in that the former allows polarity reversal while the latter does not.

2.2. An alternative account

Towards an alternative analysis, we are going to look at other familiar cases where the antecedent and the ellipsis clauses are not the same in polarity features. Among those are sentences involving contrastive focus on remnants under Sluicing as in (15-17). These examples come with *wh*-elements followed by 'else' or 'other', and their correlates are contrastively focus marked common nouns or proper nouns. That is, the remnants and their correlates are in contrastive focus relation:

(15) 'Else'-modification (Merchant 2001: 122)

Matt sent me_[F] his latest paper on Sluicing, but I don't know who else_[F].

(16) Contrastive Sluicing (Barros 2014: 40 (2.31))

He likes Sally_[F], but I don't know who else_[F].

(17) She has five cats_[F], but I don't know how many dogs_[F]. (Merchant 2001: 36)

In order to accommodate contrastive focus relation between *wh*-remnants and their correlates, Merchant (2001) proposes so-called focus closure, which replaces focus-marked elements with variables as in the definition for identity in ellipsis:

(18) a. Definition of GIVEN:

i. A constituent, XP_E, is GIVEN iff it has a salient antecedent, XP_A and

ii. Modulo existential type-shifting, XP_A entails the Existential Focus Closure of XP_E (written 'F-clo (XP_E)').

b. Definition of Existential Focus Closure

The result of replacing F(ocus)-marked parts of XP_E with variables and existentially closing the result, modulo \exists -type-shifting (Merchant 2001)

However, given that contrastive focus Sluicing always makes its contrastive-focus-marked remnant survive, polarity reversal under Sluicing cannot be analyzed on a par with contrastive focus Sluicing. Dismissing polarity reversal under Sluicing as different from contrastive focus Sluicing, we now turn to another case of Sluicing, where functional or inflectional features do not matter in computing identity in ellipsis. An array of interesting empirical facts is well documented by Rudin (2019). Specifically, mismatch in finiteness does not count in the computation of identity in ellipsis as exemplified in (19a-b), nor does mismatch in tense features, as illustrated in (20).

(19) Mismatches in finiteness:

(q.v. Merchant 2001, Ch. 1)

a. Finite antecedent, nonfinite sluice:

Sally [cooks]_A every night; she learned how [_{TP} ~~to cook~~]_E from her father.

b. Nonfinite antecedent, finite sluice:

The baseball player went public with his desire [to be traded]_A.

He doesn't care where [_{TP} ~~he is/will be traded~~]_E.

(20) Mismatches in tense:

[Your favorite plant is alive]_A, but you can never be sure for how long [_{TP} ~~it will be alive~~]_E.

In a similar line, mismatch in types of modality is not a big deal for the calculation of identity in ellipsis, either:

(21) Mismatches in modality (q.v. Klein 1985, Merchant 2001):

a. Appearance of modality:

Sally knows that there is always the potential [for awful things to happen]_A, but she doesn't know when [_{TP} ~~awful things {will, might} happen~~]_E.

b. Disappearance of modality:

Although Sally sees that [she must defeat her competitors]_A, she relies on Susie to tell her how [_{TP} ~~to defeat her competitors~~]_E.

c. Abstraction of modality:

Sally said that [customers should be given lower rates]_A, but Susie said it's hard to see how [_{TP} ~~customers could be given lower rates~~]_E.

Finally, example (22) reveals that mismatch in illocutionary force does not play a role in computing identity in

ellipsis. Specifically, the antecedent clause is an advice, whereas the unstated proposition in the elided clause is presumably an order or an obligation.

(22) Illocutionary mismatches:

[Always save a little from each paycheck.]_A Once you're older, you'll understand why [_{TP} ~~you should always save a little from each paycheck~~]_E.

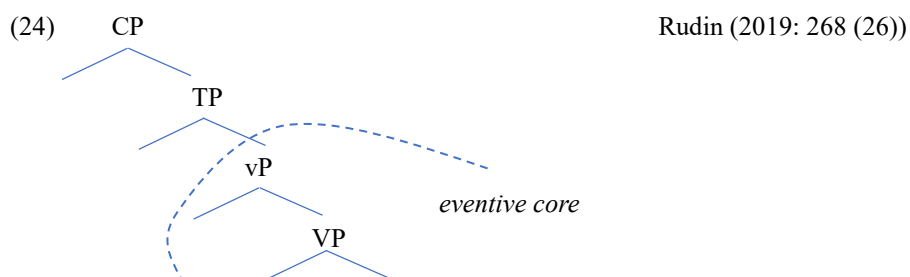
Based on these data involving inflectional or functional sloppiness, Rudin (2019) goes on to propose a syntactic condition on Sluicing as in (23).

(23) Syntactic Condition on Sluicing:

Given a prospective ellipsis site E and its antecedent A , non-pronunciation of the phonological content associated with any head $h \in E$ is licit if at least one of the following conditions holds.

- a. h did not originate within E 's eventive core;
- b. h has a structure-matching correlate $i \in A$.

In this condition, the critical component is (23a), in which the head h that is not a lexical head but a functional one need not be phonologically realized. Accordingly, tense, finiteness and modality residing in the clausal spine do not need to be identical for the ellipsis to occur. It is only the eventive core in the sense of Langacker (1974) that counts in the computation of identity in ellipsis. Rudin (2019) takes the eventive core to be the vP of a clause, "the complete verbal complex, including the origin sites of verbs and their internal and external arguments" in his terms (Rudin 2019: 268). This is schematically represented in (24):



Despite apparent mismatch in relevant features or values, a functional or inflectional head can then be part of ellipsis, remaining silent at PF. In line with Rudin's (2019) syntactic condition, we propose that functional or grammatical categories such as *sentential polarity* as well as aspect, modal, tense, and complementizer enter syntax without being specified concerning their agreement features like phi-features.² Crucially, we propose that identity in ellipsis is computed before such features of functional or inflectional categories are determined in syntax (cf. Adger 2007). Again, it is only the vP that counts in the calculation of identity for the license of ellipsis.

² A similar line of proposal was made regarding the interpretation of pronominal NPs. Fiengo and May (1994) adopted 'vehicle change' in accounting for sloppy readings that arise in the interpretation of some pronominal NPs.

3. Polarity reversal in Neg-‘raising’ contexts

We now turn to apparent polarity reversal in Neg-‘raising’ contexts as reintroduced in (25) and (26). In (25-26) the bracketed antecedent clause and the elided one show opposite polarity on the surface. Close examination however reveals that they are interpretively identical and that opposite polarity is just apparent, hence polarity concord rather than polarity reversal. Kroll (2019) follows Gajewski (2007) in her view of Neg-raising predicates as soft triggers that invoke a pragmatically excluded-middle presupposition. Specifically, Kroll proposes that the assertion of the antecedent clause in (25-26), being combined with the excluded-middle presupposition invoked by the verb *think*, entails that the speaker in (25-26) has the belief that Trump/California will not comply, thus satisfying identity in ellipsis.

- (25) I don’t think that [Trump_i will comply]_A, but I don’t know why [_{TP} ~~he_i won’t comply~~]_E.
 (26) I don’t think that [California will comply]_A, but I don’t know why [_{TP} ~~California won’t comply~~]_E.
 Kroll (2019: (2))

An analogous example concerns a verb like *remember*. Note that Karttunen (1971) classifies *remember* as an implicative verb. As such, when taking an infinitival/gerundive complement, *remember* has properties such that *remember* p (the embedded proposition) → p; ¬ (*not*) *remember* p (the embedded proposition) → ¬ p (negation of the embedded proposition). A relevant example follows:

- (27) [corpus example 91594, Santa Cruz Ellipsis Project] (Kroll 2020)
 Situation: [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... So he and a British friend engineered an escape with the help of Nationalist guerrillas concealed nearby. He crawled over barbed-wire and walked most of the night and the next day. He was 20 and had no military training. But he was handed a small Belgian pistol, and he had little choice but to stay and help, harassing Japanese patrols by night and trying to defend a small patch of land against a communist takeover.

Sluice: “I don’t know why [_{TP} ~~I wasn’t scared~~], but I really cannot [remember [being scared]]_A,” [Hummel] said. “It all seemed like great fun.”

The licensing of the inference $\neg \textit{remember} p \rightarrow \neg p$ is accounted for by two defeasible contextual assumptions in (27). The first assumption is that the speaker has a memory about the particular event described by the situation. The second assumption is that the speaker’s memory represents the speaker’s beliefs about the way the actual world was in the past. In any way, since $\neg \textit{remember} p \rightarrow \neg p$, Sluicing in (27) meets identity in ellipsis. In a similar line, let us take note of Korean examples involving Neg-‘raising’ complements. The Korean examples in (28b) and (29b), which correspond to the English counterparts in (28a) and (29a), are acceptable under pseudo-Sluicing analysis:

- (28) a. I don’t think [_{TP} Yuna will sell the apartment this year]_A, but I don’t know why [_{TP} ~~Yuna won’t sell the apartment this year~~]_E.
 b. Yuna-ka olhay aphathu-lul maytoha-l kes kath-ci anh-untey,
 Yuna-Nom this.year apartment-Acc sell-likely-Neg-but
 (na-nun) [[e] way-i-nci-lul] / (Yuna-ka maytoha-ci anh-nun iyu-lul)
 I-Top why-be-Comp-Acc / (Yuna-Nom sell-Neg-Rel reason-Acc

molu-key-ss-e.

do.not.know-Conj-Past-Dec

‘I don’t think Yuna will sell the apartment this year, but I don’t know why. (Does she expect that apartment prices are still on the rise?)’

[[e] = Yuna-ka olhay aphathu-lul maytoha-ci anh-nun kes-i)

- (29) a. I don’t think [_{TP} Yuna will register for the next semester]_A, and/but I don’t know why [_{TP} ~~Yuna won’t register for the next semester~~]_E.

- b. [Yuna-ka taum hakki-ey tunglokha-l ke-la-ko] sayngkakha-ci anh-nuntey,
Yuna-Nom next semester-for register-Conjec-Dec-Comp think-Neg-but

(na-nun) [[e] way-i-nci-lul] / (Yuna-ka tunglokha-ci anh-nun iyu-lul)

I-Top why-be-Comp-Acc / Yuna-Nom register-Neg-Rel reason-Acc

molu-key-ss-e.

do.not.know-Conj-Past-Dec

‘I don’t think Yuna will register for the next semester, and/but I don’t know why. (She has already taken a leave of absence for the past two semesters.)’

[[e] = Yuna-ka taum hakki-ey tunglokha-ci anh-nun kes-i)

What is noteworthy here is that, in Kroll’s analysis for apparent polarity reversal in Neg-‘raising’ or implicative verb contexts, the embedded verb with the matrix negation is construed as a negative proposition at a certain level of linguistic representation, i.e., a semantic or pragmatic level. Accordingly, what we see in Neg-‘raising’ and implicative verb contexts is in fact not a polarity reversal under Sluicing. Rather, it is a polarity concord under Sluicing since the complement in Neg-‘raising’ contexts is construed as ‘negative’ via the excluded-middle presupposition invoked by the verb *think* or via the inference: \neg (not) *remember* p (the embedded proposition) \rightarrow \neg (not) p, which results in fulfilling the identity condition in ellipsis.

4. Polarity reversal with propositional attitude complement (POS \rightarrow NEG)

This section presents a novel set of data involving the propositional complement of the cognitive verb ‘think’. Interestingly, we will see that Korean yields elliptical constructions with inverse polarity in a more flexible fashion than English does. Examples (30-35) introduces various types of WH-XPs as Sluices in which a proposition with reversed polarity is implied.³ Let us first consider (30):

- (30) Situation: Rumors are circulating that A does not agree to the B investigation. C says:

- a. Sluice in English:

*I thought that [he would agree to it]_A, but I don’t know why [_{TP} ~~he does not agree to it~~]_E.

- b. Sluice in Korean:

na-nun [ku-ka swusa-ey tonguyha-l kela-ko] sayngkakha-yss-nuntey,

I-Top he-Nom investigation-to agree-Conjec-Comp think-Past-but

³ One of the reviewers pointed out that the Korean examples do not seem to be more acceptable than their English counterparts. Although we consulted around ten native speakers of English and Korean, we admit that there still could be a speaker variation on the acceptability judgment of data provided above.

[[e] way-i-nci(-lul)] molu-keyss-ney-yo.
 why-be-Comp(-Acc) not.know-Conjec-Dec-Ending

'I thought that he would agree to it, but I don't know why he does not agree to it. (Most people also say that they do not understand why he does not agree to it.)'

[[e] = ku-ka swusa-ey tonguyha-ci anh-nun-kes-i)

As contrasted in (30), given the same situational context, polarity reversal under Sluicing is allowed in Korean, while it is not in English. Since there is no negation in the antecedent clause, it is plausible to propose that polarity reversal should be licensed by situational information in certain constructions as in (30). Specifically, the unstated proposition "A does not agree to the B investigation" represented by the silent clause is inferred from the situational context. In a similar fashion, given the identical setting, polarity reversal under Sluicing is not allowed in English while it is available in Korean:

(31) Situation: Among the four friends, the guys that would show up in front of Seoul Station were supposed to go hiking at 7 a.m. the next day. Among them, A especially likes hiking, but he has not shown up the next morning. One of the friends, B, that has shown up to the meeting says:

a. Sluice in English:

*I thought A would definitely show up, but I don't know why [TP ~~he does not show up~~].

b. Sluice in Korean:

Na-nun [(talun ay-tul-un molla-to) Cheli-nun thullimepsi nao-l cwul]
 I-Top other guy-Pl-Top not.know-although Cheli-Top definitely show.up-will
 al-ass-nuntey, [[e] way-i-nci] molu-keyss-e.
 know-Past-but why-be-Comp not.know-Conjec-Dec

'I thought A would definitely show up, but I don't know why he does not show up. (Has he overslept?)'

[[e] = Cheli-ka nao-ci anh-un-kes-i)

Again, the unstated proposition "A does not show up" represented by the elided clause is implicated in (31b). The same pattern holds in (32). Example (32a) is not acceptable in English, while example (32b) is available in Korean:

(32) Situation: When you look out the window from the top of a soundproof building, you know whether it's cloudy, but you don't know exactly whether it's raining (especially when it drizzles). Therefore, it is usually determined by looking at whether the wipers of the car are moving or whether passing people are using umbrellas. When I looked out of the window in the morning, I saw dark clouds coming in and people walking by with umbrellas, but in the afternoon, I looked out of the window again, and people were carrying folded umbrellas. I then say:

a. Sluice in English:

*I thought it would rain all day long, but I don't know from when [TP ~~it didn't rain~~].

b. Sluice in Korean:

Na-nun [pi-ka halwu congil o-l ke-la-ko] sayngkakha-yss-nuntey,
 I-Top rain-Nom all day long come-Conjec-Dec-Comp think-Past-but
 [[e] encey(-pwuthe)-i-nci] molu-keyss-ney.
 when(-from)-be-Comp not.know-Conjec-Dec

'I thought it would rain all day long, but I don't know from when it didn't rain. (People are carrying folded umbrellas.)'
 ([e] = pi-ka o-ci anh-nun kes-i)

Given the situation in (32), the unsaid proposition "it stopped raining" is implied at the ellipsis site. A similar account can be offered as for (33). Specifically, by the pragmatic cues, we can infer the proposition "A passed the exam" at the elliptical site.

(33) Situation: One guy A was preparing for the appointment test for some years, but he didn't study hard, and his attitude in class was not good, such as dozing off in class. His friend B has recently learned through A's SNS photo that A has worked as a public school teacher. B says:

a. Sluice in English:

*I thought A could not pass the exam, but I don't know how [TP ~~he passed it~~].

b. Sluice in Korean:

Na-nun [A-ka sihem-ey thongkwaha-ci mos-ha-l ke-la-ko] sayngkakha-yss-nuntey,
 I-Top A-Nom test-at pass-Neg-do-Conjec-Dec-Comp think-Past-but
 [[e] ?ettehkey-i-nci] molu-keyss-ta.
 How-be-Comp not.know-Conjec-Dec

'I thought A could not pass the exam, but I don't know how he passed it. (Heaven helped him.)'

([e] = A-ka sihem-ey thongkwaha-n kes-i)

Examples (34) and (35) further demonstrate that the embedded clause with a Neg-'raising' predicate is construed as a negative proposition. We can thus test the possibility of reversal from the negative polarity to the positive one under Sluicing. Even with the situational context, polarity reversal under Sluicing is not allowed in English, but it is available in Korean. In (34), the positive proposition "the factory is to be built" can be recovered at the ellipsis site.

(34) Situation: All the residents in a village opposed the construction of a cement factory in their own neighborhood. But one day resident A sees a picture of the cement factory completion ceremony in a newspaper. A says:

a. Sluice in English:

*I thought that the factory was not to be built anywhere, but I don't know where [TP ~~it is to be built~~].

b. Sluice in Korean:

Na-nun [(kutul-i) i tongney-ey simeynthu kongcang-ul kenlipha-ci mos-ha-l ke-la-ko]
 I-Top they-Nom this town-at cement factory-Acc build-Neg-do-Conj-Dec-Comp
 sayngkakha-yss-nuntey, [[e] eti(ey)-i-nci] molu-keyss-ney.
 think-Past-but where-be-Comp not.know-Conjec-Dec

'I thought the factory was not to be built anywhere in this town, but I don't know where it is to be built. (It would not have been easy to get an agreement from the towners.)'

([e] = kongcang-ul kenlipha-n kos-i)

The same account applies to (35). These examples show that in normal discourse contexts, which are non-exclusive disjunction contexts, polarity reversal under Sluicing is not allowed. Given the situational context in

(35), the unsaid proposition “someone was able to come in time” is presupposed at the elided site.

(35) Situation: I thought no one would come to class on time because of heavy rain, but when I saw it outside, the lights in the classroom were on.

a. Sluice in English:

*I didn't think anyone could come in time, but I don't know who_i [_{TP} ~~t_i was able to come in time~~].

b. Sluice in Korean:

nwukwuto ceysikaney tochakha-l kes khat-ci anh-ass-nuntey,

anyone in.time arrive-likely-Neg-Past-but

[[e] nwukwu-i-nci molu-keyss-ney.

who-be-Comp not.know-Conjec-Dec

'I didn't think anyone could come in time, but I don't know who was able to come in time. (Maybe the traffic was not heavy.)'

([e] = ceysikaney tochakha-n kes-i)

An outstanding question here is why polarity reversal under Sluicing is generally not allowed in English, unlike in Korean. This is because polarity in English, whether positive or negative, tends to receive a contrastive phonological focus, which is further supported by examples like (36) and (37). By resorting to VP ellipsis rather than Sluicing, we obtain phonological realization of polarity features, i.e., positive polarity in (36-37).

(36) There were 5 people at the party, and the food disappeared rather quickly. However, John, Mary and

[Sue [ate nothing]]_A. That makes me wonder who_i DID (eat the food)/*[_{TP} t_i ate the food]_E?

(37) There are fewer people here than there were just a minute ago, so it must be the case that someone left.

[John didn't [leave]]_A, so who_i DID (leave)/*[_{TP} t_i left]_E?

Even in exclusive disjunction contexts like (13), repeated here with slight phonological modification as in (38), polarity reversal under Sluicing is substantially degraded when there is an apparent focus on sentential polarity in the antecedent clause, as Stockwell & Wong (2020) note:

(38) Situation: A person who takes a test in the midterm exam must write the number of each bonus question that he/she solves next to his/her name. While grading John's test paper, the professor says:

It seems either [John_j DIDn't do an extra credit problem]_A, or he_j didn't mark ?? which one_i [~~he_j did do t_i~~]_E.

Likewise, in constructions involving exclusive disjunction, the same pattern holds as illustrated by the following grammatical contrast:

(39) Mismatch Type: Polarity clash (Stockwell & Wong 2020)

a. Either he turned in his final paper by midnight or he explained why <he didn't turn it in by midnight>.

b. ?? Either he DID turn in his final paper by midnight or he explained why <he DIDn't turn it in by midnight>.

The consequence of this analysis is that since verum focus is encoded not only on sentential polarity but also on tense, we can account for the unacceptability of (40B') in Stripping.

(40) Tense clash in stripping:

A: We met in this building yesterday.

B: That's right! And where do we meet later today?

B': That's right! And where <*do we meet/do we meet> later today?

To recap, in English, obligatory phonological realization of verum focus leads to VP ellipsis, leaving T behind, rather than TP ellipsis. The tense head serves to host a nuclear accent as demonstrated so far. Our account is in line with the generalization that focused elements cannot be elided, but overtly realized on the surface (Merchant 2001, Weir 2014 and Bennett et al. 2019, a.o.). Unlike English, Korean does not employ phonology to realize verum focus, thus allowing inverse polarity with propositional attitude complements in a more flexible way.

5. Conclusion

To wrap up the discussion so far, [1] in exclusive disjunction contexts, in which verum focus is unmarked or neutralized, inverse polarity is readily observed between the antecedent and the ellipsis target in sluicing constructions. [2] In other non-exclusive disjunction contexts, where verum focus plays a significant role in producing the relevant reading at the elliptical site, polarity reversal under sluicing is not available. This points to the fact that what is involved in so-called Neg-‘raising’ and implicative verb contexts is not polarity reversal. We rather suggest that it is polarity harmony/concord under sluicing in disguise. [3] While English possesses a grammatical/phonological system of realizing verum focus, Korean does not. This further accounts for the fact that Korean allows polarity reversal under pseudo-sluicing more freely, unlike English.

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Examples in: English

Applicable Languages: English

Applicable Level: Tertiary