ANTECEDENT-CONTAINED SLUICING AND IDENTITY IN ELLIPSIS

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In order to explore the nature of identity in ellipsis, this paper examines so-called antecedent-contained sluicing, where the antecedent of the sluiced clause appears to contain the ellipsis site. Based on new observations from English, German and Russian, which show that syntactic identity is required to capture the properties of the construction in question, I propose an analysis that tries to maintain the approach based on purely syntactic identity. Specifically, it is proposed that the derivation of antecedent-contained sluicing involves counter-cyclic adjunction of a constituent containing the ellipsis site to avoid an infinite regress problem.*

**Keywords:** antecedent-contained sluicing, syntactic/semantic identity, voice-mismatches, late merger

1. Introduction

To explore the nature of identity in ellipsis, this paper examines so-called ACS (antecedent-contained sluicing; Yoshida (2010), Tanaka (2011)), where the antecedent of the sluiced clause appears to contain the ellipsis site. After a brief review of Yoshida’s (2010) analysis of ACS arguing for purely semantic identity and Tanaka’s (2011) alternative analysis that tries to maintain purely syntactic identity, this paper provides a novel set of data that are problematic for their analyses. In particular, I provide new data not only from English but also from other languages, focusing on German and Russian. Arguing that the new data to be provided indicate that syntactic iden-
tity is required in ACS, I propose an alternative analysis which maintains
the syntactic identity approach, employing the idea of late merger (Lebeaux
(1988, 2009)). Hence, this paper argues for more recent approaches after
Merchant’s (2001) work that reinforces the necessity of syntactic identity
(see Fox and Lasnik (2003), Lasnik (2001), Merchant (2007, 2008, 2010),
among others).

This paper is organized as follows: Section 2 briefly reviews Yoshida’s
(2010) analysis of ACS and Tanaka’s (2011) alternative. Section 3 is de-
voted to providing the crucial data, pointing out that they raise certain prob-
lems for the existing analyses. Sorting out the problems, Section 4 pro-
poses the analysis that employs the notion of late merger, discussing some
theoretical implications of the proposed analysis. Section 5 concludes this
paper with some comments on broader issues concerning identity in ellipsis,
brieﬂy touching on Nakamura’s (this volume) arguments with respect to the
relation between voice-mismatches and ellipsis.

2. Background on ACS

2.1. ACS and Semantic Identity

Let us start the discussion by providing some background on ACS. (1a)
is a typical example of ACS (the symbol ∆ in (1a) and the examples to be
provided is intended to mean that some materials have been elided). As-
suming a structure where the without-clause is adjoined to the matrix VP
as in (1b, c), Yoshida (2010) points out that if the elided IP (IP_E) takes the
matrix IP (IP_A) as its antecedent, an inﬁnite regress would result, because
the latter contains the former as in (1b) (throughout this paper, an elided
constituent is indicated by shading and its alleged antecedent is put in a
box).1 To avoid an inﬁnite regress, he proposes that IP_E takes the (lower
segment of the) matrix VP (VP_A) as its antecedent, which does not contain
IP_E, as in (1c).

(1)

a. John loves someone [without knowing who ∆]. (∆ = he
loves)

b. [IPA John_i [VP t_i loves someone] [without knowing who_j [IPE
he loves t_j]]]

c. [IP John_i [VP t_i loves someone] [without knowing who_j [IPE
he loves t_j]]]

1 Following Yoshida (2010), I suppress the vP/VP distinction, unless explicitly stated.
He further argues that Merchant’s (2001) semantic identity condition formulated in terms of mutual entailment allows \( VP_A \) to be taken as identical to \( IP_E \) despite their syntactic mismatches. Some of the ingredients of Merchant’s (2001) approach are given in (2) and (3), where “[t]he F-closure of \( \alpha […] \) is the result of replacing F-marked parts of \( \alpha \) with \( \exists \)-bound variables of the appropriate type (modulo \( \exists \)-type shifting) (Merchant (2001: 14)),” and “\( \exists \)-type shifting is a type shifting operation that raises expressions to type \( <t> \) and existentially binds unfilled arguments (Merchant (2001: 14, fn. 3)).”

(2) **Focus condition on ellipsis** (Merchant (2001: 38))

A constituent \( \alpha \) can be deleted only if \( \alpha \) is e-GIVEN.

(3) **E-GIVENness** (Merchant (2001: 31))

An expression \( E \) 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(\( A \)).

Simply put, the semantic identity approach allows ellipsis to be licensed if a mutual entailment relation holds between an elided constituent and its antecedent, no matter whether they are syntactically identical or not.

Adopting this approach, Yoshida (2010) argues that the lower segment of the antecedent VP and the IP to be elided in (4a) have the semantic representations given in (4b) and (4c), respectively.

(4)  

a. \[ \text{John}_i \ [VP_{VP} \ t_i \ \text{kissed someone}] \ [\text{without knowing who}_j \ [IP_{he \ kissed \ t_j}]] \]

b. \( VP_A = F\text{-clo}(VP_A) = \exists x. \text{John kissed } x \)

c. \( IP_E = F\text{-clo}(IP_E) = \exists x. \text{he kissed } x \)

Provided that \text{John} and \text{he} in (4) refer to the same individual, the propositional contents of \( VP_A \) and \( IP_E \) are identical, hence \( VP_A \) entails F-clo(\( IP_E \)) and \( IP_E \) entails F-clo(\( VP_A \)). Since a mutual entailment relation holds as required, the condition (2) is satisfied. Thus the ellipsis of \( IP_E \) is properly licensed, yielding (1a). In this way Yoshida’s (2010) analysis of ACS supports the idea that purely semantic identity suffices for ellipsis licensing.

### 2.2. ACS and Syntactic Identity

As an alternative to the analysis in terms of purely semantic identity, Tanaka (2011) argues that (1a) is derived from something like (5a), which involves a wh-infinitive, by eliding the VP within the infinitive under identity with \( VP_A \). He further claims that there is a concomitant but independent process of omitting the infinitive marker \( to \), based on examples like (6a), which indicates that the infinitive marker \( to \) is optional. One poten-
tial account of this optionality is to assume two derivations given in (6b), where a VP is elided, and (6c), where an IP is elided. Tanaka (2011) takes the option in (6c) to be unavailable, however, since the antecedent verb is imperative so that there is no appropriate antecedent. Then, he concludes the omission of *to* is independently required. These two processes, namely VP-ellipsis and *to*-omission, conspire to yield the surface string of (1a) from (5a), as shown in (5b).

(5)  
   a. John loves someone [without knowing who [IP PRO to love]].  
   b. John, [VP [VPA \(t_i\) loves someone] [without knowing whoj [IP PRO\(k\) (to) [VPE \(t_k\) love \(t_j\)]]]]

(6) a. Invest now! We can show you how (to) invest.  
   (Tanaka (2011: 8))  
   b. … we can show you [CP how [IP to [VP invest]]]
   c. … we can show you [CP how [IP to [VP invest]]]

Note that Tanaka’s (2011) analysis can avoid an infinite regress since VP\(_A\) does not contain VPE. Furthermore, rather strict syntactic identity can also be maintained since VP\(_A\) and VP\(_E\) are of the same category.

As a piece of evidence for his analysis, Tanaka (2011) reports that unlike other wh-phrases, *why* cannot appear in ACS, as in (7a).

(7) a. *John loves Mary for some reason without knowing why ∆.  
   (Tanaka (2011: 7))  
   b. Bob knows {how/when/where/how long/*why} to crane his neck, but I don’t know {how/when/where/how long/*why}.  
   (Ross (1969: 271))

Pointing out that *why* is the only wh-phrase that cannot appear in wh-infinitives as in (7b) (see Ross (1969), Barrie (2007), Shlonsky and Soare (2011), among others), he argues that the ungrammaticality of (7a) shows that wh-infinives are indeed involved in the underlying structure of ACS.

3. Data

Contrary to what has been reported in Tanaka (2011), none of my informants find (7a), repeated as (8a), ungrammatical.

(8) a. *(*) John loves Mary for some reason without knowing why ∆.  
   b. John loves Mary in some manner without knowing how ∆.  
   c. I wonder {when/how/*why} to leave.

In particular, I have consulted 4 speakers, and they find no contrast in grammaticality between (8a) and (8b), which contains *how* instead of *why*, while they do find a contrast between *why* and *how* in (8c).
Furthermore, examples like (9a, c), which are slightly modified from (7a), are judged totally fine, unless the infinitive part appears overtly as in (9b, d).

(9)   a. John kissed Mary (for some reason) without saying why ∆.
   b. *John kissed Mary (for some reason) without saying why to kiss her.
   c. John kissed Mary (for some reason) without explaining why ∆.
   d. *John kissed Mary (for some reason) without explaining why to kiss her.

That is, these speakers do not allow why to appear in wh-infinitives. Nonetheless, they accept the ACS sentences involving why. Thus, Tanaka’s (2011) analysis involving wh-infinitives cannot be extended to this type of speaker.

Examining ACS in languages other than English provides a fresh look at the issue. The examples in (10a, b) indicate that ACS is possible in German and Russian.

(10) a. Hans küßte jemanden, ohne zu wissen, wen (er) küßte. [German]
   ‘Hans kissed someone without knowing who (he kissed).’
   b. Ivan poceloval kogo-to ne znaja kogo (on) he poceloval. [Russian]
   ‘Ivan kissed someone without knowing who (he kissed).’

2 Note in passing that the contrast between (9a) and (9b), for instance, cannot be captured in terms of “repair-by-ellipsis” strategies (see, among many others, Ross (1969), Chomsky (1973), Chung, Ladusaw and McCloskey (1995), Lasnik (2001, 2008), Merchant (2001), Fox and Lasnik (2003), Lasnik and Park (2003), van Craenenbroeck and den Dikken (2006)). First of all, for Tanaka’s (2011) argument to go through, the incompatibility of why and an infinitive clause should not be repaired by ellipsis. Furthermore, examples like (i) (repeated from (7b)), where ellipsis of an infinitive IP is clearly involved, indicate that why cannot be a sluicing remnant. If the incompatibility of why and an infinitive clause can somehow be circumvented by eliding an infinitive IP, the sentence should be grammatical with why as the sluicing remnant.

(i) Bob knows {how/when/where/how long/*why} to crane his neck, but I don’t know {how/when/where/how long/*why}. (Ross (1969: 271))

It then follows that there is no way to repair the ungrammaticality of (9b, d) by ellipsis.
The availability of ACS in these languages poses a further problem for Tanaka’s (2011) analysis. First, German generally lacks wh-infinitives (see Tappe (1984), Müller (1999), Haider (2010)). Importantly for our purpose, the German counterpart of (5a), repeated as (11a), is just ungrammatical, as shown in (11b).

(11) a. John kissed someone without knowing who to kiss.
   b. *Hans küßte jemanden, ohne zu wissen, wen zu küssen.

‘Hans kissed someone without knowing who to kiss.’

Hence, it is not possible to assume that German ACS in (10a) is derived from (11b).

As for Russian, it allows wh-infinitives as in (12a). Notice, however, that the infinitive-marker is a part of verbal inflection, so that the English-type to-stranding VP-ellipsis is not possible. What is possible is to elide the whole infinitive verb, as in (12b).³

(12) a. Ivan znaet kogo pozeloval’, a Sergei ne znaet kogo pozeloval’.
   b. ??Ivan znaet kogo pozeloval’, a Sergei ne znaet kogo ∆.

‘(lit.) Ivan knows who to kiss, but Sergei doesn’t know who to kiss.’

‘(lit.) Ivan knows who to kiss, but Sergei doesn’t know who ∆.’

These observations suggest that no derivational source containing a wh-infinitive is available for (10b) no matter how ellipsis/omission works for the relevant structural configurations in Russian.⁴ Hence, the German and Russian facts observed so far indicate that the analysis crucially relying on

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³ The ‘??’ status on (12b) reflects the judgment by one of my informants, who reports that the example gets degraded if the whole infinitival verb is elided. Importantly, this informant finds the ACS examples in (10b) grammatical. This further poses a question to the idea that a wh-infinitive is involved in the derivation of ACS.

⁴ An anonymous EL reviewer asks how ‘why’ in Russian behaves in wh-infinitives and ACS. In fact, Russian has two wh-phrases that can be translated as ‘why,’ namely
wh-infinitives and VP-ellipsis cannot be extended to these languages, either.

On the other hand, the observations made so far support Yoshida’s (2010) claim that what is elided is a finite IP. First, the fact that why can appear in ACS readily follows if what is elided is a finite IP just like regular sluicing, since a finite clause can host ‘why,’ unlike an infinitive. Second, the issues concerning VP-ellipsis in German and Russian disappear if the derivational sources of German and Russian ACS contain a finite IP.

In the rest of this section, however, I point out a problem with Yoshida’s (2010) analysis, based on a set of data concerning voice-mismatches in ACS. Before presenting the crucial data, I introduce some background on voice-mismatches under ellipsis. It has been observed that VP-ellipsis allows voice-mismatches between the elided VP and its antecedent, while sluicing does not (see Merchant (2007, 2008, 2010) and references cited therein). Some concrete examples of VP-ellipsis are given in (13) and those of sluicing are given in (14), adapted from Merchant (2010).

(13) a. The janitor must remove the trash whenever it is apparent that it should be ∆. (= removed)

b. The system can be used by anyone who wants to ∆. (= use it)

As shown in (i), zachem is compatible with wh-infinitives while pochem is not.

(i) Ja ne znaju zachem/*pochem uxdit’.
I Neg know why why to.leave
‘(lit.) I don’t know why to leave.’

This fact is consistent with Stepanov and Tsai’s (2008) observations that pochem corresponds to why in English while zachem patterns with other wh-phrases (for instance, pochem but not zachem induces the inner island effects; see Stepanov and Tsai (2008) for details). As for ACS, zachem but not pochem can appear in ACS, as shown in (ii). Although this observation seems to support Tanaka’s (2011) idea, my informant did note to me “that even with zachem, the elided part can only be a full clause.” Hence, the cause of the contrast in (ii) may be different from the one in (i).

(ii) Ivan poceloval Mariju ne znaja zachem/*pochem ∆.
Ivan kissed Maria Neg knowing why why
‘(lit.) Ivan kissed Maria without knowing why ∆.’

Another reviewer wonders how chto, another Russian expression asking for reason, behaves in the relevant configurations. The expression chto in fact corresponds to ‘what’ with Accusative Case, for instance nani-o ‘what-Acc’ in Japanese, which can also be used for asking reasons in certain contexts (see Kurafuji (1996), Ochi (1999), Nakao and Obata (2009), and Iida (2011), among others). Although it is an interesting question, a detailed examination of the behavior of chto is beyond the scope of the current paper. I hope to return these issues on another occasion.
(14)  a. *Someone murdered Joe, but they don’t know who by $\Delta$. (= he was killed)
       b. *Joe was murdered, but they don’t know who $\Delta$. (= murdered him)

Merchant (2007, 2008, 2010) proposes an analysis of the difference between (13) and (14), maintaining the idea that the same operation (namely PF-deletion; see Sag (1976), Merchant (2001), Fox and Lasnik (2003), among others) is involved in both kinds of ellipsis. First, following the works including Kratzer (1996) and Collins (2005), he posits a functional head Voice, which syntactically encodes the voice properties of a clause in terms of features, and assigns the following structures to an active sentence in (15a) and a passive sentence in (15b):5

(15)  a. Someone murdered Joe.  b. Joe was murdered.

<table>
<thead>
<tr>
<th>Active</th>
<th>Passive</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP</td>
<td>IP</td>
</tr>
<tr>
<td>someone; I⁰ VoiceP</td>
<td>Joe; was VoiceP</td>
</tr>
<tr>
<td>Voice⁰</td>
<td>vP</td>
</tr>
<tr>
<td>t₁ murdered Joe</td>
<td>Arg murdered t₁</td>
</tr>
</tbody>
</table>

Notice that in (15) the required mutual entailment relation holds between the two IPs just like it holds between the two vPs, so that the purely semantic identity approach cannot capture the difference found in (13) and (14). Then, admitting the necessity of syntactic identity in ellipsis licensing, Merchant explains the difference as follows: The vP of an active clause counts as identical to that of the corresponding passive form because their voice properties are syntactically encoded outside of the vP, and hence voice-mismatched VP-ellipsis is possible; on the other hand, the IP of an active clause does not count as identical to that of the corresponding passive form because their VoicePs have different feature specifications, and hence voice-mismatched sluicing is impossible.

5 In Merchant (2007, 2008), the voice properties are encoded on v, while in Merchant (2010) they are encoded on Voice, which is independent from v. I adopt the latter only for the purpose of illustration. Arg in (15b) stands for an implicit argument.
Recall now that under Yoshida’s (2010) analysis ellipsis licensing in ACS can ignore syntactic differences such as IP/VP distinctions, as we have seen in (4), because semantic identity is the sole licensing requirement for ACS. It is then predicted that ACS allows voice-mismatches because its ellipsis licensing should also be able to ignore the syntactic difference in question, namely different feature specifications of VoicePs. In the rest of this section, I show that this prediction is not borne out, again based on the data from German and Russian, which have richer Case systems, and therefore voice-mismatches are detectable more easily.

The crucial examples are given in (16). The examples in (16a, b) are from German, and those in (16c, d) are from Russian. The examples in (16a, c) involve a pair of an active-antecedent and a passive-sluice, and the ones in (16b, d) involve a pair of a passive-antecedent and an active-sluice.


   ‘(lit.) Hans kissed someone without knowing whoNOM (was kissed by him).’

b. Hans wurde von jemandem geküßt, ohne zu wissen, wer *(ihm küßte). [G]

   ‘(lit.) Hans was kissed by someone without knowing whoNOM (kissed him).’

c. Ivan poceloval kogo-to ne znaja kto *(byl neznajom pogalovan im). [R]

   ‘(lit.) Ivan kissed someone without knowing whoNOM (kissed him).’

d. Ivan byl pocelovan kem-to ne znaja kto *(poceloval ego). [R]

   ‘(lit.) Ivan was kissed by someone without knowing whoNOM (kissed him).’

These examples are grammatical without ellipsis, but once ellipsis applies,
they become ungrammatical. That is, voice-mismatches are not allowed under ACS.

Let us take (16a) as representative. Yoshida’s (2010) analysis would assign the semantic representations in (17b, c) to the antecedent VP and the elided IP in (17a), respectively (English words and structures are used for the purpose of illustration).

\[
\begin{align*}
(17) & \quad \text{a. } \text{Hans} & [\text{VP}_{\text{i}} [\text{VPA}_t \text{ki}} & \text{ssed someone}] \text{[without … who}_j [\text{IPE}_t \text{was kicked by him}]]] \\
& \quad \text{b. } \text{VP}_A = F-\text{clo(VP}_A) = \exists x. \text{Hans kissed } x \\
& \quad \text{c. } \text{IP}_E = F-\text{clo(IP}_E) = \exists x. \text{x was kissed by Hans}
\end{align*}
\]

Since the mutual entailment relation holds just as in the case of (4), ellipsis of the IP should be licensed. Hence, the fact that ACS disallows voice-mismatches constitutes a serious problem for the purely semantic identity approach. The intolerance of voice-mismatches shown in (16), however, can straightforwardly be captured on a par with the case of (14), if syntactic identity is required even in ACS so that the elided IP should take another, voice-matched IP as its antecedent.

4. Proposal

Recapitulating the discussions so far, we have reached the following situation: ACS patterns with regular sluicing with respect to cases involving why and voice-mismatches, so that the elided IP should take another IP, rather than a VP within a wh-infinitive, as its antecedent, while an infinite regress should somehow be circumvented. As a first step towards a solution to this puzzle, I propose that in ACS the adjunct containing the ellipsis site can be introduced to the structure in a counter-cyclic way. Put differently, I claim that the adjunct can be attached to the matrix clause via late merger in the sense of Lebeaux (1988, 2009). This is indeed an extension of Fox’s (2002) idea, who employs late merger for more familiar cases of antecedent-contained deletion. For instance, in an example like John saw everyone who Bill did, Fox (2002) proposes that the relative clause is counter-cyclically attached to everyone after the latter undergoes (rightward) QR.

Armed with the idea of late merger of the adjunct containing the ellipsis site, I propose that ellipsis licensing can take place in the course of deriva-

\[6\quad \text{One of my informants reports that (16d) sounds weird even without ellipsis, but nonetheless it is better than the version with ellipsis.} \]
ANTECEDENT-CONTAINED SLUICING AND IDENTITY IN ELLIPSIS

For instance, (1a) can be derived in the manner depicted in (18). At the step in (18a), the matrix IP (= IP\(A\)) and the CP, which takes the IP to be elided (= IP\(E\)) as its complement, have been assembled in parallel, so that the derivational work space contains two separate syntactic objects. Then, the ellipsis of IP\(E\) can be licensed under identity with IP\(A\) at this point. Subsequently, the adjunct PP is constructed so as to embed the CP within it, as in (18b). Finally, as in (18c), the PP indicated by italics is adjoined to the matrix VP counter-cyclically.

Although the output representation in (18c) is equivalent to (1b), this derivation can avoid an infinite regress, because at the point where ellipsis is licensed (namely (18a)) there is no containment relation between the IPs in question. Intolerance of voice-mismatches is also expected since the derivation of ACS involves ellipsis of an IP under identity with another IP on a par with the derivation of regular sluicing.

In the rest of this section I discuss some theoretical implications of the proposed analysis. First, the proposed analysis strongly supports the idea

\[\text{IPA John}_t [\text{VP } t_i \text{ loves someone}] [\text{CP who}_t [\text{IP}_E \text{ he loves } t_j]] \leftarrow \text{Ellipsis licensing}\]

\[\text{[PP without knowing [CP who ...]]} \leftarrow \text{Construction of PP}\]

\[\text{IPA John}_t [\text{VP } [\text{VP } t_i \text{ loves someone}] [\text{PP without ...}]] \leftarrow \text{Late merger of PP}\]

7 The proposed analysis is immune from the debate between copying and deletion. For a deletion analysis, it suffices to say that the constituent which is ellipsis-licensed receives actual deletion at PF. On the other hand, for a copying analysis, the antecedent IP gets copied in (18a) without its phonetic contents (see, for instance, Oku (1998) for the idea that copying is an instance of Merge without phonetic content). Hence, I remain agnostic about whether ellipsis should be conceived as copying or deletion.

8 An anonymous EL reviewer wonders whether the proposed analysis is consistent with the model where Spell-out applies cyclically, because the relevant instance of late merger appears “too late” if the complement of v, namely VP, has been already Spelled-out at the point in (18c) so that there is no VP available to which the adjunct PP is attached. Following Yoshida (2010), however, I have suppressed the distinction between vP and VP (see footnote 1) in this paper. In fact, the constituent to which the adjunct PP is attached should be the one containing the base-generation site of the subject, namely vP: Otherwise “VP” cannot stand in a mutual entailment relation with IP, which clearly contains the subject. Hence, the issue concerning cyclic Spell-out ceases to be a problem.

9 Hiroko Kimura (p.c.) asks whether the proposed analysis in terms of late merger can be extended to the construction called syntactic amalgamation (Lakoff (1974); see Guimarães (2004) for more recent analysis), exemplified by (i). Guimarães (2004) discusses a potential analysis of (i), where clausal ellipsis (and ellipsis of beer within the
that ellipsis can be licensed derivationally. Recall that irrespective of
whether the adjunct has undergone late merger, the derivation of (1a) yields
an output representation like (1b)/(18c), which involves a containment rela-
tion between the elided IP and its antecedent IP. Suppose, contrary to what
I have proposed in this paper, that ellipsis licensing is computed solely on
the basis of output representations, without inspecting their narrow syntactic
derivational histories. Then, grammatical examples of ACS like (1a) could
never be derived due to an infinite regress, contrary to fact. Hence, it fol-
lows that ellipsis licensing should be able to make use of the information
regarding derivations, in particular the information that there exists a point
in the derivation where the two IPs do not stand in a containment rela-
tion. In most cases, derivational licensing and representational licensing do
not make much difference. ACS, construed under the proposed analysis, is
unique in this respect because only derivational licensing can yield a desired
result.

It should be noted that I am not claiming that all instances of ellipsis are
solely licensed derivationally. Daiko Takahashi (p.c.) points out that the
following paradigm (cf. Langacker (1969)) can be a potential problem for
such a view.

(19) a. *John didn’t [VP ∆] though Mary [VP smoked].
    b. John didn’t [VP smoke] though Mary did [VP ∆].
    c. Though Mary [VP smoked], John didn’t [VP ∆].
    d. Though Mary did [VP ∆], John didn’t smoke.

wh-phrase) applies to (iib) and the resultant sentence is inserted into (iia) as a parentheti-
cal expression.

(i) Homer drank I don’t remember how many beers at the party.
    a. Homer drank beers at the party
    b. I don’t remember [[how many beers] [Homer drank t, at the party]]
It seems possible to analyze this construction in terms of late merger. For instance, ellip-
sis of IP_e can be derivationally licensed at the step in (iiiia), where the matrix IP and
the CP_1 have been assembled in parallel. Then, after CP_2 is constructed as in (iib), the
CP_2 undergoes late merger to the matrix IP as in (iic).

(iii) a. [IPA Homer drank beers at the party]
    [CP1 [how many beers] [IP_e Homer drank t, at the party]]
    b. [CP2 I don’t remember [CP1 [how many beers] …]]
    c. [IPA Homer drank [CP2 I don’t remember [CP1 [how many beers] …]]] beers
    at the party]
Several aspects of the derivation sketched in (iii) should be clarified (for instance, ellipsis
of beers and the position to which CP_2 undergoes late merger), but for reasons of space, I
leave detailed investigations of this construction for future research.
The problem arises from the fact that the derivation of each example in (19) can contain a step where the matrix IP and the IP within the adjunct clause have been assembled in parallel, as shown in (20) (irrelevant details are omitted).

(20) \[ \text{IP John didn’t [VP smoke]} \]
\[ \text{IP Mary I0 [VP smoke]} \]

If ellipsis of VP can be licensed at this point, without making use of the information concerning the output representations, namely linear ordering of the two IPs, the contrast between (19a) and (19b–d) cannot be easily accommodated. The paradigm thus suggests that ellipsis licensing requires some representational information as well as derivational information.

The second implication has to do with the distribution of late merger in grammar. Virtually all the works on late merger have examined the cases where late merger targets a moved element (for instance, Lebeaux’s (1988) original analysis of Condition C obviation effects under A’-movement (see also Chomsky (1993) and Lebeaux (1998, 2009)) and Fox’s (2002) solution to a conflict between the Copy Theory of Movement and antecedent-containment resolution by QR). This is natural because in many cases applying late merger to a non-moving element (or a lower copy of movement) does not help circumvent relevant violations/problems. Nonetheless, nothing in principle blocks late merger from applying to a non-moving element. Since the proposed analysis of ACS crucially makes use of late merger to a non-moving element (namely the matrix IP in (18c)), it fills in the theoretical gap regarding late merger.\(^{10}\)

\(^{10}\) One remaining problem has to do with another observation by Yoshida (2010). He points out that negation and modals are not interpreted in the ellipsis site of ACS. Let us consider the examples in (i), based on Yoshida (2010: 350–351). Crucially, the interpretation containing the modal must is available for regular sluicing in (ib) but not for ACS in (ia).

(i) a. You must select a color without knowing which one \(\Delta\).
   \[= \text{ … without knowing which one } \{\text{you select/you must select}\}.\]
   
   b. You must select a color but I can’t tell you which one \(\Delta\).
   \[= \text{ … I can’t tell you which one } \{\text{you select/you must select}\}.\]

According to Yoshida (2010), this observation can be captured by his analysis because the antecedent is the matrix VP, which excludes the information regarding negation and modals, so that the elided IP should also lack such information. The proposed analysis, however, fails to capture this observation in a straightforward way because we expect that ACS patterns with regular sluicing. Meanwhile, Yoshida (2010: 355) notes that the interpretation of tense in the elided IP is problematic for his analysis, because tense is also excluded from the alleged antecedent, namely VP. On the other hand, the proposed anal-
5. Concluding Remarks

In this paper I have provided novel observations on ACS based on data from English, German, and Russian. It has been first pointed out that these observations indicate that what is elided in ACS is a finite clause, just like regular sluicing, arguing for Yoshida’s (2010) analysis based on purely semantic identity. Meanwhile, it has also been pointed out that the fact that voice-mismatches are disallowed even under ACS poses a serious problem to the analysis in terms of purely semantic identity. Then I have proposed an alternative analysis that employs late merger and a particular view to ellipsis licensing, showing that ACS no longer constitutes a problem for the syntactic identity approach.

There are numerous other issues concerning the nature of identity in ellipsis in general. The most direct empirical motivation of the proposed analysis that tries to maintain syntactic identity is the fact that voice-mismatches are not allowed even under ACS. As anonymous EL reviewers correctly point out, however, this is not consistent with one of Nakamura’s (this volume) conclusions. Nakamura (this volume) provides numerous examples that are judged grammatical despite voice-mismatches, and argues that ellipsis is generally insensitive to such mismatches and that the ungrammatical instances involving voice-mismatches are ruled out by certain extra-syntactic factors such as Kertz’s (2008, 2010) condition on discourse formation.

Meanwhile, Merchant (2007) offers a way of avoiding such interfering factors. In particular, he points out that it is crucial to compare the examples involving ellipsis with their putative non-elliptic counterparts in order to examine whether general principles of discourse formation do affect the acceptability of the elliptic examples. Following this methodological guideline, I have compared the elliptic versions with their non-elliptic counterparts in the crucial examples in (16), and taken the contrast between them as the one to be explained. Then, it seems necessary to examine if such a contrast exists in the examples discussed in Nakamura (this volume). Analysis is free from this problem, since the antecedent is IP, which does include the information regarding tense. It should be noted that Tanaka’s (2011) analysis is well-designed in this respect. Under his analysis, what is elided is a VP of a wh-infinitive, so that the exclusion of the interpretation regarding negation and modals is expected. Furthermore, although he does not discuss it, the availability of the interpretation regarding tense might be accommodated because the clause to which VP-ellipsis applies retains its infinitive T (though it is not lexically realized as to).
other thing we can do is to explore alternative syntactic analyses of the grammatical examples with voice-mismatches. It may turn out that those examples are structurally ambiguous and one syntactic parse can be the one that is predicted to be grammatical by analyses arguing for syntactic identity (see, for instance, Merchant (2008: 175, fn. 4) for this line of idea). Since these reevaluations of the examples discussed in Nakamura (this volume) are out of the scope of the current paper, I leave it for future research.

An anonymous EL reviewer also asks to what extent the proposed analysis employing late merger can be extended to the grammatical examples that appear to violate strict syntactic identity. Such cases should involve so-called vehicle-change effects (Fiengo and May (1994)), cleft-based analyses of sluicing in various languages, where a presupposition CP takes an IP as its antecedent (see, among many others, Merchant (1998), van Craenenbroeck (2010a) for overview; Potsdam (2007) for Malagasy; van Craenenbroeck (2010b) for Dutch; Takita (2010: Ch. 5) and references cited therein for Japanese), and so on. Although it is not easy to directly extend the analysis employing late merger to the cases mentioned above, this paper attempted to show that seemingly supportive arguments for semantic identity can be treated under syntactic identity. More generally, the question seems to boil down to: Which aspects of syntactic properties are relevant in ellipsis? (see Chung (2013) and Takita (2013) for recent attempts to this question.) I believe that exploring this question will surely contribute to a deeper understanding of the nature of identity in ellipsis.

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