Rethinking the identity conditions in ellipsis

Jason Merchant
University of Chicago
merchant@uchicago.edu

1 Why study ellipsis?

Ellipsis is the ultimate challenge for sound-meaning correspondence: *significatio ex nihilo*

Bühler 1934:155, for example, called ellipsis the ‘alte crux der Sprachwissenschaftler’ (‘the linguists’ old cross’)

Sütterlin 1907:9 maintained that ‘nach unserer heutigen Betrachtungsweise [liegt] eine wirkliche Auslassung viel seltener vor als nach der Auffassung der früheren Zeit’ (‘on contemporary views, a true omission occurs much less frequently than was earlier believed’).

Jespersen 1924:306 ‘An old-fashioned grammarian will feel a certain repugnance to this theory of one-member sentences, and will be inclined to explain them by his panacea, ellipsis.’

*Wovon man nicht zu sprechen braucht, darüber kann man schweigen* (with apologies to Wittgenstein)

0 Do we need unpronounced syntactic structures?

(1) Yes.

1.1 What kind of unpronounced syntactic structure? Unpronounced.

1.1.1 What is it?

Noun: ellipsis [from Gk. ἔλλειψις, n. of action from ἔλλειπειν ‘to come short, be lacking’]
Verb: elide [ad. L. ēlīd-ere ‘to crush out’, f. ē out + lædere ‘to dash’]

(2) John can play something, but I don’t know what. sluicing
(3) John can play the guitar and Mary can, too.
    VP-ellipsis
(4) John can play five instruments, and Mary can play six.
    NP-ellipsis
(5) John can play the guitar, {and Mary, too/and Mary as well/ but not Mary}.
    stripping/Bare Argument Ellipsis
(6) a. Mary can play the guitar better than John. Comparative ellipsis
b. Greek clausal comparatives
   I Maria pezi kithara kalitera apoti o Giannis.
   the M.NOM plays guitar better than CLAUSAL the Giannis.NOM
   ‘Mary plays the guitar better than John does.’
(7) a. John can play the guitar, and Mary the violin. gapping
b. John can play the guitar better than Mary the violin.
(8) Q: What can John play? fragment answers
   A: The guitar.

In each case, the second clause can be understood as in (9)-(15):

(9) John can play something, but I don’t know what John can play.
(10) John can play the guitar and Mary can play the guitar, too.
(11) John can play five instruments, and Mary can play six instruments.
(12) John can play the guitar, and Mary can play the guitar, too.
(13) a. Mary can play the guitar better than John can play the guitar.
b. Greek
   I Maria pezi kithara kalitera apoti pezi o Giannis
   the M.NOM plays guitar better than CLAUSAL plays the G.NOM
   ‘Mary plays the guitar better than John plays guitar.’
(14) John can play the guitar and Mary can play the violin.
(15) A: John can play the guitar.

1.2 What isn’t it?


(16) Special registers: telegrams, titles, headlines, weather reports, recipes, instructions (‘If no paper, turn wheel’)
(17) Short directives: Left! Higher! Scalpel!
(18) Labels: (cf. Bühler’s ‘dingfest angeheftete Namen’, Bühler 1934: sec. 10)
   a. Campbell Soup.
   b. Starbucks.
      ausstößt, so will er, daß der Allgemeinbegriff ‘Diebe’ mit einer von ihm in
      dem Augenblick gemachten Wahrnehmung in Beziehung gesetzt werde.”)
   d. Fire!
   e. And now: the first act of the night: The Rolling Stones!
   f. To kill a Mockingbird
   g. Der Zauberberg
   h. Next exit: Chicago.
(19) Expressive exclamations: Wonderful! Nonsense! Fate! For Pete’s sake!
(20) Utterance idioms (Kleins "elliptische Formeln"):
   a. Up yours.
   b. ‘Gewitter im Mai – April vorbei’ (lit. ‘storms in May – April over’)
c. 'Wenn schon, denn schon' (lit. 'if already, then already'; roughly, 'in for a penny, in for a pound')

d. Dutch ‘Met Jason’ (‘with Jason’) as a telephone greeting

(21) Other nonsentential partially fixed material expressions
a. So much for the light of reason.
b. Off with his head!
c. A good talker, your friend Bill.
d. Books open to page 15!
e. How about a cookie?
f. What, me worry?
g. Hey, Phil!
h. Vikings 27, Bears 3

(22) Some kinds of fragments (e.g. Schlangen 2003’s ‘explanation’ subtype)
a. Mary: Try it. It’s good for you.
b. Peter: Why?
c. Mary: Lots of vitamins.

1.2 Approaches to the syntax of ellipsis

(23) Is there unpronounced syntactic structure in ellipsis sites?

<table>
<thead>
<tr>
<th></th>
<th>no</th>
<th>yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Nonstructural approaches</td>
<td></td>
<td>b. Structural approaches</td>
</tr>
</tbody>
</table>

Is the nonpronunciation due to lexically null elements?

<table>
<thead>
<tr>
<th></th>
<th>yes</th>
<th>no</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. LF-copy, null anaphora</td>
<td></td>
<td>ii. PF-‘deletion’</td>
</tr>
</tbody>
</table>


(24) … I don’t VP

\[
\begin{array}{c}
V \\
S \\
\text{know} \\
\text{what}
\end{array}
\]

(25) Syntax: \([S \text{ what}^{\text{ORPH}}]^{\text{IL}}\) Semantics: Q[F(what)]

2.2 Structural approaches


(26) a. I don’t know \([CP \text{ what } [IP \text{ e }]]\) (Spell-Out/S-structure)
b. I don’t know $[\text{CP what}_4 \text{ [TP } e_1 e_2 e_3 t_4]]$

(27) I don’t know $[\text{CP what}_4 \text{ [IP John can play } t_4]]$ (LF/interpreted structure)


(28) I don’t know CP

\[
\begin{array}{c}
\text{what} \\
\text{C} \\
\text{< TP >} \\
\text{John can play} \\
\end{array}
\]

Likewise for fragment answers: (Brunetti 2003, Merchant 2004)

(29) Q: What can John play?

A: FP

\[
\begin{array}{c}
\text{the guitar} \\
\text{F} \\
\text{< TP >} \\
\text{John can play} \\
\end{array}
\]

Main earlier claims

- Ellipsis is conditioned by semantic, not structural identity
- Ellipsis (at least sluicing, and VP-ellipsis in English) is the result of deletion at PF — the syntax internal to the ellipsis site is regulated by the same principles as non-elliptical syntax
- These two claims are not incompatible: supposing a specific, local semantic requirement on the deletion site can link traditional ‘licensing’ and ‘identification’ concerns

2 The question: Over what kind of linguistic representation are the identity conditions on ellipsis stated?

(30) 1. syntactic (generally LF)
      2. semantic (truth conditions)
      3. something in between?

Comparing representations

Granularity:

(31) Fine $\leftarrow$ LF$\rightarrow$ Coarse

$\uparrow$ Truth conditions

ellipsis?
3 How abstract is syntactic structure?

(32) All higher-order (phrasal) structures are projected from and contain only elements that are pronounced
     Corollary: There are no phrases or heads that consist solely of the empty string

     WYSIWYG theory (What you see is what you get): Ginzburg and Sag 2000, Culicover and Jackendoff 2005, much work in categorial grammars, some work in Autolexical

(33) Some phrases and heads have no pronunciation.
     Corollary: Their presence can only be detected indirectly.

4 Voice mismatches under ellipsis

4.1 English

   • Impossible in sluicing

(34) *Joe was murdered, but we don’t know who. <murdered Joe>

(35) *Someone murdered Joe, but we don’t know who by. <Joe was murdered>

   • Possible with VP-ellipsis

Passive antecedent, active ellipsis (most from Kehler 2002:53)

(36) a. This problem was to have been looked into, but obviously nobody did. <look into this problem>
     b. In March, four fireworks manufacturers asked that the decision be reversed, and on Monday the ICC did. <reverse the decision>. (Dalrymple 1991, cited by Kehler)
     c. It can certainly be argued, as conservatives have, that simply giving money to poor people doesn’t solve the problem. (letters to the editor, New York Times, Sunday, May 28, 2006)

Active antecedent, passive ellipsis

(37) a. Actually, I have implemented it [=a computer system] with a manager, but it doesn’t have to be. <implemented with a manager>
     b. Steve asked me to send the set by courier through my company insured, and it was. <sent by courier through my company insured>
     c. The janitor should remove the trash whenever it is apparent that it needs to be <removed>.

4.2 Two hypotheses about the identity relation between an elided phrase and its antecedent

(38) Max \[ \text{VP, A ate a rutabaga} \]. Sam did \[ \text{VP, E} \], too.

1. It’s semantic: the elided phrase has to mean the same thing as its antecedent
   VP_A must entail VP_E  (or ‘mutually entail’, or ‘mutually entail modulo focus-
   and existential closure’)


   Rooth’s hypothesis is as follows:
   “ellipsis should be possible exactly in configurations where
   1. a verb phrase can be syntactically reconstructed, and
   2. some phrase identical with or dominating the reconstructed phrase can be
   related by the ~ relation to some phrase identical with or dominating the
   reconstruction antecedent ... .” Rooth 1992:18

   XP_A ~ XP_E, in Rooth’s terms.

(40)  **R-Focus condition on VP ellipsis** (Roothian version)
   A VP α in XP_E can be deleted only if there is an XP_A, where [XP_A] either is or
   implies an element of [XP_E].

   Same in Schwarzschild’s (1999) theory of focus, based on his definition of GIVEN.

(41)  **GIVENness**  (Schwarzschild 1999)
   1. If a constituent α is not F-marked, α must be GIVEN.
   2. An utterance U counts as GIVEN iff U has a salient antecedent A and, modulo
      θ-type shifting, A entails the F-closure of U.

(42)  **F-closure** (slightly simplified)
   The F-closure of α is the result of replacing F-marked parts of α with θ-bound
   variables, modulo θ-type shifting.

(43)  **S-Focus condition on VP ellipsis** (Schwarzchildian version)
   An VP α can be deleted only if α is or is contained in a constituent that is GIVEN.

(44)  a. Abby sang because [Ben]_F did.
The R-Focus condition requires that \([\mathcal{L} IP_1]^{\mathcal{F}} \subseteq [\mathcal{L} IP_2]^{\mathcal{F}}\), that is, that \(\text{sing}(a) \in \{\text{sing}(x) : x \in D_e\}\).

The S-Focus condition is also satisfied: the deleted VP is given since the antecedent \(Abby\ sang\) entails the \(\exists\)-type shifted deleted VP: \(\exists x.\text{sing}(x)\). Equivalently, we could compare the containing IPs — again, \(Abby\ sang\) entails the result of replacing the \(F\)-marked \([Ben]_F\) in \(IP_2\) by an \(\exists\)-bound variable: \(\exists x.\text{sing}(x)\).

**Pronouns**

(45) a. Abby saw him after \([Ben]_F\ did\).

b. Abby sang because \([Ben]_F\ did\ [VP\ sing].

The LF in (45b) will meet the R-Focus condition iff \([\mathcal{L} Abby\ saw\ x_2]^{\mathcal{F}} \subseteq [\mathcal{L} [Ben]_F\ saw\ x_2]^{\mathcal{F}}\), that is, if \(\lambda g.\text{see}(a, g(x_2)) \in \{\lambda g.\text{see}(y, g(x_2)) : y \in D_e\}\). It meets the S-Focus condition iff \(IP_1\) entails \(\exists x.\text{see}(x, g(x_2))\); this will only hold if \(\text{see}(\text{abby}, g(x_2))\) is true.

Why a notion of ‘deletion/ellipsis is okay as long as it’s recoverable/redundant’ is not enough (see especially also Winkler 2005):

**Deaccenting ≠ Deletion** (see especially Winkler 1997)

(46) a. Abby was reading the book while \(\text{BEN was reading}\).

b. Abby ate a sandwich after \(\text{BEN ate}\).

c. Abby left the party because \(BEN left\).

d. Abby sang her hymn louder than \(\text{BEN sang}\).

‘Implicational bridging’

(47) a. Abby called Chuck an idiot after \(\text{BEN insulted him}\).

b. Abby ate a sandwich after \(\text{BEN had lunch}\).

c. Abby left the party because \(\text{BEN took off}\).

(48) \([\mathcal{L} Abby\ was\ reading\ the\ book]^{\mathcal{F}} \rightarrow [\mathcal{L} Abby\ was\ reading]^{\mathcal{F}}\) and \([\mathcal{L} Abby\ was\ reading]^{\mathcal{F}} \subseteq [\mathcal{L} [\text{BEN}_F\ was\ reading]^{\mathcal{F}}\).

Cf.

(49) \(\text{Abby was reading the book}\) entails \(\exists x. x\ was\ reading\)

(50) a. # Abby was reading the book while \(\text{BEN was coughing}\).
Ellipsis doesn’t allow these possibilities: the following examples are unambiguous

4.2.1 The revised Focus condition and e-Givenness

4.2.1.1 VP-ellipsis


<table>
<thead>
<tr>
<th><strong>(54)</strong> e-GIVENNESS</th>
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<tbody>
<tr>
<td>An expression E counts as e-GIVEN iff E has a salient antecedent A and, modulo $\exists$-type shifting,</td>
</tr>
<tr>
<td>i. A entails F-clo(E), and</td>
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<td>ii. E entails F-clo(A)</td>
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</table>

(55) Focus condition on VP ellipsis

An VP $\alpha$ can be deleted only if $\alpha$ is e-GIVEN.

<table>
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<td>a. Abby was reading the book while BEN was.</td>
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<td>b. Abby ate a sandwich after BEN did.</td>
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<tr>
<td>c. Abby left the party because BEN did.</td>
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<td>a. Abby called Chuck an idiot after BEN did.</td>
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<td>b. Abby ate a sandwich after BEN did.</td>
</tr>
<tr>
<td>c. Abby left the party because BEN did.</td>
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Let $\exists$-clo($\alpha$) stand for the result of applying $\exists$-type shifting to $\alpha$:

(59) $\exists$-clo(VP$_\lambda$) = F-clo(VP$_\lambda$) = $\exists$x.x called Chuck an idiot

Checking (58a):

(60) $\exists$-clo(VP$_E$) = F-clo(VP$_E$) = $\exists$x.x called Chuck an idiot
Checking (58b):
(61)  $$\exists\text{-clo(}VP_E\text{)} = F\text{-clo(}VP_E\text{)} = \exists x. x \text{ insulted Chuck}$$

$$\exists\text{-clo(}VP_E\text{)}$$ does not entail $$F\text{-clo(}VP_A\text{)}$$, so the VP in (58b) is not e-GIVEN, by (54ii).

**Sluicing**

Focus-alternatives in wh-questions (cf. Romero 1998):
(62)  a.  (know) which P are Q
      b.  (know) how many P are Q
      c.  (know) whether any P are Q

(63)  **GIVENness**  (Schwarzschild to appear)
An utterance U counts as GIVEN iff U has a salient antecedent A and, modulo $$\exists$$-type shifting, A entails the F-closure of U.

(64)  **S-Focus condition on IP ellipsis**  (Schwarzschildian version)
An IP $$\alpha$$ can be deleted only if $$\alpha$$ is or is contained in a constituent that is GIVEN.

(65)  I know how MANY politicians she called an idiot, but I don’t know WHICH (politicians).

(66)  a.  (know) which politicians she called an idiot
      b.  (know) how many politicians she called an idiot
      c.  (know) whether she called any politicians an idiot.

(67)  I know $$\exists Q$$[she called Q-politicians an idiot]

(68)  I know she called some politician an idiot, but I don’t know WHICH.

Not enough:

(69)  * I know how many politicians she called an idiot, but I don’t know WHICH (politicians) [IP she insulted t]

Again, we seem to need an LF isomorphism condition to rule this kind of example out

<table>
<thead>
<tr>
<th>Focus condition on IP ellipsis</th>
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<td>An IP $$\alpha$$ can be deleted only if $$\alpha$$ is e-GIVEN.</td>
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(70)  I know how MANY politicians she called an idiot, but I don’t know WHICH (politicians).

(71)  a.  $$F\text{-clo(IP}_E\text{)} = \exists x. \text{ she called x an idiot}$$
      b.  $$\exists\text{-clo(IP}_A\text{)} = \exists x. \text{ she called x an idiot}$$

(72)  I know she called some politician an idiot, but I don’t know WHICH.
(74)  
a. $\exists$-clo(IP$_A$) = F-clo(IP$_A$) = $\exists$x.she called x an idiot
b. $\exists$-clo(IP$_E$) = F-clo(IP$_E$) = $\exists$x.she called x an idiot

(75)  * I know how many politicians she called an idiot, but I don’t know WHICH (politicians) [in she insulted t]

(76)  
a. F-clo(IP$_A$) = $\exists$x.she called x an idiot
b. $\exists$-clo(IP$_E$) = $\exists$x.she insulted x

Since (76a) gives rise to entailments which (76b) does not (since she insulted x does not entail she called x an idiot), IP$_E$ is not e-GIVEN under (54ii). Therefore, by (70), IP$_E$ cannot be deleted.

4.2.2  ‘Vehicle change’ in VP-ellipsis and sluicing

Vehicle change = The equivalence between (potentially complex) R-expressions and pronouns under ellipsis, both in sluicing and in VP-ellipsis, as in (77). (Fiengo & May 1994)

(77)  
a. They arrested [the guy who lives over the garage]$_3$, though he$_3$ thought they wouldn’t.
b. They arrested Alex$_3$, though he$_3$ thought they wouldn’t.

(78)  They arrested Alex$_3$, though he$_3$ didn’t know why.

Principle C violation:

(79)  
a. * He$_3$ thought they wouldn’t arrest [the guy who lives over the garage]$_3$.
b. * He$_3$ thought they wouldn’t arrest Alex$_3$.
c. * He$_3$ didn’t know why they arrested Alex$_3$.

Fiengo and May’s 1994 solution: ‘vehicle change’ which allows the value of the pronominal feature associated with nominals to vary within a ‘reconstruction’ (see also Giannakidou and Merchant 1998, Safir 1999.)

• Vehicle change is the name of a problem, not of a solution.

R-expressions in antecedents can license the deletion of pronouns in ellipsis sites.

(80)  
a. * [VP arrest [the guy who lives over the garage]$_3$ ]
   * [VP arrest Alex$_3$ ]
   [VP arrest [him]$_3$ ]

A SOLUTION TO THE ‘VEHICLE CHANGE’ PROBLEM:

(81)  They arrested Alex$_3$, though he$_3$ thought they wouldn’t arrest him$_3$.

This deleted VP satisfies the Focus condition just in case him = Alex since [Alex$_i$]$_g$ = [him$_i$]$_g$, for any g

(82)  
a. $\exists$x.x arrested Alex$_i$
b. $\exists$x.x arrested him$_i$
2. It’s syntactic:

(83) **Syntactic isomorphism condition on ellipsis** (modeled on Fiengo & May 1994)
Let E be a(n LF) phrase marker.
Then, E can be deleted only if there is a(n LF) phrase marker A, A distinct from E, such that A = E.

4.3 Pros of LF isomorphism

(84) Abby was                  VP
    VP
    VP
    V  
    DP
    P  
    PP
    T
    reading
    D
    the
    N
    book
    was
    V
    reading

In (84), VP_A ≠ VP_E, so deletion is not allowed, by the condition (83).

4.4 Cons of semantic identity

4.4.1 Voice mismatches under sluicing

(85) a. *Joe was murdered, but we don’t know who <murdered Joe/him>.
    b. *Joe wurde ermordet, aber wir wissen nicht, wer <ihn ermordete>. [German]
    c. *O Joe skotothike, alla dhen kserume, pjos <ton skotose>. [Greek]

(86) a. *Someone murdered Joe, but we don’t know who by <Joe was murdered>.
    b. *Jemand hat Joe ermordet, aber wir wissen nicht, von wem <er ermordet wurde>.
    c. *Kapjos skotose ton Joe, alla dhen kserume, apo pjon <skotothike>.

4.4.2 Chung 2005’s implicit P-marked arguments

(87) **CHUNG’S GENERALIZATION:**
P-stranding inside an ellipsis site is possible only if P has a correlate

(88) a. Bill is upset. Guess about what <he’s upset>.
    b. Bill is upset. *Guess what <he’s upset about>.
    c. Bill is upset about something. Guess what <he’s upset about>.

(89) a. They’re jealous, but it’s unclear of who.
    b. Joe was murdered, but we don’t know by who.
c. Last night he was very afraid, but he couldn’t tell us of what.
d. Mary was flirting, but they wouldn’t say with who.
e. We’re donating our car, but it’s unclear to which organization.

(90) a. *They’re jealous, but it’s unclear who(m).
b. *Joe was murdered, but we don’t know who(m).
c. *Last night he was very afraid, but he couldn’t tell us what.
d. *Mary was flirting, but they wouldn’t say who(m).
e. *We’re donating our car, but it’s unclear which organization.

4.4.3 Argument structure alternations

(91) a. * She served the soup, but I don’t know who(m).  (< Chung et al. 1995)
b. (cf. She served the soup, but I don’t know to whom.)
c. She served the students, but I don’t know what.

(92) a. \textit{serve}_1: \text{server} \prec \text{meal} (\text{diner}) >
\text{DP}\text{PP}_{\text{to}}
\text{(Levin and Rappaport 1988)}
b. \textit{serve}_2: \text{server} \prec \text{diner} (\text{meal}) >
\text{DP}\text{DP}

(93) a. * She served\textsubscript{1} the meal, but I don’t know WHO\textsubscript{1} she served\textsubscript{2} t\textsubscript{i} the meal.
b. cf. She served\textsubscript{2} someone the meal, but I don’t know who\textsubscript{1} she served\textsubscript{2} t\textsubscript{i} the meal.

Semantic identity may work for verbs like \textit{serve, throw} (which entail only two arguments), but won’t for verbs like \textit{send, give, bring} (which entail three; Levin 2004):

(94) They sent the package--find out who to!
*They sent the package--find out who!

Greek causative–inchoatives:

(95) a. \textit{Eklisan ena dhromo}.
\text{closed.3p a.ACC road.ACC}
‘They closed a road.’
b. \textit{Enas dhromos eklise}.
\text{a.NOM road.NOM closed.3s}
‘A road closed.’

(96) a. \textit{Eklisan ena dhromo, alla dhen ksero pjon <eklisan>}.  
\text{closed.3p a.ACC road.ACC but not \textit{I know which.ACC closed.3p}}
‘They closed a road, but I don’t know which.’
b. *\textit{Eklisan ena dhromo, alla dhen ksero pjos <eklise>}.  
\text{closed.3p a.ACC road.ACC but not \textit{I know which.NOM closed3s}}
(‘They closed a road, but I don’t know which.’)

Do all these follow from something outside the brief of the theory of ellipsis? Do such switches violate more general, presumably discourse level, coherence requirements? As always, it is vital to compare the nonelliptical, \textit{deaccented} variants of all cases.

\textbf{Argument structure alternations}
They sent the package--find out WHO they sent it to!

Joe was murdered, but we don’t know WHO murdered Joe.

Someone murdered Joe, but we don’t know WHO Joe was murdered by.

Mary was flirting, but they wouldn’t say with WHO she was flirting with.

Eklisan ena dhromo, alla dhen ksero PJOS eklise.

“They closed a road, but I don’t know which.”

### 4.5 Argument for argument structure?

Is all this evidence for another level of representation relevant to (significant for) human linguistic competence?

- If the syntactic approach is wrong, what we want is a (kind of semantic) representation that can distinguish, for example, actives from passives and predicates with overt (internal) arguments from their congeners in which those arguments are implicit (or suppressed). This can't be the truth conditional level, since at that level, these differences are gone (otherwise the entailment patterns don't work).

That is, is elliptical identity not stated over meanings or phrase markers but over argument structure representations?

**Candidates:**

1. **HPSG (Sag et al. 2003:314ff), argument structure:**
   
   active: \(\text{send} \quad [\text{ARG-ST } < \text{NP}_i, \text{NP}_j, \text{PP[to]> }]\)
   
   passive: \(\text{sent} \quad [\text{ARG-ST } < \text{NP}_j, \text{PP[to]} (, \text{PP[by]})> ]\)

2. **LFG (Bresnan 2001:312), f-structure**
   
   active: a-structure: \(\text{pound} < x \quad y >\)
   
   f-structure: SUBJ OBJ
   
   passive: a-structure: \(\text{pound} < x \quad y >\)
   
   f-structure: \(\emptyset \quad \text{SUBJ}\)

3. **Lexical Conceptual Structure (Jackendoff 1990)**

4. **Final Stratum relations (GRs) in Relational Grammar**

5. **A-structure in Autolexical Grammar (Sadock 1991)**

### 4.6 No: voice mismatches under ellipsis again

- Impossible in sluicing

*Joe was murdered, but we don’t know who. *murdered Joe>*

*Someone murdered Joe, but we don’t know who by. *Joe was murdered>*

- Possible with VP-ellipsis

passive antecedent, active ellipsis (most from Kehler 2002:53)

a. This problem was to have been looked into, but obviously nobody did. *look into this problem*
b. In March, four fireworks manufacturers asked that the decision be reversed, and on Monday the ICC did. \(<\text{reverse the decision}>\). (Dalrymple 1991, cited by Kehler)

**Active antecedent, passive ellipsis**

(110) a. Actually, I have implemented it [=a computer system] with a manager, but it doesn’t have to be. \(<\text{implemented with a manager}>\)

b. Steve asked me to send the set by courier through my company insured, and it was. \(<\text{sent by courier through my company insured}>\)

c. The janitor should remove the trash whenever it is apparent that it needs to be \(<\text{removed}>\).

**Different targets for deletion:**

- in sluicing, a clausal node that necessarily includes Voice
- in VP-ellipsis, the verbal projection that is complement to Voice

(111) *Joe was murdered, but we don’t know who.

(112) This problem was to have been looked into, but obviously nobody did.

(113) **No new words**

Every lexical item in the numeration of the sluice that ends up (only) in the elided IP must be identical to an item in the numeration of the antecedent CP.

(114) Mary was flirting, but they wouldn’t say [with who \(<[\text{TP Mary was flirting }\_\_\_\_]>\)].

(115) *Mary was flirting, but they wouldn’t say [who \(<[\text{Mary was flirting with }\_\_\_\_]>\)].

(116) a. They’re jealous, but it’s unclear [of who \(<\text{they’re jealous }\_\_\_\_\_\_\_\_\_\_\_\_\_\_}\)].

**4.7 A syntactic identity condition (+semantics)**

Chung 2005’s lexiso-syntactic requirement (applied in addition to e-givenness):

(113) **No new words**

Every lexical item in the numeration of the sluice that ends up (only) in the elided IP must be identical to an item in the numeration of the antecedent CP.

(114) Mary was flirting, but they wouldn’t say [with who \(<[\text{TP Mary was flirting }\_\_\_\_]>\)].

(115) *Mary was flirting, but they wouldn’t say [who \(<[\text{Mary was flirting with }\_\_\_\_]>\)].

(116) a. They’re jealous, but it’s unclear [of who \(<\text{they’re jealous }\_\_\_\_\_\_\_\_\_\_\_\_\_\_}\)].
b. *They’re jealous, but it’s unclear [who <they’re jealous of __>].

(117) a. John was seen, but I don’t know by whom <he was seen __>.
   b. *John was seen, but I don’t know who <he was seen by __>.

(118) a. They sent the package--find out who <they sent the package __>!
   b. *They sent the package--find out who <they sent the package to __>!

Not just stranded prepositions: object alternations that involve two different obliques (Levin 2003) are equally out:

(119) a. They embroidered something with peace signs.
   b. They embroidered peace signs on something.

(120) a. *They embroidered something with peace signs, but I don’t know what on <they embroidered peace signs __>.
   b. *They embroidered something on their jackets, but I don’t know with what <they embroidered their jackets __>.
   (On image impression reading of with what, not manner reading.)

The lack of voice and argument structure alternations (whether or not they involve stranded prepositions) follows if all such alternations reflect distinct heads in the numeration (Hale and Keyser 1993, 2002, et multi alii ante postque):

(121) *They embroidered something with peace signs, but I don’t know what on <they embroidered peace signs __>.

(122) 

\[
\begin{array}{c}
\text{vP} \\
\text{they} \\
\text{v}_{[\text{Voi}]}
\end{array}
\]

\[
\begin{array}{c}
\text{vP} \\
\text{something}
\end{array}
\]

\[
\begin{array}{c}
\text{v}_{[\text{tr}]}
\end{array}
\]

\[
\begin{array}{c}
\text{vP} \\
\text{[pp with peace signs]}
\end{array}
\]

\[
\begin{array}{c}
\text{v}_{\text{with}} \\
\text{VP}
\end{array}
\]

\[
\begin{array}{c}
\text{v}_{\text{with}} \\
\text{vP}
\end{array}
\]

\[
\begin{array}{c}
\text{embroider}
\end{array}
\]

Kratzer 1996’s Voice v

Jelinek 1998’s object-introducing v[trans]

[pp with peace signs] \text{v}_{\text{with}} \text{VP} \text{v with P}_{\text{with}} \text{specifier selectional feature}

(Levin 2003: \textit{embroider} has a simple event structure: \text{x ACT}_{<\text{MANNER}>},

\textit{She embroidered her way into the record books.})
(123)  
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"
(*)... who <Mary was flirting [with__]>)

Mary

⁆⑨

vP

v_{[\text{Voi}]}

vP

PP

v_{\text{with}}

VP

[≡] v_{\text{with}}

flirt

(132) **Generalization**

Internal argument alternations are not possible under ellipsis.

(133) *She embroiders peace signs on jackets more often than she does <embroider jackets> with swastikas.

(134) a. *Abby flirted more often in general than Beth did <flirt with> Max.
    b. ?Abby flirted with Ben more often than she did <flirt with> Ryan.

(135) a. *He’d give Yale money more readily than he would <give money> to charity.
    b. ?He’d give money more readily to Yale than he would <give money to> charity.

(136) *This can freeze. Please do. (Johnson 2004:7) (v_{\text{unacc}} is under v_{[\text{Voi}]}; allows us to capture Perlmutter’s generalization, which is mysterious if unaccs are just VPs)

(137) The wind blew the door open and no one closed it. Finally, *Maribel did [\forall v [\forall v <[vP close it]> again]].

Still not quite strong enough?: Wacky cases (discussed by Chung)

(138) The\(_1\) butler\(_2\) claimed\(_3\) to\(_4\) the chef that\(_5\) he\(_6\) served\(_7\) the\(_8\) soup\(_9\), but I’m not sure [which guests [the\(_1\) butler\(_2\) claimed\(_3\) that\(_5\) he\(_6\) served\(_7\) the\(_8\) soup\(_9\) to\(_4\) __ ]].

(139) *The butler claimed to the chef that he served the soup, but I’m not sure which guests.

“Maybe the numeration of a sentence (or of some phase of a sentence) could be viewed as a highly structured collection of lexical items that must be combined deterministically, in exactly one way.” (Chung 2005:16)

(140) Joe said something or other to Zelda, but I don’t know [what [Joe said __ to Zelda or Zelda said __ to Joe]].

(141) Joe said something or other to Zelda, but I don’t know what.

- The examples in (139) and (141) can be ruled out by Chung’s condition simpliciter if e.g., *claim that and claim to X that involve different vs (introducing the different argument structures), and if sentential or (<t, t>) is a different lexical item from nominal or (type <ett, ett>), etc. (Or ‘phase-based ellipsis evaluation’, as proposed by Takahashi and Fox 2004; cf. Fortin to appear.)

But we still need mutual entailment (or something else) in addition to ‘No new words’:

(142) *Joe hates Felicia, but I don’t know why <Felicia hates Joe>.
4.8 Revisiting some other areas with a more refined syntax

Not at issue: Surface identity. Inflectional features (vs. categorial or selectional) are irrelevant. Different language antecedents:

(143) a. A: Tha pas? [Greek]
   FUT go.2s
   ‘Will you go?’
   b. B: Yes, I will <go>.
(144) Ich habe ihr einen Brief geschrieben, and you did <write her a letter>, too.
I have her.DAT a.ACC letter.ACC written
   ‘I wrote a letter to her...’
(145) a. A: Tha ise eki? [Greek]
   FUT be.2s there
   ‘Will you be there?’
   b. B: I will <be there>.
(146) a. A: Kannst du mir helfen? [German]
   can you me.DAT help
   ‘Can you help me?’
   b. B: Sure I can <help you>.

(147) Anastasia likes okra, and her mother does <like okra>, too.

- Noninflectional features grouped in a feature structure to the exclusion of inflectional features (the latter relevant for PF/Morphological Structure); ‘LF’ identity actually identity of SYN feature structures.

(148)  

Recall Johnson 2001’s tack to Hardt 1993’s data:
(149) a. John is a great laugher -- when he does <laugh>, it’s infectious.
   b. [NP -er [VP laugh]]

- Basic idea: Despite surface appearances, at the level relevant to syntactic identity, the relevant feature structures are identical:
- THE JOHNSON STRATEGY: Use a more articulated syntax to prise apart the mismatches, locating the mismatching material (or its morphological trigger) outside the ellipsis site.

(150) Bill mentioned his plans to do away with someone, but he didn’t mention who [he plans to do away with]. < Ross 1969:275
[DP he[GEN] D[POSS] [NP n [vp the plan to do away with someone]]]
4.8.1 Deleted infinitives

(151) \([\text{DP} \text{ D} \ [\text{DP} \ x \ [\text{VP} \ (\text{PRO}) \text{ decorate for the holidays}]] \text{ is easy if you know how } \ [\text{(PRO)} \text{ to decorate for the holidays}]!\]

(152) a. \(\text{D[CAT[D; FIN[gerund]]...]}\)
b. \(\[\text{INFL[FIN[___]]}]\)

(153) Agree(D, x; FIN) turns \(x[\text{INFL[FIN[___]]}]\)
into \(x[\text{INFL[FIN[gerund]]}]\) (realized as -ing form by the morphology)

(154) Agree(X,Y;F) (read: ‘X triggers agreement on Y in F’ or ‘Y agrees with X in F’) For any syntactic objects X and Y, where X bears a categorial feature F with value Val(F) and Y bears a matching unvalued inflectional feature F’:___ , and either X c-commands Y or Y c-commands X,
let Val(F’) = Val(F) and
if F is uninterpretable, let F = F

(155) how C[FIN[nonfinite]] \(<(\text{PRO}) \text{ T[FIN[___]]} \text{ decorate for the holidays}>>.

4.8.2 Malagasy sluicing (Potsdam to appear)

(156) nandoko zavatra i Bao fa adinoko hoe 
paint.ACT thing Bao but forget.PASS.Is COMP
ina <Op> no nolokoin’ i Bao ti
what PRT paint.PASS Bao

• Chung 2005, Pearson 2005: ‘voice’ in Malagasy is really more on a par with wh-agreement in e.g. Chamorro (an inflectional morphological realization triggered by a particular syntactic configuration)

•

4.8.3 ‘Modality’ switches

(157) \(I_1 \text{ remember } [\text{DP} \ [\text{VP} \ \text{PRO} \text{ meeting him}]], \text{ but I don’t remember when } [\text{I met him}].\)
• See von Stechow 2003

4.8.4 Contrast sluices

(158) She has [five CATS]\(, \text{ but I don’t know how many DOGS } [\text{she has}].\)
(159) [five CATS]\(\lambda \text{t.she has t}\)

• Focus scoping gets the locality effects (e.g., islands) in contrast sluices as well

4.8.5 ‘Vehicle change’
4.8.5.1 ‘Vehicle change’ on nominals (pronouns/DPs)

Sloppy identity in pronouns is insensitive to φ features:
(160) You think you’re going to win, but so does [everybody else in the race]₂ \(<\text{think they}₂ \text{’re going to win}>.\)
(161) a. Only I did my homework.  
b. SS: $[\text{Only } I]_3 \text{ did my}_8 \text{ homework.}$  
c. LF: $[\text{DP only } I] \lambda x \text{ did } x^{1st} \text{'s homework}$

(162) Feature transmission under variable binding:  
Transmit features of a moved phrase to all variables it binds. (a Heim handout, cited by von Stechow 2003, cf. Kratzer 2006)

(163) a. They arrested $\{\text{Alex}_3 / \text{[the guy who lives over the garage]}_3\}$ though he$_3$ thought they wouldn’t.  
b. *They arrested $\{\text{Alex}_3 / \text{[the guy who lives over the garage]}_3\}$, though he$_3$ thought they wouldn’t arrest $\{\text{Alex}_3 / \text{[the guy who lives over the garage]}_3\}$.

(164) a. They arrested Alex$_3$, though he$_3$ didn’t know why.  
b. They arrested Alex$_3$, though he$_3$ didn’t know why they arrested $\{\text{him}_3 / \* \text{Alex}_3\}$.

(165) a. They arrested the guy Alex$_3$ hired, though he$_3$ thought they wouldn’t.  
b. They arrested $\{\text{the guy Alex}_3 \text{ hired}\}$, though he$_3$ thought they wouldn’t arrest $\{\* \text{the guy Alex}_3 \text{ hired} / \text{him}_2\}$.

• $[+\text{pronominial}, +\text{anaphoric}]$ are ‘inflectional’ features, valued by ‘discourse-linked’ elements in the extended left periphery? (Cf. Aoun and Nunes 2002)

(166) Mary talked to no senator before $\{\text{the senator | he}\}$ was lobbied.

(167) $[\text{DP D[THE, R]}[\text{NP senator}]] \rightarrow \text{the senator}$

(168) $[\text{DP D[THE, R]}<\text{NP}>] \rightarrow \text{he}$

Can this be extended to names? (i.e., if the variable is free) Are there bound uses of names?  

(169) $[\text{DP D[THE, R]}<[\text{NP ?}]>] \sim \text{Alex}$

Kratzer’s 1991 famous Tanglewood examples:

(170) [You claim that I’m a copycat traveler, going to Tanglewood, Aspen, and Breckenridge all because you went to those places, respectively. But in fact I had other reasons for going to Aspen and Breckenridge:]  
I only went to Tanglewood$_2$ because you did.  <go to Tanglewood>  
[the only x such that I went to x because you went to x] = Tanglewood

(171) [Mark is about to executed] Normally, Mark would be entitled to choose his last meal.  
(I.e., [anyone in Mark’s position would be entitled to choose his last meal])

4.8.5.2 Negative Polarity Items (NPIs) in ellipsis (Klima 1964, Ross 1967, Sag 1976)

(172) John didn't see anyone, but Mary did.  
(173) *John didn't see anyone, but Mary saw anyone.  
(174) John didn't see anyone, but Mary saw someone.

(175) John hasn’t ever been there, but Mary has.  
(176) *John hasn’t ever been there, but Mary has ever been there.  
(177) John hasn’t ever been there, but Mary has been there (at least) once.
With minimizers, we have access to the literal (or nonidiomatic) meaning, just as with idioms.

(178) John didn’t sleep a wink, but Mary did. (=sleep at least a minimal amount)
(179) John wouldn’t budge an inch, but Mary did. (=move at least a minimal amount)
(180) John didn’t lift a finger that day, but Mary did. (=do at least a minimal amount)
(181) John didn’t say a word, but Mary did. In fact, she said a lot of words/them!
(182) A: John spilled the beans. B: Really? Was he able to find them all again?

In certain (‘echoic’?) contexts, minimizers differ from NPIs like ‘anyone’, ‘at all’:
(183) Q: Did John lift a finger?
   A: Yes, he lifted a finger. (=he did at least a minimal amount)
   In fact, he helped a lot.
(184) Q: Did you eat {anything/ at all} this morning?
   A: *Yes, I ate {anything/ at all} this morning.

So the nature of the ‘problem’ with minimizers in ellipsis contexts is different: its solution is the solution we give to the well-formedness of dialogues like (183).

(185) John didn’t sleep a wink, but Mary did <sleep a wink>.

Reviving Klima’s some~any rule (and Ross’s feature-changing constraints)

(186) a(ny) [uPol: _]
(187) Can be valued in situ by Agree(Licenser, NPI) (see Giannakidou 2002, to appear a,b)

4.8.5.3 This way madness lies?

(188) a. A: Kannst du mir helfen? [German]
   can       you me.DAT help
   ‘Can you help me?’
   b. B: Sure I can <help you>.

English has an inherent DAT assigning V/v like German? Or Case features are always inflectional (requiring a slight modification to the definition of Agree).

4.9 Voice vs argument structure conclusions

- At least some kinds of ellipsis resolution (here, VP-ellipsis and sluicing with linguistic antecedents) requires identity of syntactic structure
- The existence of voice mismatches under VP-ellipsis but not under sluicing show that there must be a Voice head outside the VP-ellipsis site (permitting alternation) but inside the sluicing site (disallowing it).
4.9.1 In v-raising (and v-stranding) languages

Goldberg 2005, McCloskey 1991

- Hebrew

(189) Q: Tazmini et Dvora la-mesiba? invite. fut.2fs acc Dvora to.the-party
   ‘Will you invite Dvora to the party?’

A: Kvar hizmanti.
   ‘I already did. (lit. I already invited.)’

Q: Binyamin LAKAX et Ruti la-makolet?
   Binyamin take[Past3Msg] acc Ruti to.the-grocery.store
   ‘(Did) Binyamin TAKE Ruti to the grocery store?’

A: *Lo, hu ŠALAX.
   no he send[Past3Msg]
   (‘No, he SENT [Ruti to the grocery store].’)

Binyan Hif’il (Causative) vs. Pa’al (Plain), Root NUN-SAMEX-AYIN (נסע)

Q: Hisa’ta etmol et Li’ora le-Tel Aviv?
   drive[Past2Msg] yesterday acc Li’ora to-Tel Aviv
   ‘(Did) you drive yesterday Li’ora to Tel Aviv?’

A: *Ken, hi nas’a.
   yes she travel[Past3Fsg]
   (‘Yes, she traveled [to Tel Aviv yesterday].’)

Binyan Pu’al (Passive of Intensive) vs. Pi’el (Intensive), Root XET-BET-KUF

Q: Aviva xubka al-yedey Yicxak?
   Aviva be.embraced[Past3Fsg] by Yitzchak
   ‘Was Aviva hugged by Yitzchak?’

A: *Ken, hu xibek.
   yes he embrace[Past3Msg]
   (‘Yes, he hugged [her].’)

(190) GOLDBERG’S GENERALIZATION: Inflectional, but not derivational/root morphology, may vary on heads of VP-ellipsis targets in V-raising languages.

- Likewise for light verb (LV) stranding under VP-ellipsis in Farsi (Toosarvandani 2005, p.c.):

(191) Q: lebasha xoshk shodan?
   clothes dry become
   ‘Have the clothes dried yet?’

A: *na, vali sohrab raft <lebasha-ra xoshk> bokone
   no, but Sohrab went <clothes-acc dry> subj.DO
   (‘No, but Sohrab went to (dry clothes).’)

(192) Q: kasi lebasha-ra xoshk karde?
   someone clothes-acc dry did
‘Has someone dried the clothes?’
A: *na, vali lebasha <xoshk> shodan
no, but clothes <dry> BECOME
(‘No, but the clothes have already (dried).’)

• NB: Light verbs in Farsi can alternate (in v) outside the ellipsis site (as long as argument structure is preserved) (Toosvarvandani 2005).

(193) Q:  piran-ra otu kard-i ?
  shirt-RA iron DO:PAST-2sg
  ‘Have you ironed the shirt?’
  yes yesterday shirt-RA iron HIT:PAST-1sg
  ‘Yes, I did (iron the shirt) yesterday.’

Why can’t the same strategy apply? Goldberg’s VIR, for root alternations.

But why not simply elide (as in English) a proper subpart of the VP, the complement to the valence-changing head?:

(194) Q:  Aviva xubka al-yedey Yicxak?
  Aviva be.embraced[Past3Fsg] by Yitzchak
  ‘Was Aviva hugged by Yitzchak?’
A:  *Ken, hu xibek.
  yes he embrace[Past3Msg]
  (‘Yes, he hugged [her].’)

Irish shows us that the projection that introduces the subject must also delete

(195) (English)

TP
  vP
    v < VP >
      V ....
        [v*]
(196) \[ \begin{array}{c}
TP \\
\text{[v\#]} \quad <vP>
\end{array} \]

(Hebrew, Irish)

Answer:

(197) Local morphosyntactic constraints on the ‘licensing’ of ellipsis (e.g., the E feature or on \( v \); see Johnson 2004)

- Maybe the null VP (or the head of it, or E) is a null (en)clitic (Lightfoot 2004), which must attach to a stressable host in its leftward immediate prosodic domain. (\( to \) is also such an element, though the prosodic effects may be phonologically opaque; cf German ‘weak’ pronouns.)
  \( \Rightarrow \) E can attach to \( v \) (as in English), but not to a trace (Hebrew)

5 Conclusions

- Ellipsis phenomena provide a strong argument for a theory of syntax (of grammar) that countenances unpronounced structures: what you ‘see’ is not what you get
- Ellipsis resolution needs to refer to focus-assisted mutual entailment and identity of argument structure, or
- Syntactic identity is enough, but
  - the structures involved are much more articulated than we thought, and
  - identity is to noninflectional feature structures, and
  - more features are inflectional than we thought
- There are null heads (\( v \)[voice] in English): without this, the difference between sluicing and VP-ellipsis voice mismatches would not be possible to capture in a uniform theory of elliptical identity

Remaining issues:

What about ‘ellipses’ without linguistic antecedents (e.g., certain nonsententials)? Do we posit ‘inferred LFs’ (Fiengo and May 1994), allow more null lexical items (Ludlow to appear), or admit to a heterogeneity of analyses of surface ‘elliptical’ phenomena, as argued by Fortin to appear?

Theories of syntax strive for parsimony in the devices they posit and degree of abstractness they countenance, but this parsimony cannot come at the expense of empirical coverage.

As Culicover and Jackendoff put it in an early version of their book, “If [such] cases ... were ungrammatical, that would be impressive evidence of the reality of invisible structure.” With which I wholeheartedly concur, and to which I merely add: indeed it is.
6 References


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