Diagnosing ellipsis

Jason Merchant
University of Chicago
merchant@uchicago.edu

28 January 2009; Diagnosing Syntax conference, Leiden/Utrecht

1   The phenomena

(1)   a. "*Eclipsis* est defectus dictionis, in quo necessaria verba desunt" (St. Isidore of Sevilla, Etymologiarum, Liber I 'De grammatica', ch. XXXIV 'De Vitiis', sec. 10)

    b. "ellipsis, or speech by half-words, [is the peculiar talent] of ministers and politicians" (Alexander Pope, 1727, *Peri Bathous*, p. 115)

    c. "zweimal tausendjährige Ellipsenplage" (Bühler 1934; 1978:168)

    d. [Ellipsis] is the provenance of degenerates, heretics, procrastinating ne'er-do-wells

(2)   'Headed' (H+) ellipses (in Chao's 1987 terminology)

    a. **sluicing**
      John can play something, but I don't know what.

    b. **VP-ellipsis**
      John can play the guitar and Mary can, too.

    c. **pseudogapping**
      John can play the guitar and Mary can the violin.

    d. **NP-ellipsis/'N''-ellipsis**
      John can play five instruments, and Mary can play six.

(3) 'Headless' (H-) ellipses[1]

    a. **stripping**
John can play the guitar, {and Mary, too/and Mary as well/but not Mary}.
John can play the guitar better than Mary.

    b. **gapping**
John can play the guitar, and Mary the violin.
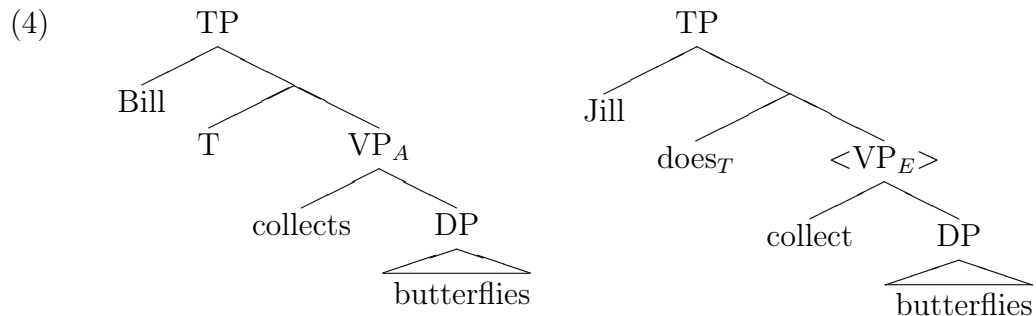John can play the guitar better than Mary the violin.

    c. **fragment answers**
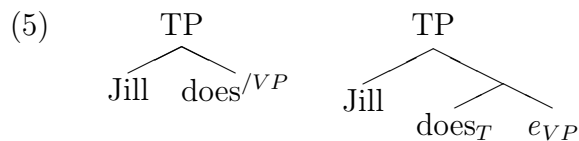Q: Who can play the guitar?
A: (Not) John.

Two questions:

1. Is there syntax internal to the ellipsis site? (E.g., is there an actual VP in the second clause of (2)b?)

2. The understood material is identical to some antecedent. Is the relevant kind of identity syntactic (defined over phrase markers of some sort) or semantic (defined over semantic representations of some sort)?

(4)

TP
Bill
T
VP_A
collects
DP
butterflies

TP
Jill
$does_T$
$<VP_E>$
collect
DP
butterflies

[1]All of these elliptical structures have been the focus of intense theoretical interest over the past four decades, and vast bibliographies can be compiled for each of the above phenomena. I can make no pretense of bibliographic completeness here, and refer the reader to excellent recent surveys for a more detailed treatment of the literature, especially Hartmann 2000, Johnson 2001, 2008, Winkler and Schwabe 2003, van Craenenbroeck 2004 [to appear], Winkler 2005, and Goldberg 2005; see Lechner 2004 for a convincing reduction of 'comparative ellipsis' to these.

		Is there syntax in the ellipsis site?	
		Yes	No
Is identity syntactic or semantic?	Syntactic	Sag 1976, Williams 1977 Fiengo & May 1994 Chung et al. 1995, etc. Kehler 2000	N/A (incoherent)
	Semantic	Merchant 2001	Keenan 1971, Hardt 1993, Dalrymple et al. 1991 Ginzburg & Sag 2000, Culicover & Jackendoff 2005 etc.

Table 1: Previous research on the two ellipsis questions

(5)

Plan for today:
1. Review evidence that there's syntax in the ellipsis site
2. Review evidence that identity is stated over syntactic representations
3. Examine consequences for polarity items

2 Diagnosing syntax inside an ellipsis site

2.1 Sluicing and the P-stranding generalization

(6) **English**
　　a. Peter was talking with someone, but I don't know who.
　　b. Who was he talking with?

(7) **Swedish**
　　a. Peter har talat med någon;　jag vet　inte (med) vem.
　　　Peter has talked with someone I　know not　with　who

　　'Peter talked with someone, but I don't know who.'

b. Vem har Peter talat   med?
   who has Peter talked with
   'Who has Peter talked with?'

(8) **Greek**

a. I   Anna milise me   kapjon, alla dhe ksero   *(me) pjon.
   the Anna talked with someone but not I.know   with who

b. * Pjon milise   me?
    who   talked.3s with

(9) **Russian**

a. Anja govorila s   kem-to, no ne znaju *(s)   kem.
   Anja spoke   with someone, but not I.know   with who

b. * Kem ona govorila s?
    who she talked   with

   Important refinements to this picture are found in Almeida and Yoshida 2007, van Craenenbroeck 2008, Vicente 2008, and Nykiel and Sag 2008.

2.1.1 P-stranding in implicit questions

Joint work with Lyn Frazier, Charles Clifton Jr., and Thomas Weskott
   Written questionnaire, with other subexperiments and fillers including questions/answers about spatial locations. 7 point scale rating the goodness in context. 16 Proper Name items.

(10)   a. Ist er seit   APRIL im   Krankenhaus? Nein, seit   JUNI.
          is he since April   in.the hospital   no   since June

       b. Ist er seit   APRIL im   Krankenhaus? Nein, JUNI.
          is he since April   in.the hospital   no   June

(11)   descriptive data: mean ratings and StdDevs (in brackets), grand means, by condition:
       PP-fragment answer: 5.99 (1.64)
       NP-fragment answer: 4.76 (2.03)

This difference is significant, as the t-tests (2-sided, for paired samples) show: $t1(1,39) = 6.35$, $p < .001$, $t2(1,15) = 5.17$, $p < .001$

2.2 Case matching

(12) **German** (*schmeicheln* 'flatter' assigns dative, *loben* 'praise' assigns accusative; Ross 1969)

    a. Er will   jemandem   schmeicheln, aber sie   wissen nicht, {
      he wants someone.DAT *flatter*   *but*   *they know*   *not*
      *wer   / *wen   / wem   }.
      who.NOM   *who*.ACC   *who*.DAT

      'He wants to flatter someone, but they don't know who.'

    b. Er will   jemanden   loben, aber sie   wissen nicht, {
      he wants someone.ACC *praise but*   *they know*   *not*
      *wer   / wen   / *wem}.
      who.NOM   *who*.ACC   *who*.DAT

      'He wants to praise someone, but they don't know who.'

2.3 Locality effects

2.3.1 VP-ellipsis (Sag 1976, Haïk 1987, Postal 2001, Lasnik 2001, Fox and Lasnik 2001, Kennedy and Merchant 2000, Merchant 2001, 2008a, Kennedy 2003, etc.)

(13)   a. *I read every book you introduced me to a guy who did.

      b. *Abby wants to hire someone who speaks a Balkan language, but I don't remember which (Balkan language) Ben does. <want to hire someone who speaks t >

      c. *Which film did you refuse to see because Roger was so revolted when he did after renting?

      d. *They met a five inches taller man than you did.

2.3.2 Fragment answers to implicit salient questions (Morgan 1973, Merchant 2004)

(14)   a. Does Abby speak *Greek* fluently?

      b. No, *Albanian.*

      c. No, she speaks *Albanian* fluently.

(15)   a. Did Abby claim she speaks *Greek* fluently?

    b. No, *Albanian.*

    c. No, she claimed she speaks *Albanian* fluently.

(16) a. Will each candidate talk *about taxes*?

      b. No, *about foreign policy.*

      c. No, each candidate will talk *about foreign policy.*

(17) a. Did each candidate$_2$ agree on who will ask him$_2$ *about taxes* (at tonight's debate)?

      b. *No, *about foreign policy.*

      c. No, each candidate$_2$ agreed on who will ask him$_2$ *about foreign policy* (at tonight's debate).

2.3.3 Stripping/Bare Argument Ellipsis (Reinhart 1991, Vicente 2006, Arregi 2007)

(18) *They caught the man who'd stolen *the car* after searching for him, but not *the diamonds.*

2.3.4 Gapping (Johnson 1996, 2006, Coppock 2001, Winkler 2005)

(19) *Some wanted to hire the woman who worked on Greek, and others Albanian.

2.3.5 Sluicing from inside DPs (Lasnik and Park 2004)

(20) *Books were sold to John, but I don't know on which shelf.

2.3.6 Sluicing over implicit correlates (Chung et al. 1995, Hardt and Romero 2004)

(21) Tony sent Mo a picture that he painted, but it's not clear with what.

      a. $=$ <Tony sent him the picture $t_{withwhat}$>

      b. $\neq$ <Tony sent him a picture that he [painted $t_{withwhat}$]>

2.3.7 Contrast sluicing (Merchant 2001)

(22)   She knows a guy who has *five dogs*, but I don't know how many *cats*.
    a.   = <he [=the guy who has the five dogs] has *t*>
    b.   ≠ <she knows a guy who has *t*]>

> Conclusion: There is (regular, but unpronounced) syntactic structure inside ellipsis sites.

As Culicover and Jackendoff 2005:246fn11 put it, "If [such] cases ... were ungrammatical, that would be far better evidence of the reality of invisible [*sic*] structure."

2.4   Voice mismatch tolerance

2.4.1   High/Big ellipses: No voice mismatches

In sluicing, fragment answers, gapping, and stripping, elided material and antecedent phrase must match in voice

(23)   Sluicing (data discussed in Merchant 2001, Chung 2005)
    a.   *Joe was murdered, but we don't know who. <murdered Joe>
    b.   *Someone murdered Joe, but we don't know who by. <Joe was murdered>

(24)   Fragment answers
    a.   Q: Who is sending you to Iraq? A: *By Bush.
    b.   German
       i.   Q: Wer   hat den Jungen untersucht? A: *Von einer
             who.NOM *has the boy   examined?   by   a*
        Psychologin.
        psychologist
        'Q: Who examined the boy? A: He was examined by a psychologist.'
       ii.   Q: Von wem   wurde der Junge untersucht? A: *Eine
           *by   who.*DAT *was   the boy   examined   a*
        Psychologin.
        psychologist.NOM
        'Q: Who was the boy examined by?' A: A psychologist examined him.'

(25) Gapping

    a. *Some bring roses and lilies are by others.

    b. *Lilies are brought by some and others roses.

(26) Stripping/Bare Argument Ellipsis

    a. *MAX brought the roses, not by AMY!

    b. *Der Junge wurde von einer Psychologin untersucht, und ein
       the   boy   was   by   a   psychologist examined, and a
       Kinderarzt   auch.
       pediatrician.NOM *too.*

       'The boy was examined by a psychologist, and a pediatrician
       examined him, too.'

2.4.2 Low/Little ellipsis: Voice mismatches possible

(See Sag 1976, Hankamer and Sag 1976, Dalrymple et al. 1991, Hardt 1993, Fiengo and May 1994, Johnson 2001, Kehler 2002, Arregui et al. 2006, Baker 2007, and Merchant 2008b for further examples, discussion, and qualifications)
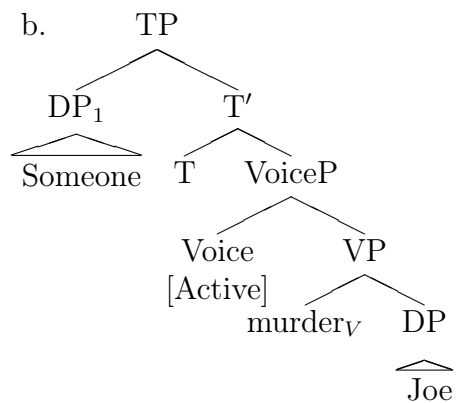
(27) Active antecedent, passive ellipsis

    a. The janitor must remove the trash whenever it is apparent that it should be. <removed>

    b. ... there was really no one at the meeting who could answer the question the way it should be. <answered> ('Member comments', Evergreen, Newspaper of the Hyde Park Cooperative Society, Vol. 60.2, February 2007)

    c. [Prison guards deserve their good salaries] Proposing to reduce their numbers to save money would be endangering them even more than they are. <endangered> (Letter to the editor, San Jose Mercury News, June 24, 2004; cited in Sag 2006:2 (10))

    d. Actually, I have implemented it [=a computer system] with a manager, but it doesn't have to be. <implemented with a manager> (Kehler 2002:53)

    e. Steve asked me to send the set by courier through my company insured, and it was. <sent by courier through my company insured> (Kehler 2002:53)

(28) Passive antecedent, active ellipsis

    a. The system can be used by anyone who wants to. <use it>

    b. This information could have been released by Gorbachev, but he chose not to. <release it> (Hardt 1993:37)

    c. This problem was to have been looked into, but obviously nobody did. <look into this problem> (Kehler 2002:53)

    d. 'Slippery slope' arguments can be framed by consequentialists (though I wouldn't in this case). (Richard Dawkins, *The God delusion* (2006), Houghton Mifflin, New York, p. 293)

    e. Some of us are retired, some want to, some don't want to and some cannot! (Yale Class of 1962 newsletter, 11/15/2006; http:// www2.aya.yale.edu/ classes/yc1962/ reunion0607.html accessed on March 7, 2007)

    f. The members are, technically speaking, separate lexemes since partly idiosyncratic morphological changes mark the verbal forms, and must therefore be listed separately in any truly informative dictionary, as indeed Jacobson's dictionary does. ('Counting Eskimo words for snow: A citizen's guide', Anthony C. Woodbury, ms. University of Texas at Austin, July 1991; accessed at http://www.princeton.edu/ browning/snow.html on April 29, 2007)

    g. This guy's tape obviously should be scrutinized more than you did. (Director's commentary, *King of Kong*, 2007, 00:52:59)

2.4.3 Analyzing the uneven distribution of 'voice mismatch'

Posit: voice morphology expressed on the verb is determined by a functional head, Voice, which is external to the VP (Kratzer 1996, Harley 2006 etc.; see Rooryk 1997 for important caveats):

(29) a. Someone murdered Joe.

b.

```
                    TP
           _____|_____
         DP₁              T′
        __|__        _____|_____
     Someone   T       VoiceP
                    _____|_____
                  Voice        VP
                 [Active]    ___|___
                          murder_V   DP
                                     |
                                    Joe
```

Different targets for deletion:

1. In high ellipses (sluicing, etc.), a clausal node that necessarily includes Voice

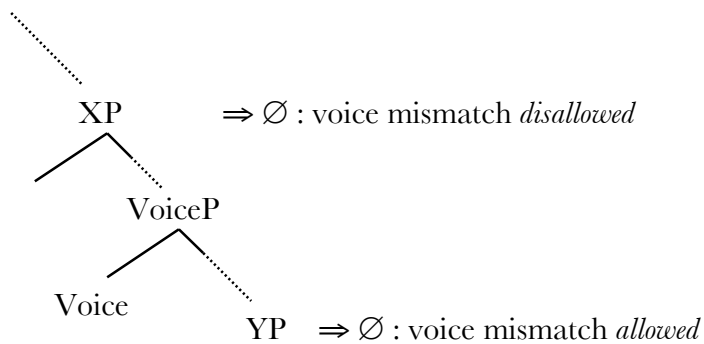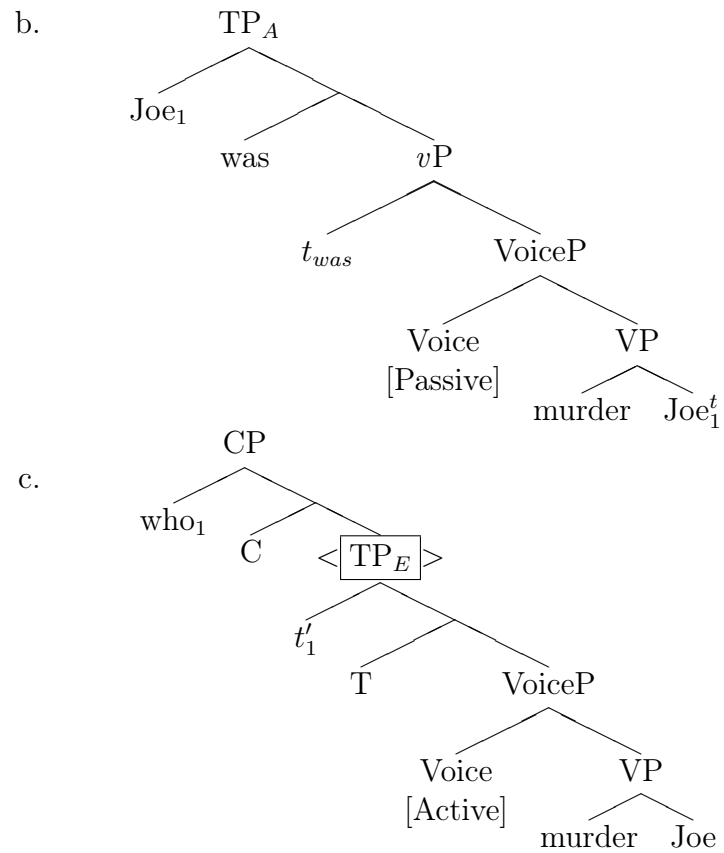2. In low ellipses (VP-ellipsis), the verbal projection that is complement to Voice

```
        ·.
          ·.
            ·.
              ·.
                XP          ⇒ ∅ : voice mismatch *disallowed*
              __|··.
                   VoiceP
                  __|··.
              Voice    ·.
                        YP    ⇒ ∅ : voice mismatch *allowed*
```

Figure 1: The basic geometry of licit vs. illicit voice mismatches

(30)   a. *Joe was murdered, but we don't know who.

b.

$$\text{TP}_A$$

Joe$_1$ — was — vP

t_{was} — VoiceP

Voice [Passive] — VP

murder — Joe$_1^t$

c.

CP

who$_1$ — C — $<\boxed{\text{TP}_E}>$

t_1' — T — VoiceP

Voice [Active] — VP

murder — Joe

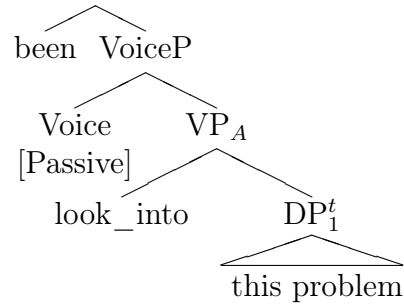TP deletion includes Voice head; TP$_A \neq$ TP$_E$

(31) The auxiliary isn't the culprit:

* O   Petros   skotoθike,   ala ðen kserume pjos.
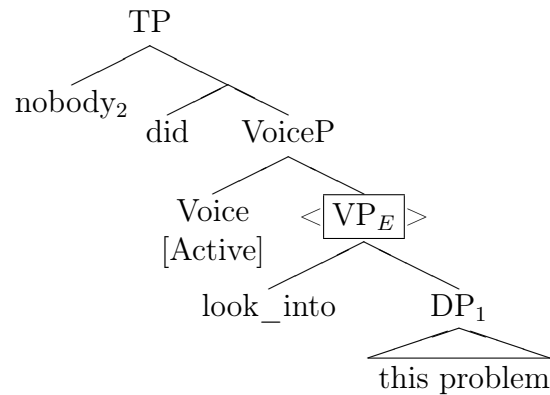*the Petros*.NOM *killed*.PASS.*3s but not we.know who*.NOM

('(lit.) Petros was killed, but we don't know who.')

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

11

b. [$_{DP}$ This problem]$_1$ was to have vP

```
        been   VoiceP
              /      \
          Voice      VP_A
        [Passive]   /    \
              look_into  DP_1^t
                         /    \
                    this problem
```

c.
```
              TP
             /  \
      nobody_2   \
             did  VoiceP
                 /      \
             Voice     <[VP_E]>
           [Active]    /     \
               look_into     DP_1
                            /    \
                       this problem
```

Conclusion: VP-deletion does not include the Voice head

2.5 Inflectional feature variance

(33) Greek ϕ-features

O   Giannis ine perifanos,   ala i   Maria ðen ine (perifani).
*the Giannis is   proud.*MASC *but the Maria not is   proud.*FEM

'Giannis is proud, but Maria isn't (proud).'

(34) a. Probe/trigger: DP[ϕ:3smasc]
      b. Goal: A[ϕ:_]
      c. Agree(DP,A;ϕ) ⤳ A[ϕ:3smasc]

(35) **Idea:**
      Whenever we find an apparent mismatch, the trigger is *outside*
      the ellipsis site, while the goal is inside.

12

2.5.1 Another morphological argument

Warner 1985, Lasnik 1995, Potsdam 1997 (see also McCloskey 1991, Goldberg 2005 for related points)

(36) In general, verbs (both regular and irregular) don't require morphological identity
    a. Emily played beautifully at the recital and her sister will, too. <play beautifully at the recital>
    b. Emily took a break from her studies, and her sister will, too. <take a break from her studies>
    c. Emily sang the song {because|the way} she wanted to. <sing the song>

(37) Forms of *be* do require morphological identity
    a. Emily will be (beautiful) at the recital, and her sister will, too. <be (beautiful) at the recital>
    b. *Emily was beautiful at the recital and her sister will, too.
    c. Emily will be elected to Congress just like her sister was.
    d. *Emily was elected to Congress {because|just like} she really wanted to.

• Lasnik's analysis: Forms of *be* are inserted fully inflected, while other verbs get their inflection in the course of the derivation.

> Conclusion: Identity is between syntactic phrase markers
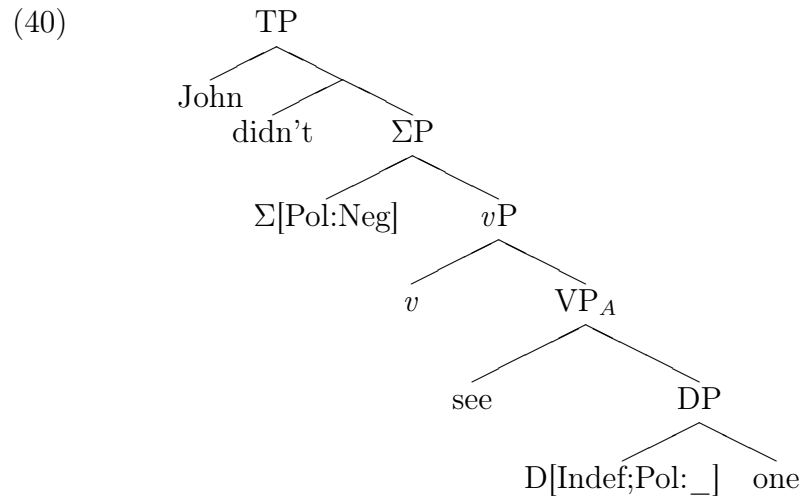
3   Consequences: Polarity items

Sag 1976:157f.

(38) John didn't see anyone, but Mary did.
    a. ... but Mary did see someone.
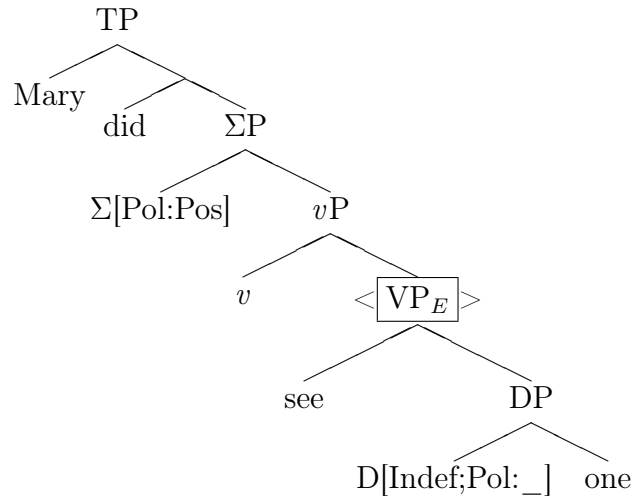   b. ... *but Mary did see anyone.

c. $\exists x.see(Mary, x)$

(39) John saw someone, but Mary didn't.
  a. $\neq$ ... but Mary didn't see someone.
  b. ... but Mary didn't see anyone.
  c. $\neg\exists x.see(Mary, x)$

Giannakidou 2000, 2007: PIs have a syntactic feature Pol:_ which is valued under Agree with a c-commanding 'licensor' such as negation. (See also Klima 1964, Zeijlstra 2008, Lohndal and Haegeman 2009 for related approaches.)

Generalize: Certain expressions have varying morphological realizations, depending on their syntactic environment. Which morphology is realized is determined by agreement with a valuer.

(40)

```
              TP
            /    \
        John      \
              /      \
          didn't      ΣP
                    /    \
              Σ[Pol:Neg]   vP
                          /   \
                         v     VP_A
                              /    \
                            see     DP
                                  /    \
                        D[Indef;Pol:_]  one
```

14

(41)

```
              TP
         ┌────┴────┐
      Mary         
           ┌───────┴───────┐
          did             ΣP
                    ┌───────┴───────┐
                Σ[Pol:Pos]          vP
                              ┌──────┴──────┐
                              v        <[VP_E]>
                                    ┌────────┴────────┐
                                  see                DP
                                              ┌───────┴───────┐
                                         D[Indef;Pol:_]      one
```

(42) Lexical Insertion

    a. [Cat[D, Indef]; Infl[Pol:Neg]] $\mapsto$ any

    b. [Cat[D, Indef]; Infl[Pol:Pos]] $\mapsto$ some (sm)/a

    c. $\lambda f \lambda g \exists x [f(x) \wedge g(x)]$

Ross 1967, Ladusaw 1979, Hardt 1993, Fiengo and May 1994, Giannakidou 1998

Similarly for other PIs: *ever* $\sim$ *(at least) once, yet* $\sim$ *already* (and *until* $\sim$ *before*, according to Sag 1976:158–160, and *at all* $\sim$ *somewhat*, from Klima 1964:282)

Other possibilities:

- scope the PI: the polarity sensitive part is scoped out, and the rest gets interpreted under existential closure.

- equivalently: the PI D combines with the restriction outside the ellipsis site (Sportiche 2000, Lin 2002, Johnson 2000, 2006)

15

3.1 Other determiners whose looks are deceiving

(43) The geriatrician, Dr. Rosanne M. Leipzig, suspected a silent infection—something the other doctors had missed because Mrs. Foley had no fever, as old people rarely do. ['Geriatrics Lags in an Age of High-Tech Medicine', New York Times, 18 October 2006, p. A1]

(44) "It's going to be Nixon for the Republicans," Beaumont said. "Sure, and who else? But he's no war hero, like Ike was. And our guy, well, he is." (Andrew Vachss, *Two Trains Running*, Vintage: New York, 2005, p. 334)

(45) "If anyone sees you, what are they going to think?"
"Who cares? Anyway, there's no one. If there was, I'd be out of here."
...
"I can't see it," Deeba said anxiously. "There's nothing."
"Yes, there is," said Zanna dreamily. (China Miéville, *Un Lun Dun*, Ballantine: New York, 2007, p. 20)

cf. German *kein*/Dutch *geen* (Jacobs 1980, de Swart 1996, von Stechow, Rullman, and many others)

(46) Alle Ärtze   haben kein Auto.
all   doctors have   no   car

   a. = For all doctors x, it is the case the x has no car. (de dicto)

   b. = There is no car y such that all doctors have y. (de re)

   c. = It is not the case that every doctor has a car. (split)

Analysis: *kein/geen/no* is an existential ($\lambda f \lambda g \exists x[f(x) \wedge g(x)]$) that takes narrow scope with respect to a higher, unpronounced, negation.

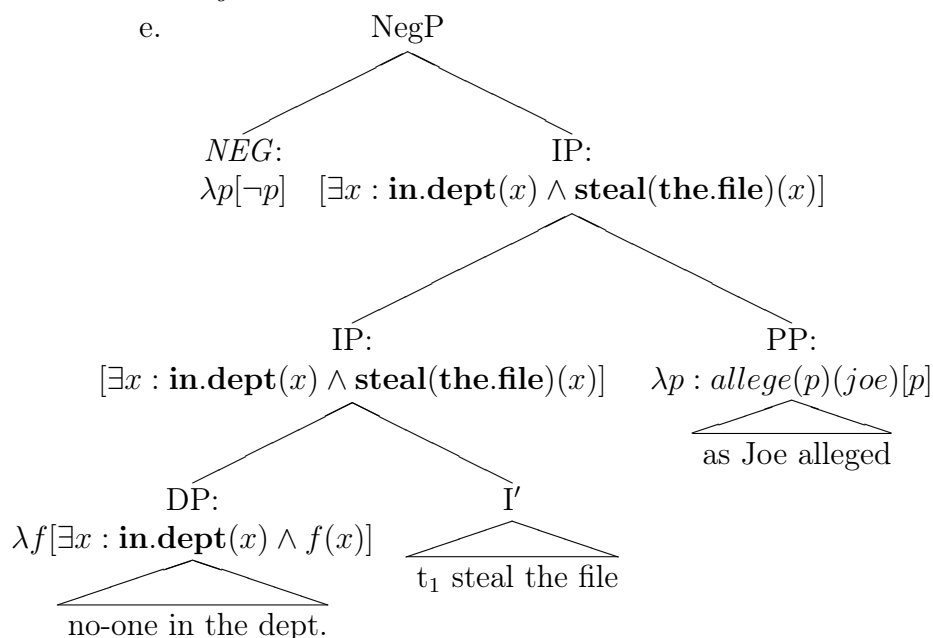Cf. negative concord uses of *no* in non-standard English varieties:

(47) They ain't got no fever.

Sag 1976:312

(48)   % Although John will trust nobody over 30, Bill will.

Potts 2000, 2002:

(49)   a. No-one in the department stole the file, as Joe alleged.
       b. = Joe alleged someone in the department stole the file.
       c. = Joe alleged no-one in the department stole the file.
       d. [$_{NegP}$ NEG [$_{IP}$ someone in the department stole the file]]
       e.

NegP

NEG: $\lambda p[\neg p]$ IP: $[\exists x : \mathbf{in.dept}(x) \wedge \mathbf{steal}(\mathbf{the.file})(x)]$

IP: $[\exists x : \mathbf{in.dept}(x) \wedge \mathbf{steal}(\mathbf{the.file})(x)]$ PP: $\lambda p : allege(p)(joe)[p]$

as Joe alleged

DP: $\lambda f[\exists x : \mathbf{in.dept}(x) \wedge f(x)]$ I′

no-one in the dept.   t$_1$ steal the file

Potts 2002:681(127)

(50)   Alger did not do anything illegal, as Joe believed (the whole
       time / quite wrongly).
       a. *As*-clause = Joe believed the whole time that Alger did not
          do anything illegal
       b. *As*-clause = Joe believed wrongly that Alger did something
          illegal

Potts 2000:

(51)   The company need fire no employees.

17

   a. $\neq$ The company is obligated to fire no employees. (*de dicto*)

   b. $=$ There are no employees x such that the company is obligated to fire x. (*de re*)

   c. $=$ It is not the case that the company is obligated to fire employees. (split)

(52)   John has few friends, and frankly, his brother doesn't really, either. $<$have many$_{NPI}$ friends$>$

Klima 1964:280

(53)   Feature conflation transformations

   a. *Indef*-incorporation:
     S: $[neg] - X - Quant \Longrightarrow neg - X - Indef + Quant$

   b. *neg*-incorporation:
     (optional) $[neg]X[Indef + Y]_{Quant} \Longrightarrow X - neg + [Indef + Y]_{Quant}$
     (obligatory) $[Indef + Y]_{Quant}Z[neg] \Longrightarrow neg + [Indef + Y]_{Quant}Z$

(54)   Morphological spell out rules

   a. $Neg + Indef + Quant \Longrightarrow no$

   b. $Indef + Quant \Longrightarrow any$

   c. $Quant \Longrightarrow some$

Giannakidou and Merchant 2002 propose that some quantificational determiners may be high in the tree (specifically, that a Q head high in the tree could serve as a scope-marker whose value was determined by Agree with an in situ DP). This can be turned on its head: the scope marker starts out with the Q-force determined, and values the lower determiner, which provides the restriction; quantification is over choice functions)

McCawley 1993, Sportiche 2000, Johnson 2000, 2006, Lin 2002

(55)   a. Few dogs eat Whiskas or cats Alpo.

b. Carrie was a fat, not very interesting cat, kept mainly for mousing purposes, and the children ordinarily paid little attention to her, or she to them. [Edward Eager, *Half Magic*, Harcourt, New York, 1954, pp. 30–31]

(56) ΣP:

$\neg[many(dogs)(eat.whiskas) \lor many(cats)(eat.alpo)]$

Σ: $\lambda p.\neg p$

TP

DP$_1$

T vP

many$_{NPI}$ (='few')   NP$_F$

dogs vP   or vP

t_1 v VP   NP$_{2F}$ vP

eat Whiskas$_F$ cats $<v$P$>$ DP$_{3F}$

DP v VP   Alpo

many t_2 eat t_3

(57)   ...ordinarily [NEG [[much(attention)(pay.to(her)(the.children))] or [much(attention)(pay.to(them)(she))]]]]

(58)   a.   *Some will eat few Brussels sprouts or others $<$will eat few$>$ lima beans.

b. I'll give few Brussels sprouts to Mary or lima beans to Max.

3.1.1 Where is negation?

Highest ellipses (sluicing, fragment answer) don't allow 'ignoring' negation:[2]

(59) Sluices

　　a. A number of senators have told me privately that they can't support the amendment, but I'm not at liberty to reveal which ones.

　　b. Bush didn't invite several senators to his prayer breakfast; the White House press office has a list of which.

　　c. 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. $\neq$ why Mark has been able to play the sonata flawlessly

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

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

　　　ii. $\neq$ when she turned off the stove

　　e. Few senators support one of the lobbyists' balanced budget amendments—find out whose!

　　　i. = whose (balanced budget amendment) few senators support

　　　ii. $\neq$ whose (balanced budget amendment) many senators support

(60) Fragment answers

---

[2]Exception: *why not* questions: *No-one came, but we don't know why (not)* Only possible with *why*, as Sag 1976, Horn 1980 point out. Possible analysis: *why* sluices delete a lower piece of structure than other sluices; 'not' is the non-clitic spell-out of Σ (*pace* Merchant 2006). See van Craenenbroeck 2004 for a similar conclusion for D-linked wh-phrases (higher CP) vs. non-D-linked ones (lower CP).

    a. Q: Who didn't you invite? A: Well... Mark.

      i. = I didn't invite Mark.

      ii. ≠ I did invite Mark.

      iii. cf. felicity of *Well, I DID invite Mark*

    b. Q: When was no-one in the shop? A: Between 5 and 6 o'clock.

3.1.2 Locality?

Do NPIs always take narrowest scope, or can they take intermediate scope?

(61) a. Mark didn't think that he had ever said anything incriminating, but Ben did <think that he had at least once said something incriminating>.

     b. $= \neg[think(mark, \lambda w[\exists x : incriminating(x) \wedge say(mark, x, w)])]$

     c. $\neq \neg\exists x : incriminating(x) \wedge [think(mark, \lambda w[say(mark, x, w)])]$

(62) a. Sam can't say anything.|It isn't (likely to be even) remotely possible that Sam said anything.

     b. $= \neg\Diamond\exists x[say(sam, x)]$

     c. $\neq \neg\exists x\Diamond[say(sam, x)]$

Question: Islands

(63) Mark would never read a book that contained a single heretical word, but Ben would, and did, the atheist.

(64) Ross 1967:170, Ross 1967:249–259

    a. Do you believe (*the claim) that anybody was looking for anything?

    b. *I never met that man who anybody tried to kill.

(65) Ross 1967:248 (6.193)
All feature-changing rules obey the same constraints as chopping rules [namely, islands —JM].

(66) Iteration (downward cascade licensing/valuing) is possible

    a. I can't remember the name of {anybody|*somebody} who had any misgivings. (Ross 1967:249–250)

    b. Everybody who has ever worked in any office which contained any typewriter which had ever been used to type any letters which had to be signed by any administrator who ever worked in any department like mine will know what I mean.

3.2 Minimizers

Minimizers are different: they're not ungrammatical in such contexts—instead, they receive their 'minimal' interpretation; we have access to the literal (or nonidiomatic) meaning, just as with idioms. (Horn 1989:400)

(67)   a. John didn't sleep a wink, but Mary did. (=sleep at least a minimal amount)

    b. John wouldn't budge an inch, but Mary did. (= move at least a minimal amount)

    c. John didn't lift a finger that day, but Mary did. (=do at least a minimal amount)

    d. Mark didn't bat an eye|move a muscle when they told them they were fired, but Susan certainly did—in fact, she fell off her chair in surprise!

    e. John didn't say a word, but Mary did. In fact, she said a lot of words/them!

    f. A: John spilled the beans. B: Really? Was he able to find them all again?

(68)   a. John didn't sleep a wink, but Mary did <sleep a wink>.

    b. Mark didn't bat an eye|move a muscle when they told them they were fired, but Susan certainly did <bat an eye|move a muscle>—in fact, she fell off her chair in surprise!

(69)   a. John didn't sleep a wink, but Mary did sleep a wink—in fact, she slept all morning!

b. Mark didn't bat an eye|move a muscle when they told them they were fired, but Susan certainly did bat an eye|move a muscle—in fact, she fell off her chair in surprise!

In certain ('echoic'?) contexts, minimizers differ from NPIs like *anyone*, *at all*:

(70) 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.

(71) 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 (69) and (70).

3.3   Other examples of lexical splits

Examples of 'lexical' information apparently triggered from outside the word it surfaces on:

Yatsushiro and Sauerland 2006:

(72) Selbst die beliebteste   Kanzler-in   aller Zeiten macht
     even   the most.popular chancellor-FEM of.all times   makes
     Fehler.
     mistakes
     a. 'Even the most popular female chancellor of all time can make a mistake.'
     b. 'Even the most popular chancellor of all time can make a mistake.'

Dependent plurals (Sag 1976:143–150)

(73) Dependent plurals allow for singular deletions
     a. John's uncles are bachelors, but Betsy claims her uncle isn't.
        <a bachelor>

23

b. The women gave lectures at museums, and Sam volunteered to, also. <give a lecture at a museum>

(74) Inherent plurals do not:
John has living parents, and Bill does, too.
=<have living parents>, ≠<have a living parent>

4 Conclusions

(a) There's syntax in the ellipsis

(b) Elliptical identity is syntactic

(c) Surface properties of more items than we thought are determined by their syntactic relations to other elements in the structure (strong, and even most forms of weak, lexicalism are hopeless)

References

Aelbrecht, Lobke. 2006. IP-ellipsis in Dutch dialects. Ms., Katholieke Universiteit Brussel. (To appear in *Linguistics in the Netherlands*.)

Almeida, Diogo A. de A. and Masaya Yoshida. 2007. A problem for the preposition stranding generalization. *Linguistic Inquiry* 38:349-362.

Aoun, Joseph and Jairo Nunes. 2002. Vehicle Change Effects: An Argument for Move F. Ms., University of Southern California/ Universidade Estadual de Campinas.

Arregi, Karlos. 2007. Split questions in Spanish. Ms., University of Illinois, Urbana-Champaign.

Arregui, Ana, Charles Clifton, Jr., Lyn Frazier, and Keir Moulton. 2006. Processing elided verb phrases with flawed antecedents: The recycling hypothesis. *Journal of Memory and Language* 55:232–246.

Baker, Adam. 2007. VP-ellipsis and discourse resolution. Paper presented at the Amsterdam Colloquium, December 2007. (Ms., University of Chicago.)

Bühler, Karl. 1934;1978. *Sprachtheorie. Die Darstellungsfunktion der Sprache.* Ullstein: Frankfurt a.M. (Reprint of the first edition 1934.)

Chao, Wynn. 1987. *On ellipsis.* PhD thesis, University of Massachusetts, Amherst.

Chung, Sandra. 2000. Close encounters with pronouns in VP ellipsis. In the Jorge Hankamer Webfest. http://ling.ucsc.edu/Jorge/chung.html.

Chung, Sandra. 2005. Sluicing and the lexicon: The point of no return. Paper presented at the annual meeting of the Berkeley Linguistics Society. To appear in the Proceedings.

Chung, Sandra, William Ladusaw, and James McCloskey. 1995. Sluicing and logical form. *Natural Language Semantics* 3:239–282.

Collins, Chris. 2005. A smuggling approach to the passive in English. *Syntax* 8.2:81–120.

Coppock, Elizabeth. 2001. Gapping: In defense of deletion. In Mary Andronis, Christopher Ball, Heidi Elston, Sylvain Neuvel (eds.), *Proceedings from the 37th meeting of the Chicago Linguistics Society*, 133–148. Chicago Linguistics Society: Chicago, Ill.

Corver, Norbert and Marjo van Koppen. 2007a. Ellipsis in possessive noun phrases: a comparative approach. Ms., University of Utrecht, UiL-OTS.

Corver, Norbert and Marjo van Koppen. 2007b. Let's focus on noun phrase ellipsis. Ms., University of Utrecht, UiL-OTS.

van Craenenbroeck, Jeroen. 2004. *Ellipsis in Dutch dialects.* PhD thesis, Leiden University. (To appear in revised form with OUP.)

van Craenenbroeck, Jeroen. 2008. What does silence look like? On the unpronounced syntax of sluicing. Handout, talk presented at Yale University, October 2008.

van Craenenbroeck, Jeroen and Anikó Lipták. 2006. The crosslinguistic syntax of sluicing: Evidence from Hungarian relatives. *Syntax* 9.3: 248-274.

Culicover, Peter and Ray Jackendoff. 2005. *Simpler Syntax.* Oxford University Press: Oxford.

Dalrymple, Mary, Stuart M. Shieber, and Fernando Pereira. 1991. Ellipsis and Higher-Order Unification. *Linguistics and Philosophy* 14:399–452.

Fiengo, Robert, and Robert May. 1994. *Indices and identity.* MIT Press: Cambridge.

Fox, Danny and Howard Lasnik. 2003. Successive-cyclic movement and island repair: The difference between sluicing and VP-ellipsis. *Linguistic Inquiry* 34: 143–154.

Frazier, Lyn and Charles Clifton Jr. 2006. Ellipsis and discourse coherence. *Linguistics and Philosophy* 29:315–346.

Gengel, Kirsten. 2006. Phases and ellipsis. To appear in the Proceedings of the 37th meeting of the North East Linguistic Society.

Giannakidou, Anastasia. 2000. Negative ... concord? *Natural Language and Linguistic Theory.*

Giannakidou, Anastasia. 2006. N-words and negative concord. In Martin Everaert and Henk van Riemsdijk (eds.), *The Linguistics Companion.* Blackwell.

Giannakidou, Anastasia. 2007. The landscape of EVEN. *Natural Language and Linguistic Theory* 25: 39-81.

Giannakidou, Anastasia and Jason Merchant. 2002. Eliminating modules in Minimalism. Paper presented at the Maryland Mayfest.

Ginzburg, Jonathan and Ivan Sag. 2000. *Interrogative investigations.* CSLI: Stanford.

Goldberg, Lotus. 2005. Verb-stranding VP-ellipsis: A cross-linguistic study. PhD thesis, McGill University.

Ha, Seungwan. To appear. Contrastive focus: Licensor for Right Node Raising. In *Proceedings of NELS 37.* GLSA: UMass Amherst.

Haïk, Isabelle. 1987. Bound VPs that need to be. *Linguistics and Philosophy* 10: 503–530.

Hardt, Daniel. 1993. *Verb phrase ellipsis: Form, meaning, and processing.* PhD thesis, University of Pennsylvania. (Distributed as IRCS Report 93-23.)

Hardt, Daniel and Maribel Romero. 2004. Ellipsis and the structure of discourse. *Journal of Semantics* 21:375–414.

Harley, Heidi. 2006. Really External Arguments: Lessons about Voice from Applicatives, Causatives and Impersonals in Hiaki. Handout from a colloquium at UCLA.

Hartmann, Katharina. 2000. *Right node raising and gapping.* John Benjamins: Amsterdam.

Johnson, Kyle. 2000. Few dogs eat Whiskas or cats Alpo. In Kiyomi Kusumoto and Elisabeth Villalta (eds.), *U*MOP 23: Issues in semantics and its interfaces, 59–82. University of Massachusetts, Amherst.

Johnson, Kyle. 2001. What VP-ellipsis can do, what it can't, but not why. In Mark Baltin and Chris Collins (eds.), *The handbook of contemporary syntactic theory*, 439–479. Blackwell: Malden, Mass.

Johnson, Kyle. 2004. How to be quiet. CLS.

Johnson, Kyle. 2006. Gapping is not (VP) ellipsis. Ms., University of Massachusetts, Amherst.

Johnson, Kyle. 2008. Introduction. In Kyle Johnson (ed.), *Topics in ellipsis*. Cambridge University Press: Cambridge.

Keenan, Edward. 1971. Names, quantifiers, and the sloppy identity problem. *Papers in Linguistics* 4:211-232.

Kehler, Andrew. 2002. *Coherence in discourse.* CSLI: Stanford.

Kennedy, Christopher. 2003. Ellipsis and syntactic representation. In Susanne Winkler and Kerstin Schwabe (eds.), *The interfaces: Deriving and interpreting omitted structures*, 29–53. John Benjamins: Amsterdam.

Kennedy, Christopher and Jason Merchant. 2000. Attributive comparative deletion. *Natural Language and Linguistic Theory* 18:89–146.

Klima, Edward S. 1964. Negation in English. In Jerry Fodor and Jerrold Katz (eds.), *The structure of language: Readings in the philosophy of language*, 246–323. Prentice-Hall: Englewood Cliffs, NJ.

Kratzer, A. 1996. Severing the external argument from its verb. In J. Rooryck and L. Zaring, eds. Phrase Structure and the Lexicon, 109–137. Dordrecht: Kluwer.

Lasnik, Howard. 1995. Verbal morphology: Syntactic Structures meets the minimalist program. In H. Campos and P. Kempchinsky (eds.) Evolution and Revolution in Linguistic Theory: Essays in Honor of Carlos Otero. Georgetown University Press, pp. 251–275.

Lasnik, Howard. 2001. When can you save a structure by destroying it? In Minjoo Kim and Uri Strauss (eds.), *Proceedings of the North East Linguistic Society* 31, 301–320. Graduate Linguistics Students Association: Amherst, Mass.

Lasnik, Howard and Myung-Kwan Park. 2003. The EPP and the subject condition under sluicing. Linguistic Inquiry 34:649–660.

Lin, Vivian. 2002. Coordination and sharing at the interfaces. PhD thesis, MIT.

Lechner, Winfried. 2004. *Ellipsis in comparatives.* Mouton de Gruyter: Berlin.

Lobeck, Anne. 1995. *Ellipsis: Functional Heads, Licensing and Identification.* Oxford University Press: Oxford.

Lohndal, Terje and Liliane Haegeman. 2009. Negative concord is not multiple Agree. Paper presented at the LSA annual meeting, San Francisco.

McCawley, James. 1993. Gapping with shared operators. In *Proceedings of the Berkeley Linguistics Society*, 245–253. Berkeley Linguistics Society, Berkeley, Ca.

McCloskey, James. 1991. Clause structure, ellipsis, and proper government in Irish. *Lingua* 85:259-302.

Merchant, Jason. 2001. *The syntax of silence: Sluicing, islands, and the theory of ellipsis.* Oxford University Press: Oxford.

Merchant, Jason. 2004. Fragments and ellipsis. *Linguistics and Philosophy* 27: 661–738.

Merchant, Jason. 2006. Why no(t)? *Style* 20.1–2:20–23. (Special issue edited by William Salmon and Charalabos Kalpakidis as a Festschrift for Haj Ross.)

Merchant, Jason. 2008a. An asymmetry in voice mismatches in VP-ellipsis and pseudogapping. *Linguistic Inquiry* 39.1: 169-179.

Merchant, Jason. 2008b. Variable island repair under ellipsis. In Kyle Johnson (ed.), *Topics in ellipsis*, 132-153. Cambridge University Press: Cambridge.

Morgan, Jerry. 1973. Sentence fragments and the notion 'sentence'. In Braj Kachru, Robert Lees, Yakov Malkiel, Angelina Pietrangeli, and Sol Saporta (eds.), Issues in linguistics, 719–751. University of Illinois Press: Urbana.

Nykiel, Joanna and Ivan Sag. 2008. Sluicing and stranding. Invited talk. Workshop on elliptical constructions. U Jussieu, Paris, June 20, 2008.

Ortner, Hanspeter. 1985. Welche Rolle spielen die Begriffe "Ellipse", "Tilgung", "Ersparung" usw. in der Sprachbeschreibung? In Reinhard Meyer-Hermann and Hannes Rieser (eds.), *Ellipsen und fragmentarische Ausdrücke*, Bd 2, 165–202. Max Niemeyer: Tübingen.

Postal, Paul. 2001. Some remarks on VP-ellipsis and parasitic gaps. In Peter Culicover and Paul Postal (eds.), *Parasitic Gaps*. MIT Press: Cambridge, Mass.

Potts, Christopher. 2000. When even *no*'s Neg is splitsville. In Nathan Sanders (ed.), Jorge Hankamer WebFest, http://ling.ucsc.edu/Jorge/potts.html.

Potts, Christopher. 2002. The syntax and semantics of *as*-parentheticals. *Natural Language and Linguistic Theory* 20: 623–689.

Potsdam, Eric. 1997. English Verbal Morphology and VP Ellipsis. In *The Proceedings of the 27th Meeting of the North East Linguistic Society*, 353–368. Amherst, Ma.: GLSA, University of Massachusetts at Amherst.

Reinhart, Tanya. 1991. Elliptic conjunctions—Non-quantificational QR. In Asa Kasher (ed.), *The Chomskyan turn*, 360–384. Blackwell: Cambridge, Mass.

Rooryk, Johan. 1997. On passive as partitive quantification. In *Projections and Interface Conditions*, ed. by Anna-Maria di Sciullo, Oxford: Oxford University Press, 201–234.

Ross, John Robert. 1967. *Constraints on variables in syntax.* PhD thesis, MIT.

Ross, John R. 1969. Guess who? In Robert Binnick, Alice Davison, Georgia Green, and Jerry Morgan (eds.), *Papers from the 5th regional meeting of the Chicago Linguistic Society*, 252–286. Chicago Linguistic Society: Chicago, Ill.

Sag, Ivan. 1976. *Deletion and Logical Form.* PhD thesis, MIT.

Sag, Ivan. 2006. What's LF got to do with it? Presentation at organized session on ellipsis, annual meeting of the Linguistic Society of America, Albuquerque, NM.

Sportiche, Dominique. 2000. Ms., UCLA.

Toosarvandani, Maziar. 2008. Ellipsis in Farsi complex predicates. *Syntax.*

Vicente, Luis. 2006. Negative short replies in Spanish. Ms., University of Leiden.

Vicente, Luis. 2008. Syntactic isomorphism and non-isomorphism under ellipsis. Ms., UC-Santa Cruz.

Warner, Anthony. 1985. *The structure of English auxiliaries: A phrase structure grammar.* Indiana University Linguistics Club: Bloomington, Ind.

Williams, Edwin. 1977. Discourse and Logical Form. *Linguistic Inquiry* 8: 101–139.

Winkler, Susanne. 2005. *Ellipsis and focus in generative grammar.* Mouton de Gruyter: Berlin.

Winkler, Susanne and Kerstin Schwabe. 2003. Exploring the interfaces from the perspective of omitted structures. In Susanne Winkler and Kerstin

Schwabe (eds.), *The interfaces: Deriving and interpreting omitted structures*, 1–26. John Benjamins: Amsterdam.
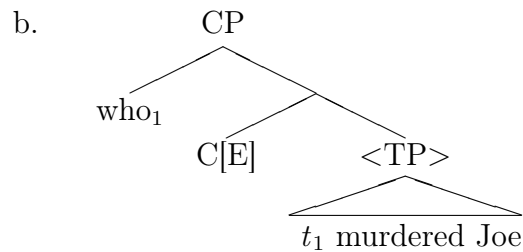
Yatsushiro, Kazuko and Uli Sauerland. 2006. [Feminine] in a high position. Snippets 13: 11–12. http://www.ledonline.it/snippets.

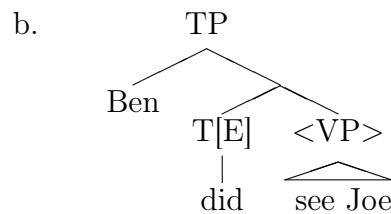Zeijlstra, Hedde. 2008. Negative concord is syntactic agreement. Ms., University of Amsterdam.

Appendix: Triggering ellipsis: The [E] feature

(Merchant 2001, van Craenenbroeck 2004, Aelbrecht 2006, van Craenenbroeck and Lipták 2006, Toosarvandani 2008, Vicente 2006, Corver and van Koppen 2007a,b, and Ha to appear)
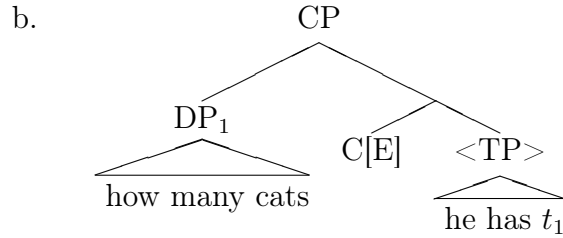
(75)   a.   Someone murdered Joe, but we don't know who.
       b.

(76)   a.   Abby didn't see Joe, but Ben did.
       b.

(77)   a. $[_{TP_A}$ Max has [five dogs]$_F$], but I don't know [how many cats$_F$] $<[_{TP_E}$ he has $t]>$.

30

b.

   c. $\llbracket E \rrbracket = \lambda p : e\text{-}GIVEN(p).p$, where an expression ϵ is $e\text{-}$
      $GIVEN$ iff ϵ has a salient antecedent A such that, modulo
      $\exists$-type shifting, $\llbracket A \rrbracket \to$ F-clo(ϵ) and $\llbracket \epsilon \rrbracket \to$ F-clo(A) (Merchant 2001, 2004a)

   d. F-clo$(\llbracket TP_A \rrbracket) = \exists x[have(x)(Max)]$

   e. $\llbracket TP_E \rrbracket = \exists x[have(x)(Max)]$

(78)   Chung 2005's lexico-syntactic requirement (applied in addition to e-givenness):
     No new words ('pedantic' recoverability)
     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.

This condition still requires a semantic identity condition (Chung endorses e-givenness) to rule out:

(79)   *Felicia loves Joe, but we don't know why <Joe loves Felicia>.

(80)   The E feature imposes
    a. *e-GIVENness*, and
    b. **No new morphemes requirement** (adapted from Chung 2005):
      $\forall m[(m \in M_E \land m \neq t) \to \exists m'(m' \in M_A \land m = m')]$,
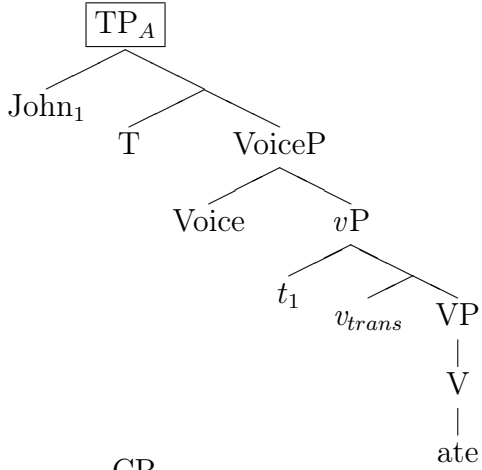   where M_E is the set of morphemes in the elided phrase marker and M_A is the set of morphemes in the antecedent phrase marker. $(M_E - t \subseteq M_A)$
      (Any non-trace morpheme m that occurs in an elided phrase must have an equivalent overt correlate m' in the elided phrases's antecedent.)
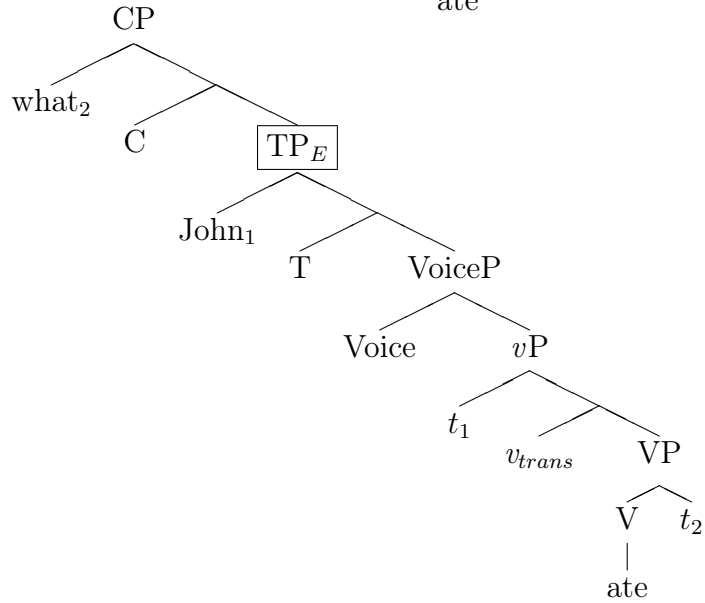
4.0.1 Capturing the alternations and the non-alternations

(81)   a.   John ate, but I don't know what$_1$ <John ate t_1>.

   b.

```
            TP_A
         /       \
     John_1       \
              T        VoiceP
                     /         \
                 Voice          vP
                             /      \
                           t_1       \
                                v_trans   VP
                                           |
                                           V
                                           |
                                          ate
```

   c.

```
                 CP
              /       \
         what_2        \
                   C        TP_E
                         /        \
                    John_1         \
                              T        VoiceP
                                     /         \
                                 Voice          vP
                                             /      \
                                           t_1       \
                                              v_trans    VP
                                                        /    \
                                                       V      t_2
                                                       |
                                                      ate
```

   d.   F-clo($[\![TP_A]\!]$) = $[\![TP_A]\!]$) = $\exists x[ate(x)(john)]$ $\leftrightarrow$
        F-clo($[\![TP_E]\!]$) = $[\![TP_E]\!]$) = $\exists x[ate(x)(john)]$

   e. M_A = {John, T, Voice, v_{trans}, ate} $\supseteq$
        $M_E - t$ = {John, T, Voice, v_{trans}, ate}

32

(82)   a. Mary was flirting, and everyone wants to know [with who]$_2$ <Mary was flirting t_2>.

   b. F-clo($[\![TP_A]\!]$) = $[\![TP_A]\!]$ = $\exists x[flirt(x)(mary)] \leftrightarrow$
      F-clo($[\![TP_E]\!]$) = $[\![TP_E]\!]$ = $\exists x[flirt(x)(mary)]$

   c. M_A = {Mary, T, was, Voice, v_{unerg}, flirting} $\supseteq$
      $M_E - t$ = {Mary, T, was, Voice, v_{unerg}, flirting}

(83)   a. *Mary was flirting, but they wouldn't say who <Mary was flirting with t>.

   b. F-clo($[\![TP_A]\!]$) = $[\![TP_A]\!]$ = $\exists x[flirt(x)(mary)] \leftrightarrow$
      F-clo($[\![TP_E]\!]$) = $[\![TP_E]\!]$ = $\exists x[flirt(x)(mary)]$

   c. M_A = {Mary, T, was, Voice, v_{unerg}, flirting} $\boxed{\neq}$
      $M_E - t$ = {Mary, T, was, Voice, v_{unerg}, flirting, with}

(84)   a. The janitor must remove the trash whenever it is apparent that it should be. <[$_{vP}$ removed t]>

   b. F-clo($[\![vP_A]\!]$) = $[\![vP_A]\!]$ = $\exists x[remove(the\_trash)(x)] \leftrightarrow$
      F-clo($[\![vP_E]\!]$) = $[\![vP_E]\!]$ = $\exists x[remove(the\_trash)(x)]$

   c. M_A = {v_{trans}, remove, the, trash} $\supseteq$
      $M_E - t$ = {v_{trans}, remove}

(85)   a. *Someone murdered Joe, but we don't know who by <[$_{TP}$ Joe was murdered t]>.

   b. F-clo($[\![TP_A]\!]$) = $[\![TP_A]\!]$ = $\exists x[murder(joe)(x)] \leftrightarrow$
      F-clo($[\![TP_E]\!]$) = $[\![TP_E]\!]$ = $\exists x[murder(joe)(x)]$

   c. M_A = {T, Voice[ACT], someone, v_{trans}, murder, Joe} $\boxed{\neq}$
      $M_E - t$ = {T, was, Voice[PASS], 'someone', v_{trans}, murder, Joe}