

There's less to words than meets the eye

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1 Simplicity vs. abstractness

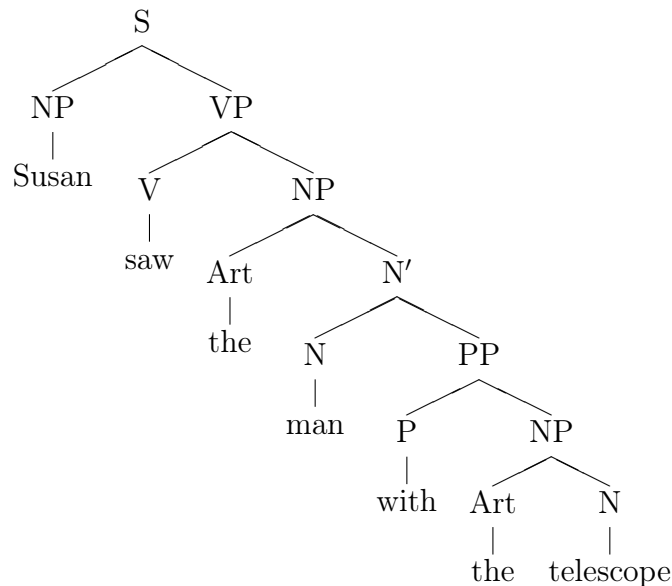
1.1 Two kinds of traditional abstractness in syntax

- (1) a. abstract_1 (phrase structurally abstract) structure: models the grouping and relations between groups of words that is not physically present in the speech signal (known as constituent, geometrical, hierarchical, or phrase structure)
- b. abstract_2 (phonologically abstract) structure: consists of nodes in the geometry which may not correspond to any pronounced elements in the speech stream (equivalent to 'words', single lexical nodes, or to phrases).

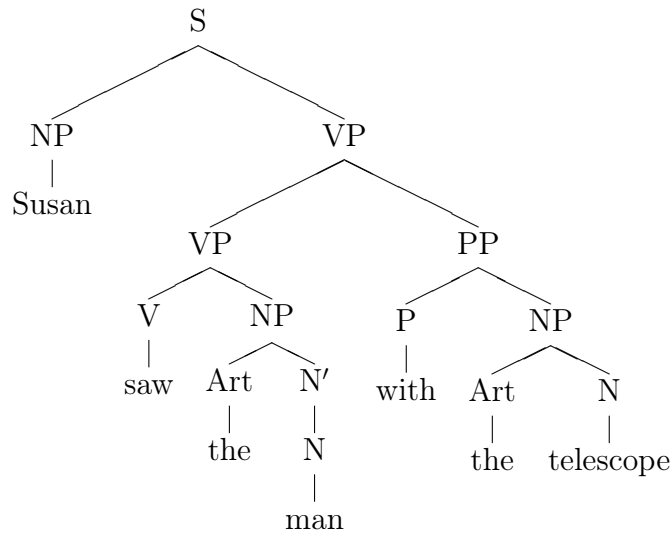
Why do we need phrase structural abstractness? (Why can't we just model sentences as words in some order—like beads on a string?) One answer: Structural ambiguities:

- (2) Susan saw the man with the telescope.

- (3) a.



b.



Movement (word order alternations) is sensitive to phrase structure

- (4) a. With the telescope, Susan saw the man. **Unambiguous**
b. The man with the telescope, Susan saw. **Unambiguous**
c. The man, Susan saw with the telescope. **Unambiguous**

- (5) “this crime covers anyone who *intentionally* accesses a federal computer without authorization, and by means of one or more instances of such conduct alters, damages, or destroys information”

18 U.S.C. 1030(a)(5)(A) debated in *United States v. Morrison* (1991).

- a. Adverb [VP and VP]: **defendant**
b. [Adverb VP] and [VP]: **plaintiff**

- (6) VP ellipsis in English

- a. Bill should collect butterflies. Jill should collect butterflies, too.
b. Bill should collect butterflies. Jill should, too.

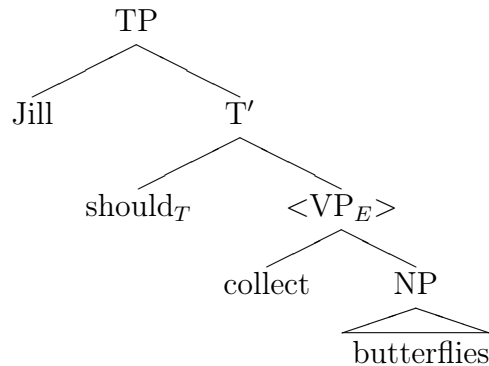
- (7) So what *is* ellipsis?

- a. “*Eclipsis* est defectus dictionis, in quo necessaria verba desunt” (St. Isidore of Sevilla (d. 636), *Etymologiarum*, Liber I ‘De grammatica’, ch. XXXIV ‘De Vitiis’, sec. 10); *Ellipsis is an incompletion of speech, in which necessary words are absent.*

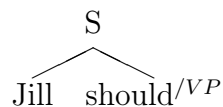
- b. “ellipsis, or speech by half-words, [is the peculiar talent] of ministers and politicians” (Alexander Pope, 1727, *Peri Bathous*, p. 115)

- (8) Two possible analyses for the missing VP:

- a. The VP is syntactically present, but unpronounced ('elided'):



- b. The VP isn't there at all (there is no VP node in the syntax):



(9) Alternatives

- a. **'Surface' lexicalism (Your grandma's syntax)**

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.

WYHIWYG theory (What you hear is what you get): Ginzburg and Sag 2000, Culicover and Jackendoff 2005, much work in categorial grammars, some work in Autolexical Grammar (Sadock 1991)—part of the *Simpler Syntax* Hypothesis

Words are words, and that's all she wrote. Nothing mysterious, hidden, silent. All 'word'-information relevant to the syntax is located at the position of the pronounced word itself.

- b. **Traditional lexicalism**

Some phrases and heads have no pronunciation.

Corollary: Their presence can only be detected indirectly.

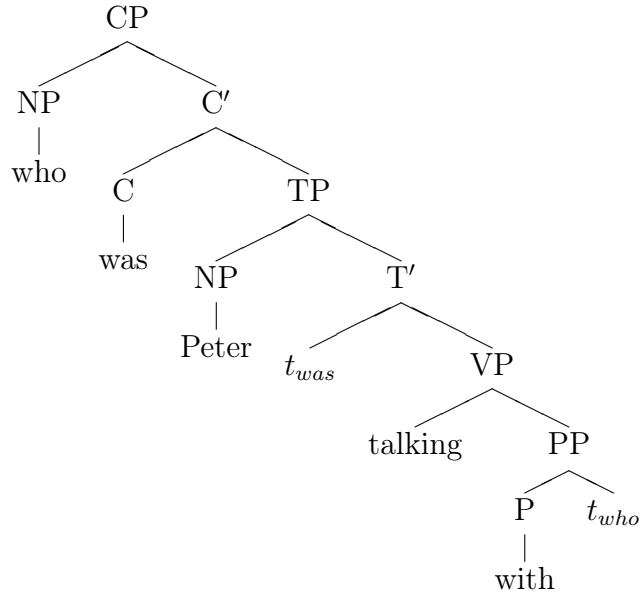
(Winkler 2005 et multi alii; see Winkler and Schwabe 2003 for an overview) What we traditionally call 'words' may have less information than we think: they may in fact be (morphological) reflexes of relations with other nodes in the syntax (and these other nodes may not have phonologies)

2 Evidence for phonologically abstract phrasal structures

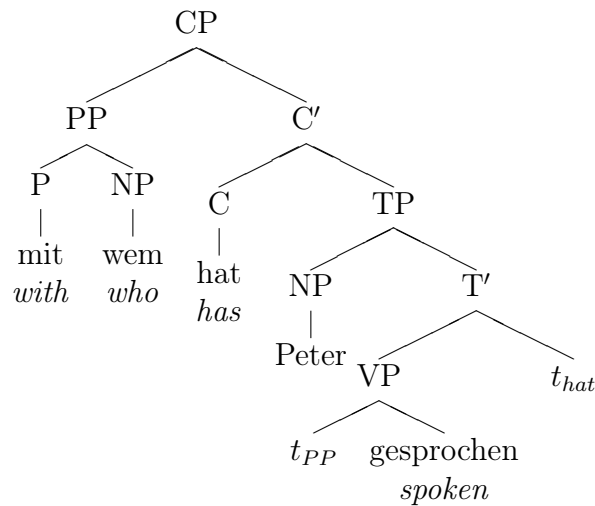
2.1 Sluicing and the preposition-stranding generalization

- Two kinds of languages with *wh*-movement in questions: those that allow ‘stranding’ a governing preposition (English, Swedish, Norwegian, Icelandic, Danish) and those that don’t (Greek, German, Russian, lots of others):

(10)



(11)



- Sluicing = the elision of the sentential part of a question (Ross 1969, Chomsky 1972):

- (12) a. **Regular wh-question:**
Abby invited someone. You'll never guess who she invited.
- b. **Sluiced wh-question:**
Abby invited someone. You'll never guess who.

- Prediction: If ellipsis is phonologically abstract syntax (but otherwise regular syntax), then sluiced wh-questions in non-P-stranding languages like German should look just like regular wh-questions. (That is, there should be a correlation between elided and non-elided wh-questions.)¹

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

- (14) **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?'

- (15) **German**
- a. Peter hat mit jemandem gesprochen, aber ich weiss nicht, *(mit) wem.
Peter has with someone spoken but I know not with who
- b. *Wem hat Peter mit gesprochen?
who has Peter with spoken

- (16) **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

- (17) **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

¹Important refinements to this picture are found in Almeida and Yoshida 2007, van Craenenbroeck 2008, Vicente 2008, and Nykiel and Sag 2008, among others.

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 paired items, 40 subjects.

- (18) a. Haben sie mit dem MANN gesprochen? Nein, mit der FRAU.
have they with the man spoken no with the woman
b. Haben sie mit dem MANN gesprochen? Nein, der FRAU.
have they with the man spoken no the woman

(19) 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: $t_1(1,39) = 6.35$, $p < .001$, $t_2(1,15) = 5.17$, $p < .001$

2.2 Case matching

(20) **German** (*schmeicheln* ‘flatter’ assigns dative, *loben* ‘praise’ assigns accusative; Ross 1969)

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

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

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

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

2.3 Locality (‘island’) effects

2.3.1 VP-ellipsis (Sag 1976, Williams 1977, 1997, 2003, Haik 1987, López 1999, 2000, Postal 2001, Lasnik 2001, Fox and Lasnik 2001, Kennedy and Merchant 2000, Merchant 2001, 2008a, Kennedy 2003, etc.)

- (21) a. *I read every book you introduced me to a guy who did. <read>
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. *Abby knows five people who have dogs, but cats, she doesn't <know five people who have>.
- d. *Which film did you refuse to see because Roger was so revolted when he did after renting?

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

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

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

- (23) *Some wanted to hire the woman who worked on Greek, and others Albanian.
 (24) *SHE discussed my question which LETTERS we wrote and HE which BOOKS. (Winkler 2005:61 (22b))

- Apparent conclusion: There is (regular, but unpronounced) syntactic structure inside ellipsis sites. (But cf. Goldberg 2006, Ambridge and Goldberg 2008 for a different approach.)

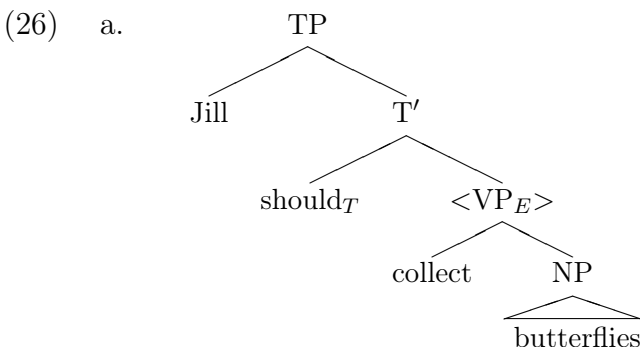
2.4 A quotation to remember

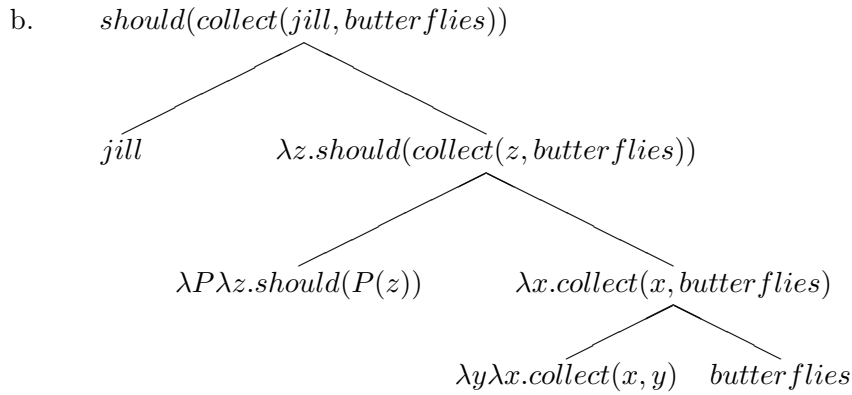
As Culicover and Jackendoff 2005:246fn11 put it, "If [such] cases ... were ungrammatical, that would be far better evidence of the reality of invisible [*sic*] structure."

2.5 Syntactic and semantic representations and the mapping between them

- (25) VP ellipsis in English
 a. Bill should collect butterflies. Jill should, too.
 b. Bill should collect butterflies. Jill should collect butterflies, too.

2.5.1 'Deletion'/Ellipsis approach
Abstract₂ + function application [Fregean hypothesis]





(27) Rules

- a. Syntactic: $should [_ VP]$, etc.
- b. Semantics: If f is a expression of type τ containing one or more instances of a free variable h of type σ and g is an expression of type σ , then $\lambda h_\sigma[f_\tau](g_\sigma) \rightsquigarrow f_\tau^{h/g}$.
- c. Phonology: $\llbracket should \rrbracket^p \rightsquigarrow /ʃʊd/$, $\llbracket X_E \rrbracket^p \rightsquigarrow \emptyset$, etc.

2.5.2 Indirect Licensing

WYSIWYG syntax + additional mapping rules [Simpler Syntax hypothesis]

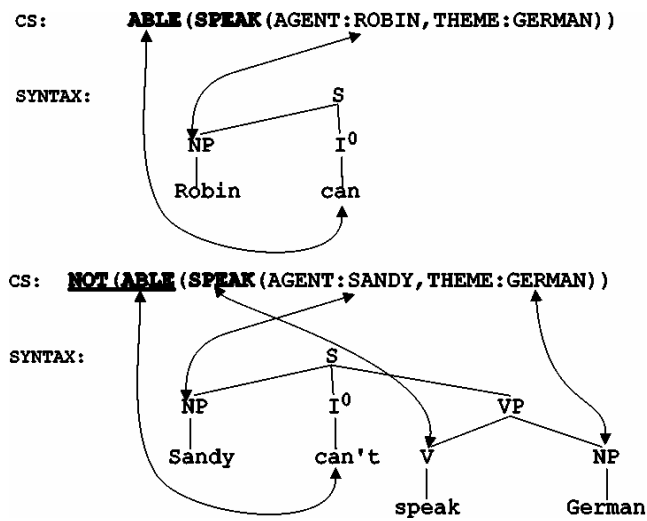
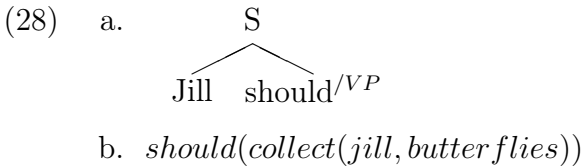


Figure 1: An empty VP and its antecedent in Simpler Syntax

(29) Rules

- a. Syntactic: $S \rightarrow NP I^0 (VP)$, etc.
should [$_ (VP)$], etc.
- b. Semantics:

- i. **Argument/Modifier Rule**

- CS: $[F \dots X_i \dots]$ $\Leftrightarrow_{default}$ Syntax: $\{\dots, YP_i, \dots\}$

- ii. R1': If X is the meaning of the NP-daughter-of-S whose predicate meaning is PRED, then let $PRED(AGENT: _, \dots) = PRED(AGENT: X, \dots)$

- iii. **Bare Argument Ellipsis** (C&J 2005:265)

- Syntax: $[_U XP_i^{ORPH}]^{IL}$ Semantics: $[f(X_i)]$

- iv. If f is an expression in CS_a and f cannot be determined from $SYNTAX_a$ by application of Rules $R_1 \dots R_n$, then “ f amounts to the presupposition of the antecedent, constructed by substituting variables for the [necessary elements] in the CS of the antecedent” (Culicover and Jackendoff 2005:276)

- c. Phonology: $[\text{should}]^p \rightsquigarrow /ʃʊd/$, etc.

3 Phonologically abstract heads: The null Voice head and Voice mismatch tolerance under ellipsis

3.1 High/Big ellipses: No voice mismatches

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

(30) Sluicing (data discussed in Merchant 2001, Chung 2005)

- a. *Joe was murdered, but we don't know who. <murdered him>
- b. *Someone murdered Joe, but we don't know who by. <he was murdered>

(31) Illicit German voice mismatches, intended nonsubject correlate: $act_A \rightsquigarrow pass_E$; $pass_A \rightsquigarrow act_E$

- a. * Peter hat jemand ermordet, aber sie wissen nicht, wer.
Peter has someone murdered but they know not who.NOM
'(lit.) Peter murdered someone, but they don't know who.'
- b. * Peter wurde ermordet, aber sie wissen nicht, wer.
Peter was murdered, but they know not who.NOM
'(lit.) Peter was murdered but they don't know who.'

(32) Illicit German voice mismatches, intended subject correlate: $act_A \rightsquigarrow pass_E$; $pass_A \rightsquigarrow act_E$

- a. * Jemand hat Peter ermordet, aber sie wissen nicht, von wem.
someone has Peter murdered but they know not by whom.DAT
'(lit.) Someone murdered Peter, but they don't know by whom.'

- b. * Jemand wurde ermordet, aber sie wissen nicht, wen.
someone was murdered, but they know not who.ACC
 ‘(lit.) Someone was murdered but they don’t know whom.’

(33) Nonelliptical controls

- a. Peter hat jemand ermordet, aber sie wissen nicht, wer von ihm
Peter has someone murdered but they know not who.NOM by him
 ermordet wurde.
murdered was
 ‘Peter murdered someone, but they don’t know who was killed by him.’
- b. Peter wurde ermordet, aber sie wissen nicht, wer ihn ermordet hat.
Peter was murdered but they know not who.NOM him murdered has
 ‘Peter was murdered but they don’t know who murdered him.’
- c. Jemand hat Peter ermordet, aber sie wissen nicht, von wem er
someone has Peter murdered but they know not by whom.DAT he
 ermordet wurde.
murdered was
 ‘Someone murdered Peter, but they don’t know who he was murdered by.’
- d. Jemand wurde ermordet, aber sie wissen nicht, wen man ermordet
someone was murdered, but they know not who.ACC one murdered
 hat.
has
 ‘?Someone was murdered but they don’t know who they murdered.’

(34) 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 Psychologin.
who.NOM has the boy examined? by a psychologist
 ‘Q: Who examined the boy? A: [intended:] (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: [intended:] A psychologist (ex-
 amined him).’

(35) Gapping

- a. *Some bring roses but lilies by others.
- b. *Lilies are brought by some and others roses.

(36) 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.’

Nonelliptical controls

- (37) Nonelliptical counterparts to sluicing: English
 - a. Joe was murdered, but we don’t know who murdered Joe.
 - b. Someone murdered Joe, but we don’t know who Joe was murdered by.
- (38) Nonelliptical counterparts to sluicing: German
 - a. Peter hat jemanden ermordet, aber sie wissen nicht, wer von ihm
Peter has someone murdered but they know not who.NOM by him
 ermordet wurde.
murdered was
 ‘Peter murdered someone, but they don’t know who was killed by him.’
 - b. Peter wurde ermordet, aber sie wissen nicht, wer ihn ermordet hat.
Peter was murdered but they know not who.NOM him murdered has
 ‘Peter was murdered but they don’t know who murdered him.’
 - c. Jemand hat Peter ermordet, aber sie wissen nicht, von wem er
someone has Peter murdered but they know not by whom.DAT he
 ermordet wurde.
murdered was
 ‘Someone murdered Peter, but they don’t know who he was murdered by.’
 - d. Jemand wurde ermordet, aber sie wissen nicht, wen jemand
someone was murdered, but they know not who.ACC one
 ermordet hat.
murdered has
 ‘Someone was murdered but they don’t know whom someone murdered.’
- (39) Nonelliptical counterparts to fragment answers
 - a. Q: Who is sending you to Iraq? A: I’m being sent by Bush.
 - b. i. Q: Wer hat den Jungen untersucht? A: Er wurde von einer
who.NOM has the boy examined? he was by a
 Psychologin untersucht.
psychologist examined
 ‘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 hat ihn untersucht.
psychologist.NOM has him examined

‘Q: Who was the boy examined by?’ A: A psychologist examined him.’

- (40) Nonelliptical counterparts to gapping
- a. Some bring roses and lilies are brought by others.
 - b. Lilies are brought by some and others bring roses.
- (41) Nonelliptical counterparts to stripping/Bare Argument Ellipsis
- a. MAX brought the roses—they weren’t brought by AMY!
 - b. Der Junge wurde von einer Psychologin untersucht, und ein *the boy was by a psychologist examined, and a* Kinderarzt hat ihn auch untersucht. *pediatrician.NOM has him too examined.*
‘The boy was examined by a psychologist, and a pediatrician examined him, too.’

3.1.1 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)

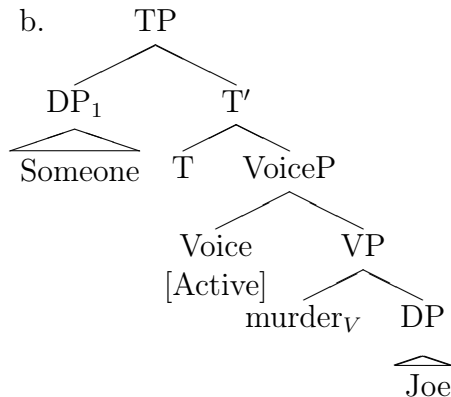
- (42) Active antecedent, passive ellipsis
- a. The janitor must remove the trash whenever it is apparent that it should be. <removed>
 - b. ... there was really no one at the meeting who could answer the question the way it should be. <answered> (‘Member comments’, Evergreen, Newspaper of the Hyde Park 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)
- (43) 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)

3.2 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, Collins 2005):

- (44) a. Someone murdered 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

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

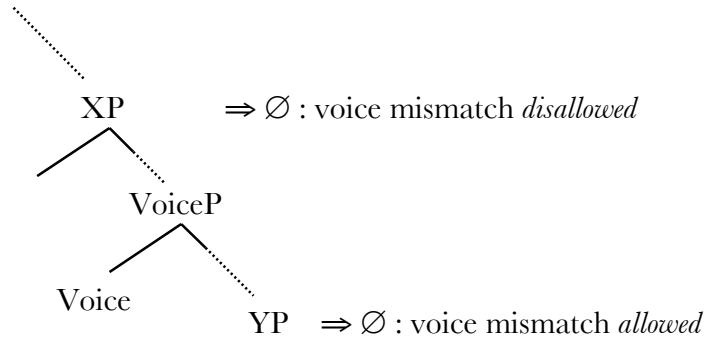
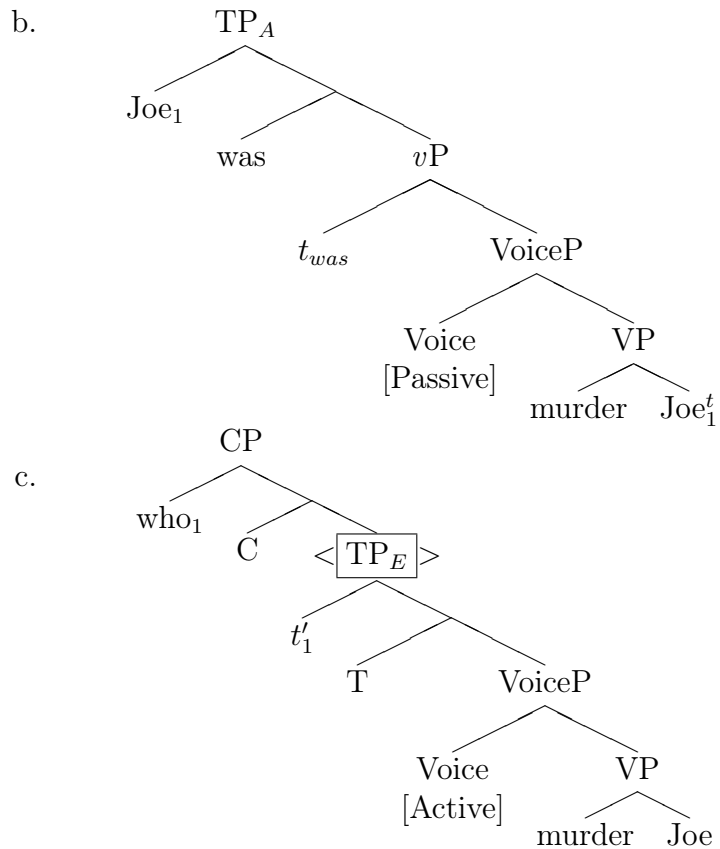


Figure 2: The basic geometry of licit vs. illicit voice mismatches



TP deletion includes Voice head; $TP_A \neq TP_E$

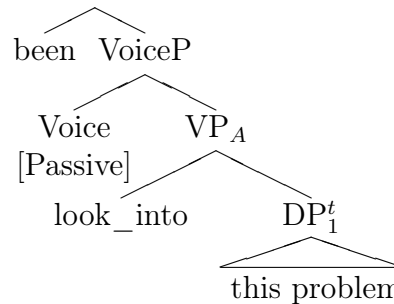
(46) The auxiliary isn't the culprit:

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

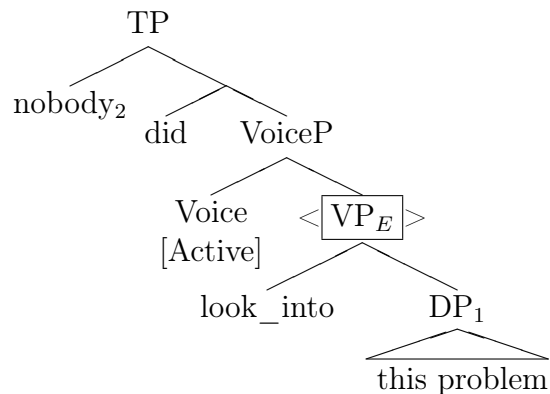
(‘(lit.) Petros was killed, but we don’t know who.’)

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

b. [_{DP} This problem]₁ was to have *v*P



c.



Conclusion: VP-deletion does not include the Voice head

3.2.1 Another argument, from morphology

Warner 1985, Lasnik 1995, Potsdam 1997, Roberts 1998 (see also McCloskey 1991, Goldberg 2005 for related points)

(48) In general, English verbs in VP_A~VP_E pairs (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>

(49) 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 (via Agree with T) in the course of the derivation.

Conclusion: Identity is between syntactic phrase markers

3.3 Other mismatches: Inflectional feature variance

Examples of ‘lexical’ information apparently triggered from outside the word it surfaces on.

(50) 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).’

- (51) a. Probe/trigger: DP[ϕ :3smasc]
 b. Goal: A[ϕ :_]
 c. Agree(DP,A; ϕ) \rightsquigarrow A[ϕ :3smasc]

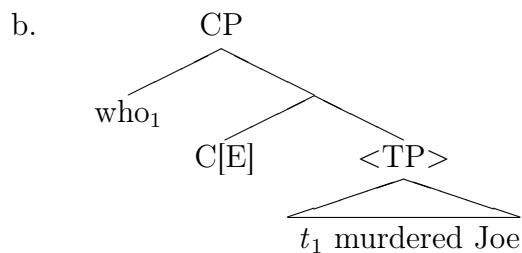
(52) **Idea:**

Whenever we find an apparent mismatch, the trigger is *outside* the ellipsis site, while the goal is inside.

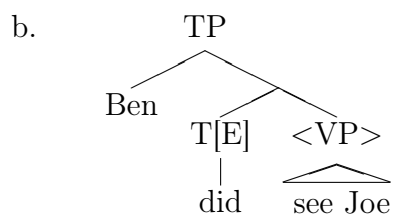
4 Triggering ellipsis: The [E] feature

(Merchant 2001, van Craenenbroeck 2004, Aelbrecht 2006, van Craenenbroeck and Lipták 2006, Toosarvandani 2006, Vicente 2006, Corver and van Koppen 2007a,b, and Ha to appear; cf. Lobeck 1995, López 1999, 2000 for notionally related restrictions on *pro*)

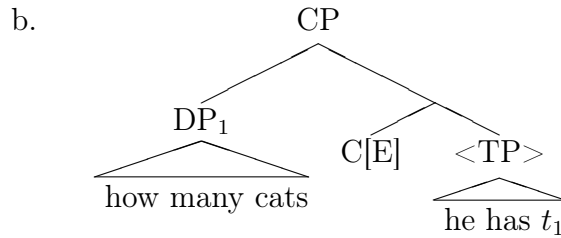
(53) a. Someone murdered Joe, but we don’t know who.



(54) a. Abby didn’t see Joe, but Ben did.



- (55) a. $[_{TP_A}$ Max has [five dogs] $_F$], but I don't know [how many cats $_F$] $\langle [_{TP_E}$ he has t] \rangle .



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

- (56) 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.

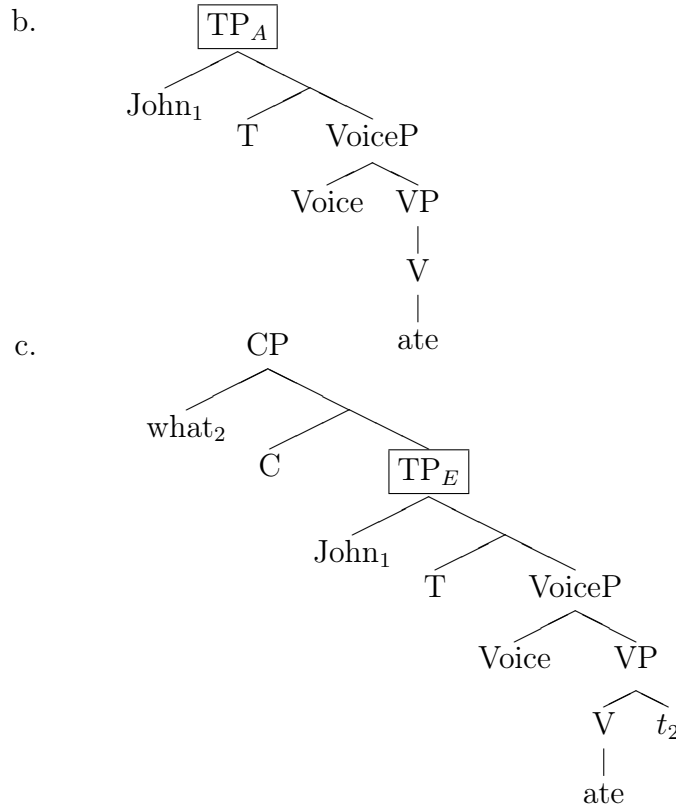
This condition still requires a semantic identity condition (Chung endorses e-givenness) to rule out:

- (57) *Felicia loves Joe, but we don't know why \langle Joe loves Felicia \rangle .

- (58) The E feature imposes
- e-GIVENness*, and
 - No new morphemes requirement** (adapted from Chung 2005):
 $\forall m[(m \in M_E \wedge m \neq t) \rightarrow \exists m'(m' \in M_A \wedge m = m')]$,
 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

- (59) a. John ate, but I don't know what $_1$ \langle John ate t_1 \rangle .



- d. $F\text{-clo}(\llbracket TP_A \rrbracket) = \llbracket TP_A \rrbracket = \exists x[ate(x)(john)] \leftrightarrow$
 $F\text{-clo}(\llbracket TP_E \rrbracket) = \llbracket TP_E \rrbracket = \exists x[ate(x)(john)]$
- e. $M_A = \{John, T, Voice, ate\} \supseteq$
 $M_E - t = \{John, T, Voice, ate\}$

(60) a. Brad was flirting, and everyone wants to know [with who]₂ < Brad was flirting t_2 >.

- b. $F\text{-clo}(\llbracket TP_A \rrbracket) = \llbracket TP_A \rrbracket = \exists x[flirt(x)(brad)] \leftrightarrow$
 $F\text{-clo}(\llbracket TP_E \rrbracket) = \llbracket TP_E \rrbracket = \exists x[flirt(x)(brad)]$

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

(61) a. * Brad was flirting, and everyone wants to know who < Brad was flirting with t >.

- b. $F\text{-clo}(\llbracket TP_A \rrbracket) = \llbracket TP_A \rrbracket = \exists x[flirt(x)(brad)] \leftrightarrow$
 $F\text{-clo}(\llbracket TP_E \rrbracket) = \llbracket TP_E \rrbracket = \exists x[flirt(x)(brad)]$

- c. $M_A = \{Brad, T, was, Voice, flirting\} \not\supseteq$
 $M_E - t = \{Brad, T, was, Voice, flirting, with\}$

(62) a. The janitor must remove the trash whenever it is apparent that it should be. <[v_P removed t]>

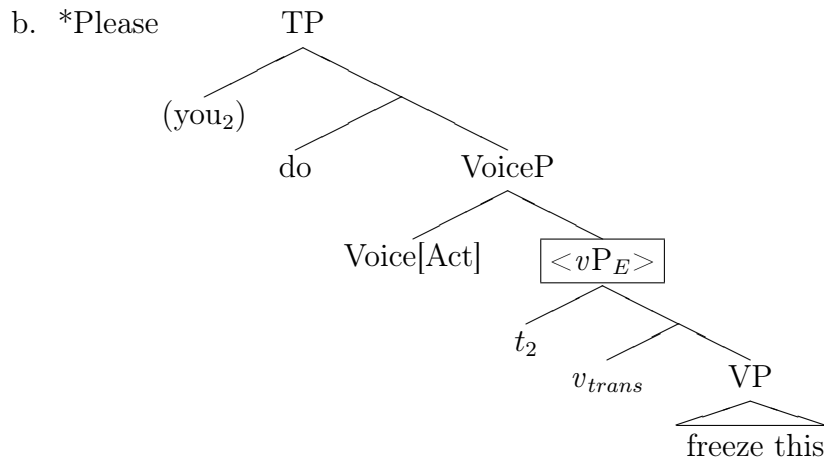
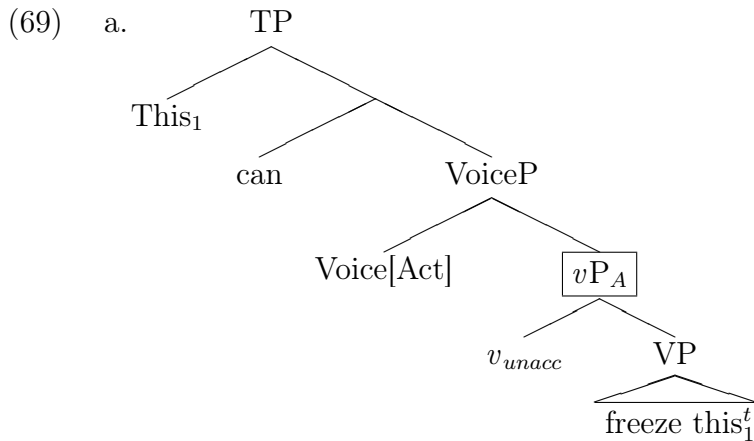
- b. $F\text{-clo}(\llbracket vP_A \rrbracket) = \llbracket vP_A \rrbracket = \exists x[\text{remove}(\text{the_trash})(x)] \leftrightarrow$
 $F\text{-clo}(\llbracket vP_E \rrbracket) = \llbracket vP_E \rrbracket = \exists x[\text{remove}(\text{the_trash})(x)]$
- c. $M_A = \{\text{remove, the, trash}\} \supseteq$
 $M_E - t = \{\text{remove}\}$
- (63) a. *Someone murdered Joe, but we don't know who by $\langle [_{TP} \text{Joe was murdered } t] \rangle$.
- b. $F\text{-clo}(\llbracket TP_A \rrbracket) = \llbracket TP_A \rrbracket = \exists x[\text{murder}(\text{joe})(x)] \leftrightarrow$
 $F\text{-clo}(\llbracket TP_E \rrbracket) = \llbracket TP_E \rrbracket = \exists x[\text{murder}(\text{joe})(x)]$
- c. $M_A = \{\text{T, Voice[ACT], someone, murder, Joe}\} \not\subseteq$
 $M_E - t = \{\text{T, was, Voice[PASS], 'someone', murder, Joe}\}$

4.1 Argument structure alternations under ellipsis

4.1.1 Subject/non-subject alternations

- (64) Nonelliptical alternations
- a. This can freeze. Please freeze this.
- b. Bill melted the copper vase, and the magnesium vase melted, too.
- c. Maria still tried to break the vase even though it wouldn't break.
- (65) a. Eklisan ena đromo.
closed.3p a.ACC road.ACC
 'They closed a road.'
- b. Enas đromos eklise.
a.NOM road.NOM closed.3s
 'A road closed.'
- (66) Ellipsis: No alternations
- a. This can freeze. *Please do. (Johnson 2004:7)
- b. *Bill melted the copper vase, and the magnesium vase did, too. (Sag 1976:160 (2.3.48))
- c. *Maria still tried to break the vase even though it wouldn't. (Houser, Mikkelsen, and Toosarvandani 2007)
- (67) a. * Eklisan ena đromo, alla đen ksero pjos. $\langle \text{eklise} \rangle$
closed.3p a.ACC road.ACC but not know.1s which.NOM closed.3s
 (intended: 'They closed a road, but I don't know which one (closed).')
- b. Eklisan ena đromo, alla đen ksero pjon. $\langle \text{eklisan} \rangle$
closed.3p a.ACC road.ACC but not know.1s which.ACC closed.3p
 'They closed a road, but I don't know which one.'

- (68) a. Causative and anticausative/unaccusatives differ in their v
 $v_{trans} \neq v_{unacc}$
 b. Voice selects vP
 Voice takes as its complement the vP which may introduce the external argument, as Collins 2005 proposes on independent grounds.
 c. Voice hosts the E feature
 d. vP elides



Or simply a non-syntactic account of this alternation is right, and the lexical semantics of the two variants differ (Levin and Rappaport 2006)

5 Consequences: Polarity items

Sag 1976:157f.

(70) John didn't see anyone, but Mary did.

- a. ... but Mary did see someone.
- b. ... *but Mary did see anyone.
- c. $\exists x.see(Mary, x)$

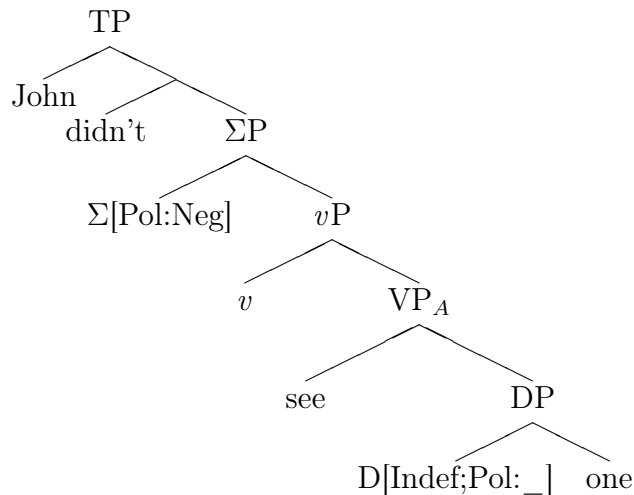
(71) John saw someone, but Mary didn't.

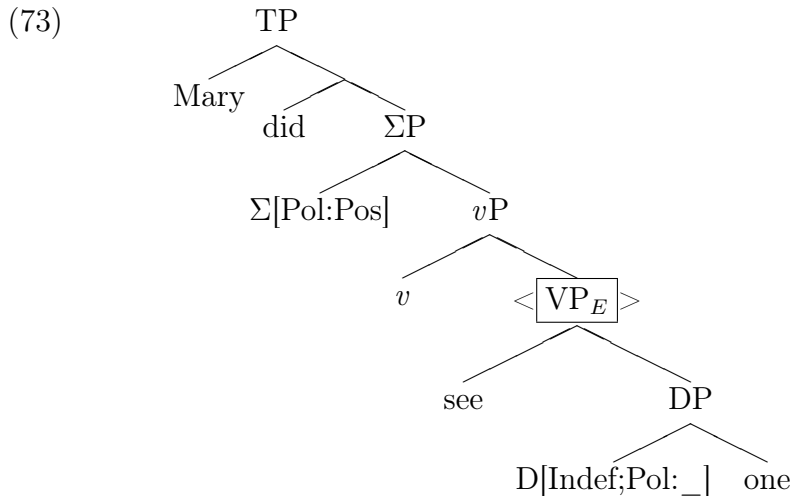
- a. \neq ... but Mary didn't see someone.
- b. ... but Mary didn't see anyone.
- c. $\neg\exists x.see(Mary, x)$

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, 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.

(72)





(74) 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)

5.1 Other determiners whose looks are deceiving

(75) 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]

(76) “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)

- (77) “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)

- (78) Alle Ärzte 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:

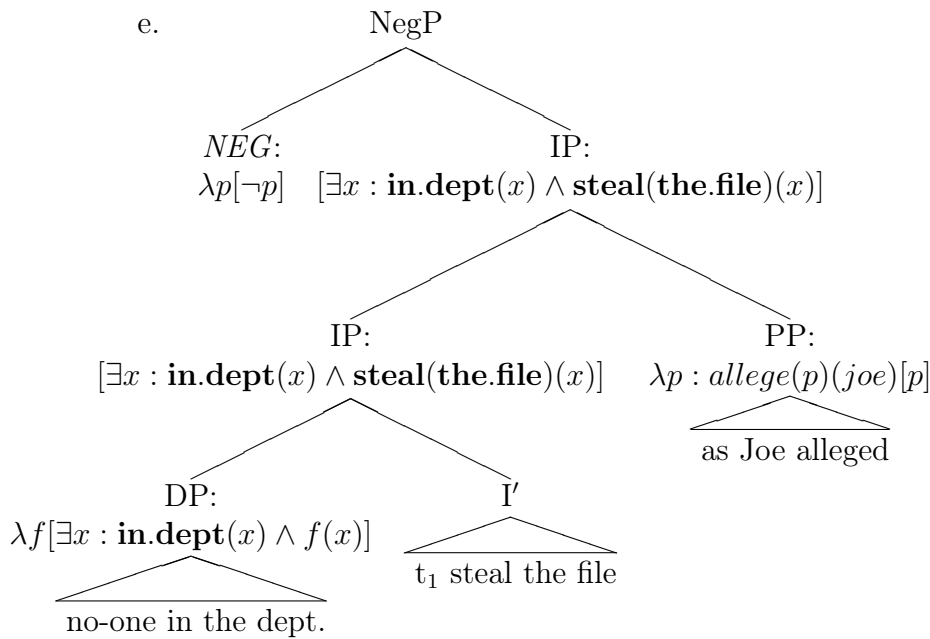
- (79) They ain’t got no fever.

Sag 1976:312

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

Potts 2000, 2002:

- (81) 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]]



Potts 2002:681(127)

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

Potts 2000:

- (83) The company need fire no employees.
- \neq The company is obligated to fire no employees. (*de dicto*)
 - $=$ There are no employees x such that the company is obligated to fire x . (*de re*)
 - $=$ It is not the case that the company is obligated to fire employees. (split)

- (84) John has few friends, and frankly, his brother doesn't really, either. <have many_{NPI} friends>

Klima 1964:280

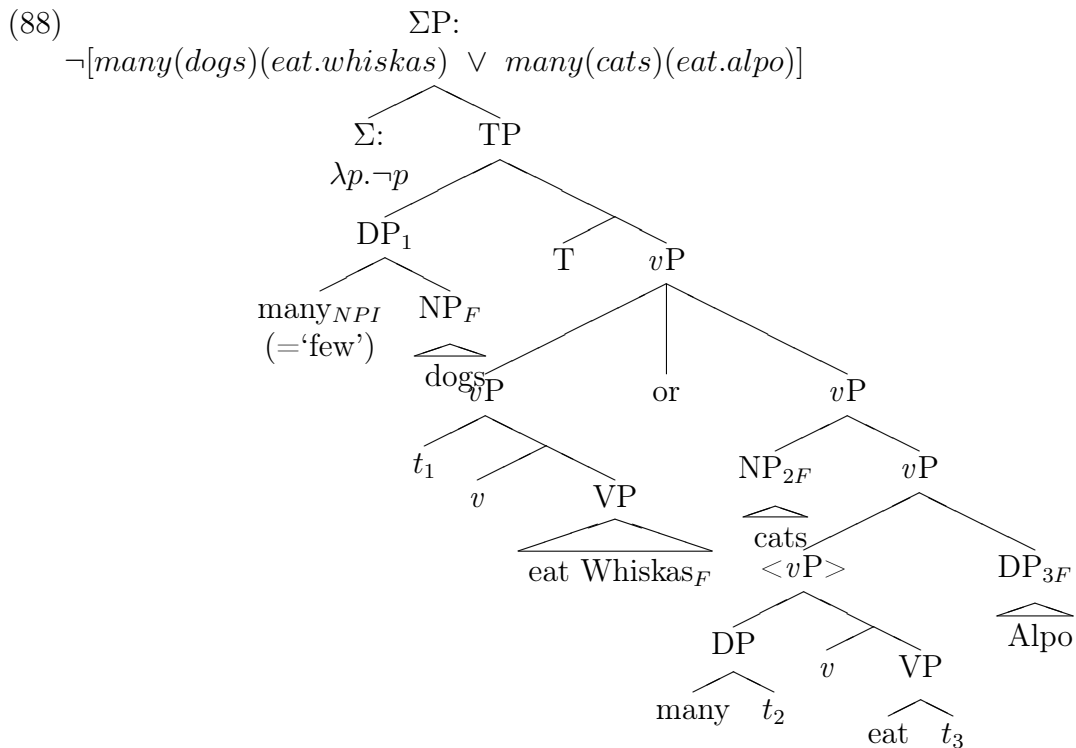
- (85) Feature conflation transformations
- Indef*-incorporation:
 $S: [neg] - X - Quant \implies neg - X - Indef + Quant$
 - neg*-incorporation:
 (optional) $[neg]X[Indef + Y]_{Quant} \implies X - neg + [Indef + Y]_{Quant}$
 (obligatory) $[Indef + Y]_{Quant}Z[neg] \implies neg + [Indef + Y]_{Quant}Z$

- (86) Morphological spell out rules
- $Neg + Indef + Quant \Rightarrow no$
 - $Indef + Quant \Rightarrow any$
 - $Quant \Rightarrow some$

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

- (87) 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]



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

6 Conclusions

- There is an *uneven distribution* of voice mismatches across ellipsis types: High ellipses disallow voice mismatches; low ellipses allow them
- This can be accounted for in a uniform theory of ellipsis licensing only if Voice is a head external to the elided phrase (Voice is an independent head in the syntax)
- Syntactic theories which do not countenance such forms of distribution of features or which subscribe to some version of surface lexicalism cannot easily accommodate these data.
- Syntax needs phonologically abstract phrases and heads—syntax can be simple, but not *too* simple!
- Sometimes what looks like a word is only part of a (syntactic) ‘word’

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