Lecture 15. Null Anaphora, Ellipsis, and Fragments

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Readings: (1) (Hoji ms. 2003) Sloppy Identity in Surface and Deep Anaphora (a handout with a nice concise summary of issues; omits the Japanese data and Japanese-specific issues found in the longer paper (Hoji 2003).
(2) (Dalrymple et al. 1991) Ellipsis and higher-order unification.
(3) (Stainton 2006b) Neither fragments nor ellipsis.
(4) (Merchant 2007) Three kinds of ellipsis: syntactic, semantic, pragmatic?
(5) (Hoji 1998) Null object and sloppy identity in Japanese
(6) (Gardent 2000) Deaccenting and Higher-Order Unification
(7) (Kratzer 1998) More structural analogies between pronouns and tense

Optional additional readings:
(8) (Partee 1975) Deletion and variable binding
(9) (Hoji 2003) Surface and deep anaphora, sloppy identity, and experiments in syntax
(10) (Merchant 2006, Progovac et al. 2006a, Progovac et al. 2006c, Progovac et al. 2006b) (I have the book)
(11) (Stanley 2000) Context and logical form
(12) (Frazier and Clifton 2006) Ellipsis and discourse coherence
(13) (Asher et al. 2001) Discourse parallelism, ellipsis, and ambiguity
(14) (Jäger 1997) Anaphora and ellipsis in type logical grammar – parts of it are impossible to read without background in type-logical grammar, but it's short and has great examples that illustrate important issues.
(15) (Rooth 1992) Ellipsis redundancy and reduction redundancy.
(16) (Hardt 1993) *Verb Phrase Ellipis: Form, Meaning, and Processing*
(17) (Partee and Bach 1981) Quantification, pronouns and VP anaphora

Four classics that I don't think are downloadable online:
(18) (Keenan 1971) Names, quantifiers, and a solution to the sloppy identity problem.
(19) (Williams 1977) Discourse and logical form
(20) (Sag 1976) *Deletion and logical form* (you can read this online at an MIT site)
(21) (Hankamer and Sag 1976) Deep and surface anaphora (You can read it online using Google Scholar. Just do a search on the two words Hankamer Sag.)

1. Null anaphora and bound variables

Issue: Is there a special connection between null anaphora (anaphora expressed by a zero element, or "by deletion" of some kind) and bound variable anaphora? I will draw in part on the good handout (Hoji ms. 2003), which includes good background material as well as his own recent research. (The handout does not include his work on Japanese, but the longer paper (Hoji

2003) does.) But since he gets into some difficult issues and controversial judgments, I won't follow his handout to the end.

1.1 Background: Deep and surface anaphora (Hankamer & Sag 1976)

(Hankamer and Sag 1976:392)
(1) A: I'm going to [$_{VP*}$ stuff this ball through this hoop]
B: It's not clear that you'll be able to [$_{VP*}$].
B' It's not clear that you'll be able to [$_{VP*}$ do it].

Observation: The three instances of VP***** in (1) seem to "mean" the same thing.

Question: Does this mean that the forms in (2) can have the same LF representation[1]?

(2) a. You'll be able to.
b. You'll be able to do it.
c. You'll be able to stuff this ball through this hoop.

Answer: No. (2a) and (2c) can have the same LF representation (i.e. "VP ellipsis" (VPE) can be thought of as involving a silent VP pro-form interpreted as a copy of the antecedent VP, for instance), but (2a) and (2b) do **not**. The "null VP" (VPE) and *do it* in English are different.

The initial difference: "Surface anaphora" (including VPE) requires a linguistic antecedent, while "deep anaphora" (like *do it, do the same thing*) does not.

(3) (Hankamer attempts to stuff a 9-inch ball through a 6-inch hoop.)

Sag: # It's not clear that you'll be able to.
Sag: ^{OK} It's not clear that you'll be able to do it.

(4) a. Phonetic form (PF) representation for (1B) : … [$_{VP*}$].
b. LF representation for (1B) : … [$_{VP*}$ stuff this ball through this hoop].

(5) a. Phonetic form (PF) representation for (1B') : … [$_{VP*}$ do it].
b. LF representation for (1B') : … [$_{VP*}$ do it].

As Carlson (2006)notes, another important property of surface anaphora is that not only does it require a linguistic antecedent, but the *form* of the linguistic antecedent makes a crucial difference to the possibility and/or the form of the anaphoric expression. In the case of deep anaphora, on the other hand, what seems to be required is some salient semantic content, and it may be provided by linguistic or non-linguistic means, and in the case of a linguistic antecedent, its syntactic form is not so tightly constrained as in the case of surface anaphora.

First hypothesis: Only surface anaphora is governed by strong syntactic constraints such as Principle A; and only surface anaphora can express bound variable anaphora. Hence we expect sloppy identity to arise only in surface anaphora.

But sloppy identity has been found in cases of deep anaphora (deep anaphora by the test of allowing for a non-linguistic 'antecedent') (Dalrymple 1991). Two kinds of approaches to try to save the hypothesis: (i) argue that those aren't really 'deep anaphora', but involve an

[1] Much of the contemporary literature discusses semantics in terms of "LF representations". At the time of Hankamer and Sag, the question was put in terms of "semantic representations". In its most general form the question is about compositionality: is the relation between the semantically relevant syntax and semantics the same in all three cases? One could answer "yes", for instance, if one believed that there was a superficial deletion rule at work, or some phonologically empty "copies" of the antecedent material in the elliptical or anaphoric forms.

'accommodated' linguistic antecedent; or (ii) argue that there are different kinds of sloppy identity in the two cases (Hoji ms. 2003).

1.2. Sloppy identity in deep anaphora

(Dalrymple 1991: 21)

(6) (John touches his finger to his nose. He says to Bill:) Now you do it.
   a. Sloppy: Bill touches his own nose.
   b. Strict: Bill touches John's nose.

(7) (Observing John touch his own nose) Bill did it/that too. (can be 'strict' or 'sloppy')

(8) (Observing someone putting soy sauce on a hamburger)
My brother does the same thing. (no ling. antecedent, so this is 'deep anaphora')

(9) Strict/sloppy ambiguity with *do the same thing*:
   A. John washed his car on that rainy day.
   B. Bill did the same thing. (washed John's/ washed his own car on that rainy day.)

(10) Strict/sloppy ambiguity with *do the same thing* with no linguistic antecedent.
(Speaker observing John touch his finger to his (John's) nose): Bill did the same thing.
'the same thing' = the same thing the speaker just observed, which may understood as either
   (i) the act of touching one's finger to one's nose (sloppy identity), or
   (ii) the act of touching one's finger to John's nose (strict identity)

Hoji's goals: general goal: show how we can distinguish grammatical and non-grammatical contributions to our linguistic intuitions.
specific goal: argue that the nature of the sloppy identity in surface anaphora is distinct from that in deep anaphora.

In this work, Hoji gets into a very specific issue, ends up arguing that English VPE sometimes behaves like *deep anaphora*. The issues are tricky and his judgments about the data have in some cases been challenged. So let's just leave this at this introductory point.

1.3. The interpretation of null pronouns

Overt anaphoric expressions are more likely to be able to have referential interpretations (as evidenced by "strict identity" readings and other tests), while null anaphora is more likely to get a bound interpretation (as evidenced by "sloppy identity" readings and other tests). If there are scales, then they correlate as follows:

morpho-phonologically weaker form < ---------- > morph-phon. stronger form
more referentially dependent (more 'bound') < ---------- > more ref. independent
Kratzer: fewer interpretable features (none means Zero Pronoun) < ------ > more interpretable features

From (Gürel 2003):

> Empty categories are defined as syntactically observable but phonetically null elements. Much research has focused on the identification of the precise status of empty elements. Within the framework of Government and Binding (GB) (Chomsky, 1981, 1982), the typology of empty categories is established as follows:

(1)	*Overt elements*	*Empty elements*
a. [+anaphor, -pronominal]	anaphor	NP-trace
b. [-anaphor, +pronominal]	pronoun	*pro*

c. [+anaphor, +pronominal]	——	PRO
d. [-anaphor, -pronominal]	R-expressions	*wh*-trace

> In Gürel's investigation, she is concerned with the empty category *pro* and its overt counterpart. The empty element *pro* is a pure pronominal like its overt counterpart. It is allowed only in languages where it can be identified (e.g., Spanish, Japanese or Turkish). The crucial assumption here is that empty categories mirror their overt counterparts:
>
> 1. An *empty category* (α) is a variable iff it is locally A'-bound and is in an A-position.
> 2. If α is not a variable, then it is an anaphor.
> 3. α is a pronominal iff it is free or locally A-bound by an antecedent (β) with an independent θ-role. (Chomsky, 1981, p. 330).

Montalbetti's Overt Pronoun Constraint

Montalbetti (1984) observes that overt pronouns cannot have a bound reading when a corresponding non-overt form is available. In Spanish (and Italian) this excludes overt BV pronouns in subject position; in Japanese (Saito and Hoji 1983) the same restriction bans overt BV pronouns throughout, since Japanese allows *pro* in object and oblique positions as well as in subject position.

From Alsono-Ovalle and d'Introno (2001):

Montalbetti (1984) points out certain semantic differences between phonetically full and phonetically empty pronouns (henceforth *full* and *null* pronouns) that challenge the traditional interpretive parallelism between empty and full categories (see Chomsky 1981, 1982). He shows that both in subject (1) and object position (2), while null pronouns can be interpreted as bound variables (as in (1a) and (2a)), full pronouns cannot (as in (1c) and (2c)).

(1) a. *Nadie*$_i$ sabe que *pro*$_i$ vendrá.
Nobody know:3S that pro come:3SFUT
'Nobody$_i$ knows that he$_i$ will come'.
b. ~∃x (person' (x) & (know' (x) (come'(x)))
c. **Nadie*$_i$ sabe que *él*$_i$ vendrá.
Nobody know:3S that pro come3SFUT
'Nobody$_i$ knows that he$_i$ will come'.
d. ~∃x (person' (x) & (know' (x) (come'(y)))

(2) a. *Nadie*$_i$ sabe que el profesor lo vigila *pro*$_i$
Nobody know:3S that the teacher HIM-CL watch-over:3S pro
'Nobody$_i$ knows that the teacher watches over him$_i$'.
b. ~∃x (person' (x) & know' (x) (watch-over' (p) (x)))
c. **Nadie*$_i$ sabe que el profesor lo vigila *a él*$_i$.
Nobody know:3S that the teacher HIM-CL watch-over:3s him
'Nobody$_i$ knows that the teacher watches over him$_i$'.
d. ~∃x (person'(x) & know' (x) (watch-over' (p) (y)))

Contrasts like those under (1) and (2) at first seem to suggest that a principle equivalent to (3) has to be taken to describe the strategy responsible for anaphora resolution in Spanish.

(3) **Variable binding is restricted to null pronouns.**

However, it has been shown that in order for (3) to predict the actual anaphoric behavior of Spanish pronouns it has to be refined in a series of finer-grained generalizations that still remain largely unrelated (Luján 1985, 1986; Rigau 1986, 1988; Fernández Soriano 1989).

…

So (3) has been modified to the weaker version in (8), which amounts to Montalbetti's Overt Pronoun Constraint (OPC).

(Montalbetti 1984): **The Overt Pronoun Constraint:**

(8) Full pronouns cannot be interpreted as bound variables except for those syntactic environments where null pronouns are not allowed. (for instance, under focus or in PPs – BHP)

Ovalle and d'Introno's paper aims to show that these generalizations are all derivable from the **Zero Pronoun Hypothesis** of Kratzer (1998), which they state as in (4):

(4) a. Pronouns can have lexical content (L-pronouns) or not (Zero-pronouns).
b. Zero-pronouns can have phonetic content (full) or not (null).

1.4 The Zero Pronoun Hypothesis

(Alonso-Ovalle and d'Introno, continued:) The Zero Pronoun Hypothesis (Kratzer 1998), was originally motivated for the nominal domain by (16):

(16) a. Only I got a question that I understood. (Heim)
b. The speaker in a context d is the only person that got a question that the speaker in d understood.
c. The speaker in a context d is the only individual that has the property of being an x such that x got a question that x understood.

(16) has two readings that differ with respect to the interpretation assigned to the deictic. (16b) is the result of interpreting *I* as a pure deictic that picks up the speaker in the utterance context. In (16c), however, the second occurrence of *I* is not purely deictic: its person and number features are not interpreted at all and, interestingly enough, it has obligatorily a bound-variable interpretation, that, as shown in (17), is subject to some locality condition, since only (17a), where there is no intervening different antecedent, can have a bound-variable reading.

(17) a. Only I got a question that I thought I could answer.
b. Only I got a question that you thought I could answer.

Then, in (16c) we face a pronoun that resembles a deictic but can semantically behave as a bound-variable. Furthermore, it behaves as if it did not have any lexical features at all. In order to capture this, and under the plausible assumption that (interpretable) lexical features cannot be deleted in the process of deriving Logical Form representations, Kratzer proposes that certain pronouns do not have lexical content in the lexicon, and dubs them 'Zero Pronouns'.

As we said before, Zero pronouns differ from lexically full pronouns (Lpronouns) in that they have no lexical features. Since it is currently held that lexical features of pronouns contribute a set of presuppositions (Heim 1982), Zero pronouns can be easily distinguished from L-pronouns because, lacking lexical content, they are not presuppositional.

Notice that Zero pronouns do not have to be confused with null pronouns, since the classification of a pronoun as a Zero pronoun has to do only with its lack of lexical content. Zero pronouns can be full pronouns: they surface as the weakest possible phonological alternative, where 'weakest' is to be defined in a language-specific basis (Kratzer 1998:3). Consequently, their phonetic distribution can be seen as subject to the following economy condition:

(18) Minimize the phonetic content of Zero pronouns up to crash. (I.e. make it the least phonetic content consistent with the derivation not "crashing" altogether. - BHP)

Obviously, (18) is just a specific subcase of a very general economy principle ranging over the whole computational system, as that proposed in Cardinaletti and Starke 1995:

(19) Minimize α up to crash.

where α ranges over representations, derivations, even features.

Being null is generally the weakest phonological alternative for an argument in Spanish. Given that Spanish allows null arguments in subject and object position, in these positions Spanish Zero pronouns are null. However, there are two environments … where being full is the weakest phonological alternative: when focused (as in (20b)) and within PPs (as in (9a), repeated here as (20')).

(20) a. ¿Quién llegó?
Who come:3sPAST
'Who came?'.
b. Llegó él /*pro.
arrive:3sPAST he[+Focus}
'He arrived.'

(20') a. Pedro vino con él/ *pro.
Pedro come:3sPAST with him
'Pedro came with him'.

This idea of an economy principle restricted by certain conflicting factors naturally links with data presented above in the sense that minimizing the phonetic content of Zero pronouns, obeying (18), makes the derivation crash in the contexts described by Montalbetti's and Luján's Generalizations. (I.e., a null pronoun in those contexts is impossible. – BHP)

Main online references for this topic: (Partee 1975, Hoji 2003, Hoji ms. 2003) Additional references, lots of typological work and work on acquisition: (Saito and Hoji 1983, Montalbetti 1984, Alonso-Ovalle and d'Introno 2001, Otsuka 2001, Alonso-Ovalle et al. 2002, Gürel 2003, Matsuo 2007)

2. Ellipsis issues: on what level(s) is what kind of structure present?

2.1. Analyses of VP Ellipsis in English

➢ **Early syntactic theories: VP ellipsis as syntactic deletion.**

(11) John loves Mary and Bill does too.

- derived from the structure: John Pres [VPlove Mary] and Bill Pres [VPlove Mary] too.
- Two transformations: VP Deletion, *do*-support. (insert *do* if the Aux is only Tense).

The terms Strict/Sloppy Identity (Ross 1967) come from this period, because Ross observed instances where deletion of an identical VP tolerated less than full identity, as in (12):

(12) If John can stand on his head, I'm sure you can too.

The missing VP can be "stand on your head", which gives a more likely interpretation than "stand on John's head" (which is also possible, just less likely, and in retrospect causes a reinterpretation of the first clause into something exceedingly unlikely!) It was Keenan (1971) who first observed that "sloppy" syntactic identity corresponds to strict semantic identity of a reading involving bound variable anaphora.

➢ **More recent alternatives**

Positing a "pro-VP" element. One of the approaches to this issue is the Pro-VP approach, according to which the missing VP is represented as some kind of silent proform, analogous to a pronoun – but it's not a pro*noun*, it's a pro-*VP* -- whose semantic value is retrieved via a meaning recovery strategy similar to pronominal anaphora resolution. The advocates for this thesis include Bach and Partee (1980) (Partee and Bach 1981), Rooth (1981), Klein (1987), and most recently Hardt (1993, 1999).

Full-fledged syntactic structure at LF: Another approach, which Tomioka (to appear), who I'm quoting with minor editing in this section, calls the LF Structure approach, posits full-fledged syntactic structure for the missing VP at the level of Logical Form (LF).
Within this approach, there are two variants. In the 'PF-Deletion' analysis, a missing constituent begins its life in the derivation with fully represented structure, which will be deleted in the phonological component but remain intact at LF (cf. Chomsky and Lasnik 1993), (Fox 2000) . The other variant, including Fiengo and May (1994), treats the missing material to be truly missing at the beginning but copied from its antecedent at LF.

The debate between the Pro-form and the LF Structure camps has a long history and is still on-going. Tomioka's paper concentrates on a particular phenomenon which is considered by many to be one of the most convincing arguments in favor of the Pro-form approach. Here we just review the very interesting phenomenon, and not the theoretical debates about how to deal with it.

2.2 Bound variable pro-VP! Higher-order strict/sloppy identity ambiguity.

Quoting Tomioka (to appear) again: Hardt (1999) and Schwarz (2000) independently noted that, when an elided VP is contained within another elided VP, the first VP can get the 'sloppy' interpretation. Here are the examples that Hardt and Schwarz present.

(2) (= Schwarz 2000, Chapter 4 (35))
A: When John had to cook, he didn't want to Δ.
B: When he had to clean, he didn't Δ, either.
Strict identity: second Δ is "want to cook", treating first Δ as having a specific value.
Sloppy identity: second Δ is "want to clean", treating first Δ as a bound variable.

(3) (= Hardt 1999, (17))
I'll help you if you want me to Δ. I will kiss you even if you don't Δ.

The elided VP in B's utterance in (2) can be understood to mean 'want to clean', and similarly, the missing VP in (3) can be interpreted as 'want me to kiss you'. For a theory of ellipsis which assumes full-fledged LF structure for elided material, these examples are problematic. The second VP ellipsis which contains another elided VP fails to satisfy the LF identity condition. Take (2), for instance. Its LF representation should look like (4), in which the material within { } corresponds to the unpronounced VPs.

(4) A: When John had to cook, he didn't want to *{cook}*.
B: When he had to clean, he didn't *{want to clean}*, either.

The first VP ellipsis (i.e., in A's utterance) can be successfully represented as *[VP cook]* since there is an identical VP in the preposed adjunct clause. However, the second VP ellipsis creates

a problem. The sloppy interpretation requires that the elided VP be of the form *[VP want to clean]*.
However, the preceding sentence furnishes no such VP. Intuitively, the second VP in A's utterance, *[VP want to Δ]*, should count as an antecedent, but its LF representation, *[VP want to {cook}]*, would not be considered as identical to the missing VP under any theory of LF identity.
The second difficulty, pointed out by Schwarz (1999) is that the sloppy interpretation is not possible when the first sentence does not have ellipsis. In (5), for instance, the missing VP is only understood to mean 'want to cook' although this 'strict' reading is rather odd pragmatically.

(5) A: When John had to cook, he didn't want to cook. (= Schwarz 1999 (37))
B: When he had to clean, he didn't, either.

As far as the LF representations are concerned, (4) and (5) should be identical. Therefore, the LF structure approach fails to distinguish them, leaving the contrast completely unaccounted for. [End quotation of Tomioka.]

2.3. Ellipsis resolution via equation-solving: the HOU approach.

A quite different and very interesting approach to the resolution of VP ellipsis, which has been developed for a number of other phenomena as well, is an "equation-solving" approach (Dalrymple et al. 1991). This can be thought of as a version of the pro-VP approach, since it does not assume invisible syntactic structure at the ellipsis site.

Dalrymple et al start from the observation that on most previous approaches to VP ellipsis, an ambiguity like the standard strict-sloppy ambiguity of a sentence like (13) requires one to analyze the antecedent as ambiguous in order to account for the ambiguity of the missing VP.

(13) Dan likes his wife, and George does too.
a. λx [likes (x, wife-of (dan)] (strict; referential or 'free variable' pronoun)
b.. λx [likes (x, wife-of (x)] (sloppy; bound variable pronoun)

The missing VP has two interpretations (13a) and (13b), and on most usual analyses, the antecedent VP is claimed to have the same two interpretations; this is the intuition behind the insight that sloppy identity is also a kind of strict semantic identity. On Dalrymple et al's approach, there is no need to consider the antecedent ambiguous if there is no independent reason to do so; ambiguity arises when there is more than one "solution" to the "equations" that must be satisfied by the antecedent and the ellipsis.

The approach developed by Dalrymple et al (1991) is perspicuously described by Gardent (2000), who also shows how it can be extended to examples which have "deaccenting" rather than ellipsis.

Sentence (13) can be represented with the following schematic equations:

(14) a. like (dan, wife-of (dan)) & R(george) (R is a variable of type <e,t>)
b. R(dan) = like (dan, wife-of (dan))

The formula in (14a) is just like the formula one would get on an analysis that treats the missing VP as a "pro-VP": R is a variable over VP-type meanings that has to somehow get its value from the antecedent VP. The novelty comes in the idea that we don't find a specific VP-meaning in the antecedent and "copy" it. Rather we look at the whole antecedent *sentence* and introduce

the requirement that if we apply the value of R to its subject, *dan*, we should get a result equivalent to that sentence meaning. That's what (14b) says. And then the strict-sloppy identity ambiguity arises from the fact that there are two distinct solutions to the equation in (14b). Those two solutions are precisely (13a) and (13b): if you apply either of them to the subject *dan*, you get back *like (dan, wife-of (dan))*.

Gardent (2000) shows that the same strategy can account for the ambiguity observed by Rooth (Rooth 1992) in cases of the phonetic reduction of redundant material in examples like (15), where the deaccented material has the same strict/sloppy ambiguity that ellipsis would have.

(15) A: John took his wife to the station.
B. No, BILL *took his wife to the station.* (italics represents deaccenting)

This "equation-solving" technique is formalized as "Higher Order Unification" (HOU). It extends techniques that have long been used in the framework of "Unification", an approach to interpretation that is used in logic programming languages like PROLOG (Clocksin and Mellish 1981, Pereira and Shieber 1987, Gazdar and Mellish 1989) and has been applied in computational linguistics with considerable success (Kay 1985b, Kay 1985a, Pereira 1985a, Pereira 1985b, Shieber 1985, Shieber 1986, Uszkoreit 1986, Pereira 1986 (1980), Joshi 1987, Pereira and Shieber 1987, Bouma 1988, Kasper 1990, Carpenter 1992, Gardent and Kohlhase 1996).

2.4. Ellipsis vs. fragments

Issue: We have been discussing ellipsis and null pronouns as if we can always tell when something is "missing". But it's not always straightforward to distinguish between "ellipsis" or other "null" material on the one hand, and "fragments", or "subsententials", expressions that may have nothing missing, but are simply smaller than a standard sentence, on the other hand. There are very interesting debates about various examples; one important conclusion reached by many (Morgan 1989, Barton 1998, Progovac et al. 2006c) is that they aren't all alike. And theories and terminology are not all alike either, so even describing the alternative possibilities is not simple. First let's assemble some candidates that we can ask about.

(16) Various kinds of examples that may involve ellipsis/ null anaphora/ fragments
a. VP Ellipsis (VPE). John left. Mary will, too.
b. Short answers. Who made this salad? Rob's mom.
Where are you going? To the store.
c. Sluicing. She has invited someone, but I don't know who.
d. "Sluicing fragments". She's bringing someone with her. – Who?
e. Null Complement Anaphora. Mary didn't notice.
I'm eating.
I haven't eaten yet.
I really tried.
f. Independent-seeming fragments that can be discourse-initial:
(i) Thief! Thief!
(ii) Your turn.
(iii) Higher!
(iv) (announcement of entry) Count Vorontsov.
(v) Three beers, please.
(vi) (in various contexts, identification or explanation:) Rob's mom.

2.4.1. Arguments that favor ellipsis

Kinds of arguments that favor an ellipsis analysis (Barton 2006), citing (Morgan 1973):
Syntactic connectivity arguments.
Subcategorization

(17) A: What does John think? B: That Tricia is happy. / * For Tricia to be happy.
Compare: John thinks that Tricia is happy / *John thinks for Tricia to be happy.
Also compare: A: What does John want? B: For Tricia to be happy. /* That …

A well-formed full-sentence source predicts a well-formed fragment.

Binding; islands; complete constituenthood

Three particularly strong kinds of arguments from Morgan (1973): (i) fragments that include binding phenomena, as in (18); (ii) island phenomena, as in (19); and evidence that fragments have to constitute complete constituents that could occur in their source sentences, as illustrated in (20) and (21).

(18) a. Who does $John_i$ want to shave?
b. $Himself_i$. ($John_i$ wants to shave $himself_i$.)
c. *Him_i. (*$John_i$ wants to shave him_i.)

(19) a. A: Did the man who arrested Martha leave town?
B: No, the man who arrested Thelma.
b. B: *No, Thelma. (*No, Thelma, the man who arrested left town.) [but OK as "correction" rather than "direct answer"]

(20) a. A: Does Mary like the soprano?
B: No, the tenor. (No, Mary likes the tenor.)
b. B: *No, tenor. (*No, Mary likes tenor.)
(21) a. A: Does John want to kiss Martha?
B: No, (to) hit her. (No, John wants to hit her.)
b. B: *No, (to) hit. (*No, John wants to hit.)

As Merchant (2001, 2004, 2006, 2007) has argued, Sluicing and Short Answers offer even stronger connectivity arguments in favor of an ellipsis analysis than VP ellipsis, since there are very clear constraints involving case, preposition selection, etc., which clearly rest on the details of the syntax of a given language.

(22) a. Mit wem hast du gesprochen? (German; Merchant 2006, p. 17)
with whom.DAT have you spoken
'With whom did you speak?'
b. Mit Hans.
with Hans
c. *Hans
Hans

English would allow both. Merchant argues that this can be explained by the fact that English allows preposition-stranding and German does not; he argues that the constituent that forms a short answer must be moved to sentence initial position before the rest of the sentence is deleted. Merchant's work is interesting and sometimes controversial.

2.4.2. Arguments that favor "small structures"

The key kinds of arguments that favor directly generating "small structures" (Barton 2006) consist of the syntactic and semantic independence of many "nonsententials", ones that have no obvious anaphoric dependence, connectivity effects, or matching effects to any full-sentence "sources" in the discourse context.

(23) a. The time? [at a bus stop to a stranger]
b. Thief! Thief! [as a thief is running away]
c. Teamwork. [after winning tennis doubles.]
d. Your move. [during a chess game.]

Barton (1990) found examples for which a well-formed sentential source seems very problematic.

(24) A: The White House staff doesn't visit the Speaker of the House in his office.
B: Old grudge.
cf: *The White House staff doesn't visit the Speaker of the House in his office because of old grudge. (an article is required: because of an old grudge.)

(25) A: Our classmate John is probably making a million a year by now.
B: John a successful businessman? Don't make me laugh.

As Barton notes, expressions like "old grudge" and "John a successful businessman" can certainly appear as parts of well-formed sentences; but an ellipsis theory would have to say more than that – it would have to have general and predictable patterns relating the fragments to their putative sentential sources.

Morgan (1989) and Barton (1998) both argued that some derivations should involve ellipsis and others should involve direct generation of nonsentential expressions, but they differ in emphasis. Morgan argued that most fragments should be derived through deletion, and only certain "pragmatically immediate" nonsententials should be derived through base generation. Barton argued that most nonsententials should be base generated, reserving ellipsis for those that show overt evidence of sentential derivation.

The Stainton-Merchant debate
The philosopher Robert Stainton (Stainton 1995, 2004, Elugardo and Stainton 2005b, 2005a, Stainton 2006b, 2006a) argues that genuine speech acts such as asserting, asking, ordering, advising, etc., can be performed with the use of subsentential expressions, and argues for the need for a theory that allows for the combination at some pragmatic level of concepts that result from linguistic interpretation of overt linguistic forms and concepts that arise in other ways from "interpreting" the context. (Cf. the example we discussed in class one day of a deaf child making the sign for *my/mine* on a toy: the complete predication combined a linguistic sign for a predicate with a non-linguistic entity filling the semantic role of its subject. Stainton advocates interpreting a hearing child's one-word utterance *Mine!* similarly.)

Stainton's position is disputed by a number of scholars including the philosopher Jason Stanley (2000) and the linguist Jason Merchant (2004, 2006, 2007).

Let me follow Merchant (2007) in introducing the issues and three main alternatives. Merchant describes Stainton's distinction among *syntactic, semantic,* and *pragmatic ellipsis.* We can illustrate them using the example of VP ellipsis in English: (example from Merchant 2007)

(4) a. Bill should collect butterflies. Jill should, too.
b. Bill should collect butterflies. Jill should collect butterflies, too.

(i) Full syntactic and semantic sentential structure present; only phonologically deleted. (This is a real "ellipsis" analysis.) "Syntactic ellipsis" or $ellipsis_{syntactic}$ in the terminology of Stainton (2006a) and Merchant 2007. Examples (4a) and (4b) are alike except for their pronunciation.

(ii) Syntactically there is no structure there, just something like an empty VP. Semantically, all the same semantic content is there in (4b) as in (4a), somehow 'copied' from the antecedent. "Semantic ellipsis" or $ellipsis_{semantic}$ in the terminology of Stainton (2006a) and Merchant 2007. (This way of looking at it makes most sense if there is some semantic "representation", like a level of LF or a Jackendovian level of "conceptual structure". It makes no clear sense in model-theoretic semantics, where it has been more common to propose a single VP-type variable for the missing VP, which can get its value from the antecedent -- see (Partee and Bach 1981) and the earlier works cited there.)

(iii) "Pragmatic ellipsis" or "Fragment" analysis: Neither syntactically nor semantically is there a VP or a VP meaning present. Both syntactically and semantically, (4a) and (4b) are different: the second sentence in (4b) expresses a full proposition, whereas the linguistic expression in the second part of (4a) is something less than a sentence and expresses something that would need to be combined with a VP meaning to make a proposition. If the context provides a suitable VP-type meaning, it can be combined with the overt content of (4b) to form a full proposition – the same one that is expressed overtly by (4a). Stainton calls this "Pragmatic ellipsis" or $ellipsis_{pragmatic}$. What is special in "Pragmatic ellipsis" is that one constituent of the final resulting proposition is derived linguistically and the other part non-linguistically.

In the case of VP ellipsis, there are a number of classic arguments for syntactic ellipsis; and Stainton and Barton both agree that arguments for ellipsis in that case and in the case of Sluicing are quite strong, though there have been counter-arguments as well. But for some other kinds of fragments, such as the various short and possibly discourse-initial expressions in (16f) and (23) the case for pragmatic ellipsis is quite strong and no clear arguments against it have been found. It seems likely that all three sorts are real.

For discussion of interesting mismatches between theoretical predictions and experimental findings with VP ellipsis, see (Frazier and Clifton 2006). Note: in addition to the references that exist online, I have and can xerox for anyone interested the book (Progovac et al. 2006a), which contains, among other things, (Barton 2006, Merchant 2006, Progovac et al. 2006c, Progovac et al. 2006b).

3. Typological issue: VP deletion and null complement anaphora

One of the difficult cases, and one for which there is interesting cross-linguistic variation, concerns Null Complement Anaphora, illustrated above with (16e).

- **Typological issue:** What is the relationship among English VP deletion and the use of 'bare verb' anaphora in other languages: Japanese, Korean, Russian, other?

There are debates about whether null complement anaphora in Romance is deep or surface anaphora; see the abstract http://www.ulcl.leidenuniv.nl/content_docs/conferences/2004/goingromance/cyrino_and_matos.pdf. Other very relevant references include (Hoji 1998), (Depiante 2001), and a paper on Korean that I have but haven't put on the web because it's a 6MB file -- (Kang 2007).

4. Further issues. Complexities in the data. Formal theories.

- Advanced topic: More complex data involving strict and sloppy identity, "mixed" readings, etc. Also relations between ellipsis and deaccenting.

Main references: (Dalrymple et al. 1991, Rooth 1992, Shieber et al. 1996)
Additional references: (Jäger 1997) – difficult to read without background in type-logical grammar, but short with great bunch of examples illustrating issues.
(Dahl 1974, Szabolcsi 1987, Gardent 1997, Jäger 2001)

Other miscellaneous references to make sure they're included in the References list: (Partee 1975, Partee and Bach 1981, Partee 1989, Hardt 1993, Asher et al. 2001, Johnson 2001, Culicover and Jackendoff 2005, Frazier and Clifton 2006, Lasnik 2006, Lasnik 2007)

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