Overtly Empty but Covertly Complex: An Argument for the LF-copy Analysis

Synopsis: The current standard assumption on Japanese Null Arguments (NAs) is that, in addition to *pro*, they can involve Surface Anaphora (SA) via ellipsis, c.f. Oku's (1998) Argument Ellipsis (AE), where arguments can directly undergo ellipsis (Saito 2007, Takahashi 2008a, b, a.o.). However, Hoji (1998, 2003) and Tomioka (1998, 2003, 2014) argue the data on Japanese NAs which is taken to support the ellipsis strategy can/should be treated via Deep Anaphora (DA), i.e. *pro*. This paper shows Japanese NAs exhibit mixed behavior of SA and DA, arguing for a particular ellipsis view, i.e. LF-copying (Saito 2007). I also claim the dichotomy between PF-deletion and LF-copying is related to phases.

Overt Extraction: The difference between SA, e.g. VP Ellipsis (VPE), and DA, e.g. Null Complement Anaphora (NCA), has been claimed to be related to the presence/absence of internal structures (Hankamer & Sag 1976). The availability of overt extraction is one of the well-established diagnostics for SA, i.e. if extraction is possible, there must be something to extract from (Tancredi 1992, Depiante 2000, Johnson 2001, Aelbrecht 2010, Thompson 2014, a.o.).

(1) Which films did you refuse to see, and which films did he [agree to Δ_{VPE}]/*[agree Δ_{NCA}]? (Merchant 2013)

(1) shows extraction is possible from the VPE site but not from the NCA site, which is taken to indicate the former involves internal structures, but not the latter. Importantly, overt extraction out of Japanese NAs, e.g. null CP, is banned as in (3b') (Shinohara 2006, Saito 2007, Tanaka 2008), though null CP itself is possible as in (2).

(2) Taroo-wa [$_{CP}$ Hanako-ga   sono hon-o   katta   to] itta-si,   Ziroo-mo Δ_{CP} itta.
Taroo-TOP   Hanako-NOM   the   book-ACC bought C   said-and Ziroo-also   said
'lit. Taroo said [$_{CP}$ that Hanako bought the book], and Ziroo also said Δ_{CP}.'

(3) a. Sono hon$_i$-o   Taroo-wa [$_{CP}$ Hanako-ga   t$_i$ katta to] itta.
the   book-ACC Taroo-TOP   Hanako-NOM   bought C   said
'The book$_i$, Taroo said [$_{CP}$ that Hanako bought t$_i$].'

b. Sono hon$_j$-o   Ziroo-mo [$_{CP}$Hanako-ga   t$_j$ katta to] itta.   b'.*Sono hon-o   Ziroo-mo Δ_{CP} itta.
the   book-ACC Ziroo-also   Hanako-NOM bought C   said   the   book-ACC Ziroo-also   said
'The book$_j$, Ziroo also said [$_{CP}$ that Hanako bought t$_j$].'   'The book, Ziroo also said Δ_{CP}.'

The ungrammaticality of (3b') indicates Japanese NAs behave as DA regarding overt extraction (Kasai 2014).

Covert Extraction: Another well-known diagnostic for SA is the availability of inverse scope out of empty sites, e.g. quantificational elements inside a VPE site can scope over elements outside of it as in (4b) (Hirschbühler 1982, Tomioka 1997, Fox 2000, a.o.), but such scope interaction is disallowed in NCA as in (5b) (Depiante 2000).

(4) a. Some boy admires every teacher.   [✔∃≫∀;✔∀≫∃]
b. Some boy admires every teacher, and some girl does Δ_{VPE} too.   [✔∃≫∀;✔∀≫∃]
(5) a. Some doctor volunteered to visit every patient.   [✔∃≫∀;✔∀≫∃]
b. Some doctor volunteered to visit every patient, and some nurse also volunteered Δ_{NCA}. [✔∃≫∀;✗∀≫∃]

The absence of inverse scope in (5b) follows if NCA does not include internal structures since it is then expected that no syntactic operations including QR can apply inside. Strikingly, Japanese NAs allow inverse scope out of them as in (6).

(6) John-wa [$_{CP}$ Mary-ga   oisii ringo-sae   tabeta to] omotteinai. Bill-mo Δ_{CP} omotteinai.
John-TOP   Mary-NOM tasty apple-even ate   C   not.think Bill-also   not.think
'lit. John does not think [$_{CP}$ that Mary ate even a tasty apple]. Bill also does not think Δ_{CP}.'

The first sentence is ambiguous in that the embedded quantificational object *oisii ringo-sae* 'even a tasty apple' can take either embedded or matrix scope (Abe 2012). Under the embedded scope reading, it is interpreted as "John does not think that Mary ate a tasty apple in addition to some other thing," whereas, under the matrix scope reading, it is interpreted as "even for a tasty apple, John does not have an idea that Mary ate it (in addition to some other idea about some other things)." Importantly, the second sentence is also ambiguous in the same way, i.e. the quantificational object within the null CP can take scope both inside and outside (the matrix scope reading exhibits subjacency, which prohibits focus projection from applying in ways not involving movement; Aoyagi 1994, Abe 2012). The availability of the matrix scope reading in the second sentence suggests that Japanese NAs behave as SA regarding inverse scope, c.f. (4b).

Analysis: As shown above, Japanese NAs exhibit mixed behavior of SA and DA: covert extraction is allowed out of them but overt extraction is not. This indicates Japanese NAs do not include internal structures in overt syntax but they do at LF. Following Thompson (2014), I argue that the mixed behavior of this kind can be captured by a particular ellipsis strategy, i.e. LF-copying, by which the NA in (2) is analyzed as in (7) (Shinohara 2006, Saito 2007, Takita 2010).

(7) a. Overt Syntax: Taroo [Hanako the.book bought that] said-and, Ziroo-also said
b. LF: Taroo [Hanako the.book bought that] said-and, Ziroo-also **[Hanako the.book bought that]** said
                                                                                                     ▲ *LF-copying*

LF-copying can account for the unavailability of overt extraction out of the NA in (3b') since there is nothing to extract from in overt syntax under this analysis. That inverse scope out of the NA is allowed in (6) also follows given that the initial LF, e.g. the LF before QR, can be copied into the anaphor site as in (8b) (Thompson 2014).

(8) a. Overt Syntax: John [Mary tasty.apple-even ate that] not.think. Bill-also not.think.
   b. LF①: John [Mary tasty.apple-even ate that] not.think. Bill-also **[Mary tasty.apple-even ate that]** not.think.
      LF-copying
   c. LF②: John [Mary tasty.apple-even ate that] not.think. Bill-also **[Mary tasty.apple-even ate that]** not.think.
      QR to the matrix clause   *QR to the matrix clause*

Neither the PF-deletion nor the DA analysis can explain the whole paradigm above: the former incorrectly predicts overt extraction out of the NA in (3b') to be possible since (3b) and (3b') are expected to behave the same way, and the latter cannot explain the availability of inverse scope out of the NA in (6). Thus, only LF-copying can uniformly capture all the data above, supporting the availability of such an ellipsis strategy in Japanese.

PF-deletion and LF-copying: Bošković (2014) proposes the following generalizations on ellipsis.

(9) a. Only phases and phasal complements can be elided.
   b. Extraction is easier from phasal complement ellipsis sites than phasal ellipsis sites.

As for (9a), he takes AE in Japanese, c.f. (2) and (7), and sluicing in English, e.g. (10), to be the cases of phasal and phasal complement ellipsis, respectively, also arguing (9a) can capture Sag's (1976) VPE paradigm in (11).

(10) They arrested someone, but I don't know [$_{CP}$ who$_i$ C [$_{IP}$ they arrested t$_i$]]   [CP = phase; IP = phasal comp.]
(11) Betsy must have been being hassled by the police, and Peter ...
   a. *must Δ_{VPE}.   b. must have Δ_{VPE}.   c. must have been Δ_{VPE}.   d. *must have been being Δ_{VPE}.
(12) [$_{TP}$ Peter must [$_{AUXP}$ have [$_{AspP1 = phase}$ be$_i$+en [$_{VP1 = phasal comp.}$ t$_i$ [$_{AspP2}$ ing [$_{VP2}$ be [$_{VP3}$ hassled by the police]]]]]]]]

Bošković argues that the highest projection in the extended domain of a lexical head is a phase, and that AspectP1 is the highest projection in the VP domain (Wurmbrand 2014), thus being a phase in (12). He then claims only AspectP1, which is a phase, and VP1, which is a phasal complement, can be elided: (11b) and (11c) are thus grammatical since what is elided are a phase in the former and a phasal complement in the latter, whereas (11a) and (11d) ungrammatical since what is elided is neither a phase nor a phasal complement. As for (9b), Bošković bases it on the contrast between (3b') and (10): extraction is disallowed from the AE site but is allowed from the sluiced site. Interestingly, he observes (9b) holds even within the same ellipsis: extraction from phasal VPE sites is degraded but that from phasal complement VPE sites is possible as in (13a) and (13b), respectively.

(13) You wonder by whom Betsy must have been being hassled, ... (Bošković 2014)
   a. $^{?}$*and I wonder by whom Peter must have Δ_{VPE}.   b. $^{?}$and I wonder by whom Peter must have been Δ_{VPE}.

Importantly, inverse scope is equally available out of both phasal VPE sites and phasal complement VPE sites as in (14).

(14) You wonder whether some boy must have been being hassled by every teacher, and I wonder whether some girl...
   a. must have Δ_{VPE}. [✓∃≫∀;✓∀≫∃]   b. must have been Δ_{VPE}. [✓∃≫∀;✓∀≫∃]

Therefore, phasal VPE exhibits mixed behavior of SA and DA on a par with Japanese AE/NAs, cf. (3b') and (6). I argue that all of the observations noted above can be captured by the following generalizations, assuming (16).

(15) a. Phasal ellipsis, e.g. AE and phasal VPE, is implemented by LF-copying.
   b. Phasal complement ellipsis, e.g. sluicing and phasal complement VPE, is implemented by PF-deletion.
(16) Passive subjects are base-generated in [Spec, TP]. (Williams 1994, Neelman & Weerman 1999)

(15a) follows given that phases are natural domains for syntactic operations including LF-copying. Also, since spell out works through phasal complements (this is what is sent to spell out), ellipsis that applies in PF, through PF-deletion, then targets phasal complements, i.e. (15b).

Theoretical Implications: First, although it has been controversial whether Japanese NAs can be derived via ellipsis (Oku, Saito, Takahashi) or they are uniformly *pro* (Hoji, Tomioka), the observation here suggests at least some instances of Japanese NAs can be elliptic since non-ellipsis anaphora, e.g. *do it/so*, NCA, *one*, does not allow inverse scope out of it (Depiante 2000, Thompson 2014 a.o.). Second, both PF-deletion and LF-copying should be available for ellipsis constructions: natural languages employ both PF-deletion and LF-copying, depending on the extractability in overt syntax and/or LF, i.e. the phasal status of ellipsis domains.

Selected References: Bošković, Ž. 2014. Now I'm a phase, now I'm not a phase: On the variability of phases with extraction and ellipsis. *Linguistic Inquiry* 45:27-89. Depiante, M. A. 2000. The syntax of deep and surface anaphora: A study of null complement anaphora and stripping/bare argument ellipsis. Ph.D. diss., University of Connecticut. Saito, M. 2007. Notes on East Asian argument ellipsis. *Language Research* 43:203-207. Takahashi, D. 2008a. Noun phrase ellipsis. In *Oxford handbook of Japanese linguistics*, 394-422. Oxford: OUP. Thompson, A. 2014. Beyond deep and surface: Explorations in the typology of anaphora. Ph.D. diss., University of California, Santa Cruz.