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Ellipsis and E-type Anaphora*

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1. Introduction

It is well-known that ellipsis involving a proform as its part can exhibit flexibility in anaphoric interpretations — often in somewhat unexpected ways. In this work, I will attempt to show that when we clarify how anaphora involved as part of ellipsis comes to be represented in covert syntax, we will also have a better understanding of the way the so-called E-type anaphora is represented in covert syntax. In particular, I will first point out that ellipsis can provide a type of strict identity interpretation for a reconstructed proform which is akin to the interpretation recognized in the E-type anaphora. I will then argue that the parallelism between the two constructions arises due to the involvement of the same operation of 'reconstruction' in the form of copying applying in covert syntax. It should be made clear at this point that the research presented in this work almost exclusively concerns the syntactic aspects of these phenomena and leaves out their semantics. We will, in other words, attempt to answer the question what syntactic operations are responsible for the semantic characteristics of these constructions, but will leave unanswered the question how they should be represented semantically.

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The theoretical framework I will adopt in this work is one version of the minimalist program. I will, for instance, follow Chomsky (1995) and assume that grammar is constrained by various types of 'minimalism' imposed by economy conditions like the Principle of Full Interpretation (FI), Last Resort Principle, and yet another interface condition to be proposed below. Clearly departing from the standard minimalist assumption, however, I will also assume that covert syntax can be driven not only by formal feature checking but also by some semantic factors, like anaphora and it can also affect semantic contents of the affected items.¹ When we characterize covert syntax (i.e., the LF component) as the interface with semantics, this is not an unreasonable move to take.

Implementing this working hypothesis, we can, for instance, offer a very simple account of the well-known ambiguity observed in VP-Ellipsis in (1):

- (1) John loves his wife, and Bill does [_{VP} e], too.

In particular, the two distinct interpretations of the second clause — 'Bill loves his own wife' (sloppy identity) and 'Bill loves John's wife' (strict identity) — can be captured in terms of the two distinct orders in which syntactic binding and the reconstruction of the elided VP can apply as covert syntactic operations (Kitagawa (1991b)). For instance, as illustrated by the derivation in (2) below, sloppy identity arises when nominal binding applies *after* the reconstruction of the VP takes place:

- (2) a. LF_F: John₁ [_{VP} loves his wife], and Bill does [_{VP} love **his** wife], too.
 b. LF_F: John₁ loves his₁ wife, and Bill₂ does [_{VP} love **his**₂ wife], too.

Sloppy identity arises in (1), in other words, when the VP containing an **unbound** proform is reconstructed at the ellipsis site.² Strict identity arises, on the other hand, when the VP containing a **bound** proform is reconstructed. That is, when syntactic binding applies before VP-reconstruction applies, as illustrated by the derivation in (3):³

- (3) a. LF_F: John₁ [_{VP} loves **his**₁ wife], and Bill does [_{VP} e], too.
 b. LF_F: John₁ [_{VP} loves his₁ wife], and Bill does [_{VP} love **his**₁ wife], too.

¹ See Kitagawa (1991b), Kitagawa (1994) and Kitagawa (1995) for the motivation for such covert syntactic operations. Kennedy (1997) reaches a similar conclusion, arguing for the relevance of Quantifier Raising in antecedent-contained deletion.

² See Kitagawa (1991b) for the motivations to adopt this particular approach, and also for arguments that sloppy identity is independent abstraction.

³ Another possible derivation for strict identity is to reconstruct an unbound proform **his** and let it be coreferential with the antecedent **John** in the first clause. See Kitagawa (1991b) for an analysis which does not leave this as a possibility.

A virtually identical analysis permits us to capture the sloppy-strict ambiguity observed in the empty nominal (or DP-Ellipsis) construction in Japanese as in (4):⁴

- (4) John-wa [_{DP} **zibun**-no anyoo-bangoo]-o wasuretesimateita ga,
 -TOP self-GEN PIN.number-ACC forgot though

Okusan-wa [_{DP} e] oboeteita.
 Wife-TOP remembered

'While John forgot his PIN number, his wife remembered { his / her } number.'

Here, the elided DP can be interpreted either as 'John's wife's own PIN number' (sloppy identity) or 'John's PIN number' (strict identity), and each of these readings can be ascribed to the distinct order in which the two covert operations applied.⁵ When the reconstruction of DP takes place first, and then the syntactic binding of *zibun* 'self' does as in (5) below, an **unbound** proform is reconstructed at the ellipsis site, and sloppy identity arises:

- (5) a. LF₁: John-wa [_{DP} zibun-no PIN]-o wasurete... Okusan-wa [_{DP} **zibun-no PIN**]-o
 oboete... |-----↑
 b. LF₂: John₁-wa **zibun**₁-no PIN-o wasurete... Okusan₂-wa **zibun**₂-no PIN-o oboete...
 |-----| |-----|

When the order of application is reversed as in (6) below, on the other hand, a **bound** proform is reconstructed at the ellipsis site, and strict identity arises:⁶

- (6) a. LF₁: John₁-wa [_{DP} **zibun**₁-no PIN]-o wasurete... Okusan₂-wa [_{DP} e] oboete...
 |-----|
 b. LF₂: John₁-wa [_{DP} zibun₁-no PIN]-o wasure... Okusan₂-wa [_{DP} **zibun**₁-no PIN]-o
 oboe... |-----↑

Finally, this analysis allows us to assimilate certain interpretations of overt pronouns to those involved in the ellipsis constructions we have examined above. The

⁴ In this work, I will not take any definite position as to what categorial status nominal expressions in Japanese, especially those without phonetic content, have. I will, however, tentatively label the ellipsis construction in question as DP-Ellipsis since it will allow us to reduce all the anaphoric properties we will deal with below to the category D(eterminer).

⁵ Otani and Whitman (1991), following Huang (1991), argue that the sloppy identity observed in (4) is due to the hidden existence of VP-Ellipsis in Japanese. Hoji (1998), on the other hand, attempts to neutralize most of their arguments, claiming that the interpretation in question does not involve genuine sloppy identity, but is what he calls a 'sloppy-like reading.' According to Hoji, a sloppy-like reading is an epiphenomenon that arises when a phonetically empty object NP (rather than DP) as in (4) is interpreted on a par with a bare nominal supplied by the context of discourse. Although I believe that there are good reasons to adopt 'DP-reconstruction' over 'Disguised VP-Ellipsis' and 'Supplied N Head,' I must leave their comparison to another occasion. See some discussion on the 'Supplied N Head' approach below.

⁶ As illustrated by the interpretive restriction in (i) below, *zibun* must be bound:

- (i) [₂ **Kevin Kosunaa**-ga turetekita bodiigaado]-ga **zibun**_{2*1}-no okusan-to odotta.
Kevin Costner₁-NOM brought bodyguard-NOM self_{2*1}-GEN wife-with danced

'The bodyguard Kevin Costner brought danced with self's (= his own) wife.'

Strict identity in (6), in other words, cannot be derived in the way described in Footnote 3.

sloppy identity of a 'pronoun of laziness' in the celebrated 'paycheck sentence' as in (7) below, for instance, arises when the reconstruction of the pronoun's DP antecedent is followed by the syntactic binding of the contained pronoun as in (8) (cf. Jacobson (1980)): (For ease of explanation, we relate **the man** and **his** directly, disregarding **who** and its trace.)

- (7) The man who gave [_{DP3} **his**, paycheck] to his wife is wiser than the man who gave **it**₃ to his mistress.
- (8) a. LF_i: The man_i who gave [_{DP} **his** paycheck] to his wife is wiser than the man who gave [_{DP} **his** paycheck] to his mistress.
- ↑
- b. LF_i: The man_i who gave [**his_i**, paycheck] to his wife is wiser
than **the man₂** who gave [**his_i**, paycheck] to his mistress.

While the pragmatics does not permit strict identity in (7), a similar sentence as in (9) below exhibits strict identity, and this interpretation can be derived when the syntactic binding takes place before DP-reconstruction does, as illustrated in (10):⁷

- (9) The man who_i had [₃ **his**, car] stolen suspects the teen-age boy who was staring at **it**_i from a nearby truck when he left the parking lot.
- (10) a. LF_i: The man_i who had [_{DP} **his_i**, car] stolen suspects the teen-age boy
who was staring at **it** ...
- b. LF_i: The man_i who had [_{DP} **his_i**, car] stolen suspects the teen-age boy₂ who was staring at [_{DP} **his_i**, car] ...

One may object to an approach like this because it treats ellipsis and pronouns on a par, reconstructing the DP antecedent over an overt pronoun as in (8a) and (10b). This concern, however, can be dismissed once we decide to: (i) adopt **covert** reconstruction (i.e., LF-copying) of the antecedent in ellipsis constructions, and (ii) adopt the Bare Output Conditions of Chomsky (1995). First, covert reconstruction for ellipsis presupposes the postulation of phonetically empty proforms like [_{VP} e] and [_{DP} e], which are anaphorically related to their antecedents. In a sense, then, ellipsis is regarded as nothing but a type of anaphora involving a phonetically empty proform. The only distinction between the DP-Ellipsis as in (4) and the anaphora involved in (7) and (9) therefore is that the former involves a phonetically empty proform while the latter involves a lexical (i.e., phonetically non-empty) proform. Furthermore, the Bare Output Conditions, one of the main tenets of the minimalist program, require the phonetic/phonological features of lexical items to be

⁷ See Kitagawa (1995) for the proposal that a similar covert operation is involved in the coreference between a name and a pronoun as in (ia) below as one instance of the application of 'Affect' for anaphora:

- (i) a. LF_i: [**John_i**'s mother] saw **him_i**. ⇒
 b. LF_i: [**John**'s mother] saw **John**
- ↑

non-existent (or invisible) at the LF-interface.⁸ As far as the covert syntax is concerned, in other words, there should not exist any reason to discriminate between the phonetically empty proforms involved in ellipsis and overt proforms like pronouns of laziness. In both cases, when an anaphoric relation is established between a proform and its **mutually non-commanding** antecedent (which perhaps presupposes agreement in one or more of their formal features like category, number, person and gender), the semantic features of the latter is reconstructed onto the former. Based upon such considerations, we can assimilate all of VP-Ellipsis in (1), DP-Ellipsis in (4) and pronouns in (7) and (9), rejecting the view that ellipsis involves full reconstruction at LF while anaphora does not. Note that postulating PF-deletion for ellipsis does not permit us to assimilate pronouns in (7) and (9) to ellipsis. (We will discuss PF-deletion further below.) This provides the general background for the analysis proposed below.⁹

⁸ Chomsky's Spell-Out is designed to strip away all the lexical information relevant only to PF and send the rest to LF. Alternatively, we may let all the lexical information carried over to both PF- and LF-derivations, and define what features each interface selectively sees. In this approach, phonetic contents of lexical items, for instance, are not visible at LF. This alternative is cost-less since the correct application of Spell-Out presupposes the distinction between those lexical features relevant to PF and those relevant to LF at any rate. It may also be a better alternative than Spell-Out if it turns out that certain formal features play a role at both interfaces.

⁹ Tomioka (1998) presents the examples in (i) below and claims that sloppy identity for pronouns of laziness in English have tighter restriction than that for the empty proforms in Japanese as in (4):

- (i) a. Gary likes **his** mother. Tim likes **her**, too.
 — **her** = *Tim's mother
- b. Gary lost **his** ID in the gym. Tim lost **it** in a classroom.
 — **it** = ???Tim's ID
- c. Gary thinks **his** teachers are geniuses, but Tim thinks **they** are nuts.
 — **they** = ???Tim's teachers

With somewhat tighter sequencing of eventualities, and especially with genericity, as in (ii) below, however, sloppy identity becomes possible in similar discourses:

- (ii) a. Quite often, a young husband has not learned the proper way of expressing his affection to **his** wife, but an old man usually knows how to please **her**.
 — **her** = an old man's wife
- b. John and Bill have totally different policies concerning the upbringing of their own children. While John disciplines **his** children quite often, Bill tries to let **them** learn right from wrong on their own.
 — **them** = Bill's children
- c. Many dog lovers walk **their** dogs in the park, but of course there are thousands of people who have no choice but to walk **them** on the street.
 — **them** = the dogs of thousands of people.

This suggests that syntactic derivations should converge for these sentences, while the resulting representations are perhaps subject to further interpretive restrictions.

2. Strict Identity in Ellipsis

Let us now examine the interpretation of VP-Ellipsis in English as in (11) and (12):

- (11) [A statement made by the principal of a boys' school]
 In our school, **every student**_x [_{VP} respects **his**_x teacher], and the parents also expect me to [_{VP} e].
- (12) In this school, **every student**_x [_{VP} respects **his**_x teacher], but unfortunately, the principal doesn't [_{VP} e].

In both these sentences, the first clause involves a proform that is bound by a quantificational antecedent and is interpreted as a variable. When the VP in this clause is interpreted at the ellipsis site, the bound proform **his**_x contained in the VP exhibits a type of 'strict identity,' being interpreted as something like **their** or **those**. Thus, the elided VPs in (11) and (12) are interpreted roughly as 'respect **their** (or **those**) teachers.'¹⁰

Similar interpretations are obtained also when the antecedent VP contains a bound anaphor **each other** as a possessor as in (13) below, provided that the speaker permits 'couple-internal' reciprocity in its antecedent clause as in (14) to begin with:

- (13) [A statement made by a marriage counselor]
Every couple_x [_{VP} criticizes **each other**_x's odd habits], and quite often, I am also inclined to [_{VP} e].
- (14) **Every couple**_x criticizes **each other**_x's odd habits.

In (11)-(14), ellipsis follows either an infinitival marker **to** or a negated auxiliary verb. It therefore seems inappropriate to reduce the strict identity in (12), for instance, to the pragmatics-based interpretation of **do** as a main verb. The strict identity in question, in other words, seems to be made possible indeed by VP-Ellipsis rather than by the pragmatic control of 'deep anaphora' in the sense of Hankamer and Sag (1976)).¹¹

Furthermore, when the bound proforms **their** and **each other** in (15a-b) below are reconstructed at the ellipsis sites, they are interpreted as 'about forty percent of the students' and 'about forty percent of couples,' respectively, rather than as 'students' or 'couples':

¹⁰ Grammar also permits sloppy identity here, although we will concentrate on strict identity in our discussion.

¹¹ The pronoun **him** in (i) below cannot strictly refer to **Bill**:

(i) Mary blamed **him**₁, and **Bill**, did [_{VP} e], too.

As has been discussed in Kitagawa (1991b, pp. 504-505), this puzzling interpretive restriction can be explained if the elided VP is reconstructed in covert syntax, and the resulting LF-representation is subject to the Condition B of the Binding Theory, as illustrated in (ii):

(ii) LF: Mary blamed **him**₁, and **Bill**, did [_{VP} blame **him**₁], too

VP-Ellipsis involving **do**, in other words, does in fact exhibit properties that can be captured if it involves syntactic reconstruction and binding rather than pragmatic control.

- (15) a. The survey indicates that, in our school, **about forty percent of the students**_x, quite mistakenly, [_{VP} consider **their**_x SAT scores as satisfactory], but as principal, I must say I cannot [_{VP} e].
- b. [A statement made by a marriage counselor]
- About forty percent of couples**_x [_{VP} complain about **each other**_x's appearance(s)] even when I can find absolutely no reason to [_{VP} e].

The reconstructed proform in each of these examples, in other words, is intended to refer to the members of the set linguistically specified by the quantified antecedent of the 'original' proform in the antecedent VP rather than to refer to the entire set of 'students' or 'couples,' which, one might claim, is contextually made available.

Moreover, the elided VP in (16) below is interpreted as 'like **each** contestant's performance':

- (16) The contestants came up to the stage and performed one by one. **Every contestant**_x seems to have [_{VP} liked **his**_x performance], but **each time**, the judge apparently didn't [_{VP} e].

The availability of this distributive interpretation at the ellipsis site also suggests that the strict identity here is based upon the interpretation of the proform bound by a quantificational element, and that a contextually available set reading as mentioned above is irrelevant. In short, the strict identity in question does **not** seem to arise because of the reference to the pragmatic context but rather due to some syntactically established anaphoric relation.¹²

Returning now to the sentences in (11)-(13), let us provide the observation that their non-elliptical counterparts as in (17) and (18) below are not well-formed. In particular, the proform showing up in the second clause cannot be legitimately bound by its antecedent in the first clause:

- (17) In our school, **every student**_x [_{VP} respects his_x teacher], but unfortunately, the principal doesn't [_{VP} respect ***his**_x teacher].
- (18) **Every couple**_x [_{VP} criticizes **each other**_x's odd habits], and quite often, I am also inclined to [_{VP} criticize ***each other**_x's odd habits].

What this indicates is that when the proforms in (11)-(13) are interpreted at the ellipsis site, they **cannot** undergo the process of syntactic binding in that position. The unsuccessful binding in (17) and (18) also suggests, first, that the ellipsis in (11)-(13) cannot be handled by PF-deletion applying to (17) and (18) as their base-generated and hence LF representations. Second, these ellipsis constructions cannot involve simple and full reconstruction of the **unbound** proform by any of LF-Copy, semantic or pragmatic accommodation, or a version of the E-type strategy which regards proforms simply as descriptions in disguise.

One may try to account for the grammaticality of (11)-(13) by combining LF-Copy of the antecedent with the 'vehicle change' analysis proposed by Fiengo and May (1994). As illustrated in (19), for instance, vehicle change can yield a well-formed LF of (13) with **their** as the 'pronominal correlate' of (the trace of) **other**'s:

- (19) LF: **Every couple**_x [_{VP} criticizes **each other**_x's odd habits], and quite often, I am also inclined to [_{VP} criticize **their**_x odd habits].

¹² I am grateful to Hajime Hoji and Ayumi Ueyama for useful discussion on this issue.

Note that the locality constraint imposed on anaphor binding will be irrelevant at the ellipsis site in (19). A similar analysis applied to (20) below, however, would yield an incorrect result. Notice that vehicle change would incorrectly provide a well-formed LF as in (21) for the ungrammatical sentence (20):

- (20) ?*Every couple_i [_{VP} criticizes each other_i], and quite often,
I am also inclined to [_{VP} e].
- (21) LF: Every couple_i [_{VP} criticizes each other_i], and quite often,
I am also inclined to [_{VP} criticize them_i]

We thus should not make an appeal to vehicle change to deal with the ellipsis in (12), either.¹³

Finally, suppose that one attempts to capture the strict identity in (11) by bringing the second clause containing the reconstructed proform into the domain of its antecedent in the first clause as illustrated in (22) below, along the line of 'dynamic binding' (Chierchia (1995), et al.): (The representation is simplified and the irrelevant details are omitted.)

- (22) $\forall x$ [_{IP} student (x) \wedge respect (x, x's teacher) \wedge respect (I, x's teacher)]

Even if the reconstructed anaphor in (13) can be brought into the binding domain of every couple in a similar way, however, the subject of the second clause I (or PRO bound by I) would remain to be the local binder of the reconstructed anaphor each other, and the locality constraint on anaphor binding would still remain unsatisfied.¹⁴ Moreover, quite importantly, it must be assumed that this strategy is not available when the proform, to be 'dynamically bound' is base-generated as in (17). It therefore would remain unanswered why dynamic binding applies only when ellipsis is involved.

Let us now examine the interpretation of the empty nominal (i.e., DP-Ellipsis) in Japanese as in (23):

¹³ Fiengo and May (1994, p. 269) report that the strict identity in question is possible in the antecedent-contained deletion as in (i):

- (i) The men_i [_{VP} introduced each other_i to everyone that the women did [_{VP} e]].

Most of over ten speakers I have checked with reject such a reading, although they accept a sloppy identity interpretation. In addition, all of them including the few who are not sure if strict identity is absolutely impossible in (i) find a similar sentence as in (ii) below ungrammatical:

- (ii) The men_i [_{VP} introduced each other_i to everyone that I { did [_{VP} e]
wanted to [_{VP} e] }].

Note that the plural subject the women in (i) as the potential local antecedent of the reconstructed anaphor is replaced by the singular subject I in (ii). The ungrammaticality of (ii) then would lead us to the rejection of the vehicle change analysis in both (i) and (ii). See Kitagawa (1991b, p. 527), however, for some ideolectal variations concerning sloppy identity involving each other. Note also that the ungrammaticality of (20) would remain unaccounted for in the pragmatic account of the strict identity in (13). Kitagawa (1991a) offers an account of the contrast between (13) and (20).

¹⁴ See Huang (1983) and Kitagawa (1994, pp. 355-357), among others, for the discussion on the constraint that anaphors must be bound by the closest antecedent.

- (23) siritu-daigaku-no dono kyoozyu_x-ga [_{DP} zibun_i-no gakusee]-o suisensite-mo,
private-college-GEN which professor-NOM [_{DP} self-GEN student]-ACC recommend-ever
Monbusyoo-wa [_{DP} e] saiyoosi-nai-daroo.
Ministry.of.Education-TOP [_{DP} e] employ-not-perhaps

'No matter which professor of a private college may recommend self's (= his or her own) student, the Ministry of Education will probably not employ them.'

In this sentence as well, the first clause involves a proform bound by a quantificational antecedent, and the bound proform contained in the DP exhibits a type of 'strict identity' when this DP is interpreted at the ellipsis site. Thus, the elided DP in (23) is interpreted roughly on a par with *sono gakusee* 'that student' or *sono hito-no gakusee* 'that person's student.' Here again, the non-elliptical counterpart of (23) as in (24) below does not permit a similar interpretation since the proform *zibun* 'self' showing up in the second clause cannot be legitimately bound by its quantificational antecedent in the first clause:

- (24) siritu-daigaku-no dono kyoozyu_i-ga [_{DP} zibun_i-no gakusee]-o suisensite mo,
monbusyoo-wa [_{DP} *zibun_i-no gakusee]-o saiyoosi-nai-daroo.
self-GEN student]-ACC

This fact forces us to reject the analysis of (23) which lets PF-deletion of an DP apply in the base-generated representation like (24). Any reconstruction of the unbound *zibun* or its dynamic binding will be also inappropriate.

One may also try to account for the grammaticality of (23) by reconstructing only the head nominal from the first clause and derive a representation as in (25):

- (25) siritu-daigaku-no dono kyoozyu-ga [_{DP} zibun-no [_N gakusee]]-o suisensite mo,
monbusyoo-wa [_{NP=N} gakusee]-o saiyoosi-nai-daroo.
student-ACC

'No matter which professor of a private college may recommend self's (= his or her own) student, the Ministry of Education will probably not employ students.'

Based upon the analysis of empty nominals as NPs rather than DPs, this approach attempts to reduce the strict identity in (23) to the definite interpretation a bare noun in Japanese can exhibit (among other interpretations), as exemplified by (26) (See Footnote 5):

- (26) John-wa reezaa purintaa-o tukatta.
-TOP laser.printer-ACC used

'John used the laser printer(s) / a laser printer / laser printers.'

Tomioka (1998), for instance, attempts to derive the definiteness associated with the interpretation of an empty nominal as in (23) by letting the 'iota' operation apply to the reconstructed nominal head as in (25). When the representation as in (25) contains a base-generated bare nominal *gakusee* 'student,' however, this nominal does not exhibit the interpretation comparable to the empty nominal in (23), but is interpreted as the generic 'student.' The sentence therefore expresses that the Ministry of Education will probably not employ **any student** (as opposed to, for example, someone who has already been teaching as a full-time faculty member.) Anyone who attempts to ascribe the strict identity in (23) to the flexible interpretation of bare nominals in Japanese, therefore, would have to explain the absence of a similar interpretation in its base-generated counterpart (25).

Moreover, the sentence in (23) makes up a quite natural discourse when it is followed by a sentence like (27):

- (27) kokuritu-dai-no gakusee-zyanai-to-ne.
 national university-GEN student-must.be
 'It's got to be a student of a **national university**.'

The students referred to by the empty nominal in (23), in other words, must be those from **private colleges** rather than just 'students,' and such a reading is established only by way of the anaphoric relation established by *zibun*, which is contained in its antecedent DP *zibun-no gakusee* 'self's student.' These facts suggest that the reconstructed content of the empty nominal in (23) is not the head nominal only but the entire DP.

To recapitulate so far, we have examined VP-Ellipsis in English as in (28) and (29) (= (11) and (13)) and DP-Ellipsis in Japanese as in (30) (= (23)), all of which can be descriptively characterized as in (31):

- (28) [A statement made by the principal of a boys' school]
 In our school, **every student**_i [_{VP} respects **his**_i teacher], and the parents also expect me to [_{VP} e].
- (29) [A statement made by a marriage counselor]
Every couple_i [_{VP} criticizes **each other**_i's odd habits], and quite often, I am also inclined to [_{VP} e].
- (30) siritu-daigaku-no **dono kyoozyu**_i-ga [_{DP} **zibun**_i-no gakusee]-o suisensite-**mo**,
 private-college-GEN which professor-NOM [_{DP} self-GEN student]-ACC recommend-ever
 Monbusyoo-wa [_{DP} e] saiyoosi-nai-daroo.
 Ministry.of.Education-TOP [_{DP} e] employ-not-perhaps
 'No matter which professor of a private college may recommend self's (= his or her own) student, the Ministry of Education will probably not employ them.'
- (31) a. A proform in the first clause is **c-commanded** by its quantificational antecedent and is interpreted as a **bound variable**.
 b. **Ellipsis** is involved in the second clause, and the ellipsis site is **outside** the **c-command** domain of its antecedent.
 c. The proform in the antecedent clause is successfully interpreted also at the ellipsis site despite the **lack of a c-commanding binder**.
 d. This **proform** is interpreted at the ellipsis site as a **definite** description of the members of the set defined by the quantificational antecedent of the original proform.

Comparing (28)-(30) with their base-generated counterparts, we have also arrived at the interim conclusion that the derivation of these sentences does not involve any of PF-deletion, reconstruction of unbound proforms or head nominals, vehicle change, and dynamic binding.

This conclusion does not leave us too many options, but suggests, first, that the content of the elided phrase in each of (28)-(30) is **covertly reconstructed** from the antecedent clause, and second, that it is carried out **without** involving the reconstruction of the proform in its **unbound** state. I will therefore adopt the analysis in which the proforms in these sentences are **syntactically bound in the antecedent clause**, and then

covertly copied into the ellipsis site.¹⁵ Under this analysis, since the proform reconstructed at the ellipsis site in each of (28)-(30) has been already bound in the antecedent clause, it need not undergo the covert process of syntactic binding again. It thus escapes binding failure in the second clause of their base-generated counterparts, observed, for example, in (32) (= (17)):

- (32) In our school, every student_i [_{VP} respects his_i teacher], but unfortunately, the principal doesn't [_{VP} respect *his_i teacher], too.

This analysis is based upon the working hypothesis that a proform that has undergone syntactic binding maintains its bound status even after it is reconstructed elsewhere in the syntactic representation. This in fact is what we need to assume even for the strict identity involving non-quantificational antecedent of the proform, for example, for the strict identity of the reconstructed *each other* and *zibun* 'self' exhibit in (33) and (34) below, respectively. Recall that both *each other* and *zibun* must be bound to be well-formed at LF (See Footnote 6):

- (33) They_i [_{VP} liked each other_i's papers], and I did [_{VP} e], too.

- (34) John-wa [_{DP} zibun-no ansyoo-bangoo]-o wasuresimatteita ga,
 -TOP self-GEN PIN.number-ACC forgot though

Okusan-wa [_{DP} e] oboeteita.
 Wife-TOP remembered

'While John forgot his PIN number, his wife remembered { his / her } number.'

Recall also that covert copying applies when a proform and its antecedent (and hence an 'elided' phrase and its antecedent as well) do not c-command each other.¹⁶ Thus the proposed analysis allows us to capture all the descriptive characteristics of (28)-(30) described in (31) above except for (31d). It must be left unexplicated in this work how exactly the definiteness of the proform arises at the ellipsis site in (28)-(30). Since the copying of a bound proform plays the central role in the proposed approach, however, this result is not at all surprising. Note that when we adopt a discourse constraint like the Novelty Condition (Heim (1982)), a copied bound proform should never be allowed to be reintroduced into the discourse as an indefinite item.

The LF-derivation of (12) is provided in (35):

- (35) a. **Syntactic Binding:**

LF_i: In our school, every student_i respects his_α teacher,

 but unfortunately, the principal doesn't [_{VP} e]

¹⁵ Covert copying is assumed to apply within a single discourse, if necessary, across sentence and utterance boundaries.

¹⁶ Under Chomsky's (1995) 'Copy plus Delete' analysis of movement, covert copy here can be regarded as a case of covert movement in which Copy applies without being followed by the application of Delete when neither the extraction site nor the landing site c-commands the other.

b. **VP-Copy:** (cf. Williams (1977))

LF_j: In our school, every student_i [_{VP} respects his_σ teacher],
 but unfortunately, the principal doesn't [_{VP} respect his_σ teacher]

First, as in (35a), the syntactic binding of **his** takes place in the antecedent clause. Then, as in (35b), **his** as a bound proform (whose bound status is indicated by a subscript-σ as a purely mnemonic marker rather than as part of a formal representation) is copied into the ellipsis site as part of the copied antecedent VP.

The LF-derivation of the Japanese example (23) is also provided in (36) below, in which **zibun** as a bound proform is copied, this time as part of a copied DP-antecedent:

(36) a. **Syntactic Binding:**

LF_j: siritu-daigaku-no dono kyoozyu_i-ga [_{DP} zibun_σ-no gakusee]-o
 suisensite mo,
 Monbusyoo-wa [_{DP} e] saiyoosi-nai-daroo.

b. **DP-Copy:**

LF_j: siritu-daigaku-no dono kyoozyu_i-ga [_{DP} zibun_σ-no gakusee]-o
 suisensite mo,
 Monbusyoo-wa [_{DP} zibun_σ-no gakusee]-o saiyoosi-nai-daroo.

3. From Ellipsis to E-type Anaphora

At this point, it is appropriate to bring E-type pronouns as in (37) into the scene:

- (37) a. **Few congressmen** admire Kennedy(, and) **They** are very junior.
- b. John owns **some sheep** and Harry vaccinates **them** in the Spring.
- c. **A dog** came in. **It** lay down under the table.

E-type pronouns are known to exhibit the properties summarized in (38) (Evans (1977), Evans (1980)):

- (38) a. They have **quantified DPs** as their **antecedents**.
- b. They are **not c-commanded** by their antecedents.
- c. Yet, they are successfully interpreted as **definite** descriptions.

We cannot help noting that the properties of E-type pronouns stated in (38) have much in common with those of the ellipsis constructions in (28)-(30) stated in (31) above. In particular, both phenomena permit an item involved in operator-variable binding to be successfully interpreted in a remote position outside the c-command domain of the involved operator. Also, definiteness arises in the resulting interpretation in both cases. In the rest of this work, I would like to propose and argue that E-type anaphora and the ellipsis constructions in (28)-(30) are almost completely parallel — the syntactic derivation of both phenomena involves identical mechanisms, and they both yield the same type of strict identity, involving the copying of the projection of the category D(eterminer) in its bound state.

Near complete assimilation of the two phenomena can be achieved when we pay attention to the fact that they both involve a quantified element in the antecedent clause,

In the syntactic copying approach like ours, the contrast follows naturally, since in (46a), there exists a Bound Trace to be copied as the antecedent of the pronoun after the indefinite undergoes QR, while in (46b), no relevant antecedent DP exists which can be copied onto the pronoun.

The proposed analysis involving DP-copy is also free from the overcopying problem as in (47) associated with other types of syntactic copying approaches like IP-copy by Heim (1990):

- (47) A: A man jumped off the cliff.
 B: He didn't jump. He was pushed. (Heim (1990, 172))

Heim's IP-Copy would copy and adjoin an antecedent IP as in (48) to *he*, and incorrectly force this pronoun to be interpreted as something like "a man that jumped off the cliff."

- (48) [_{IP} a man_i [_{IP} t_i jumped off the cliff]]

The proposed approach also wins a theoretical advantage of maintaining a single syntactic operation of covert copying for the analysis of VP-Ellipsis, DP-Ellipsis, E-type pronouns, and in fact pronouns of laziness as well.

4. Minimal Variable Binding and Logical Number

In this section, we will see first that the proposed approach to E-type anaphora encounters a potential problem. We will argue that this problem will be solved by postulating a type of economy condition of a general nature. It will then be pointed out that this economy-based solution will permit us to further broaden our empirical coverage thereby providing us with independent motivation for the proposed approach.

4.1 Overgeneration of Operators

First, let us observe that (49a) and (49b) are not synonymous:

- (49) a. Few congressmen_x admire Kennedy. **They**_x are very junior.
 b. Few congressmen_x admire Kennedy. **Few congressmen**_{y,x} are very junior.

In (49a), the pronoun *they* may be intended to denote the set of individuals defined by *few congressmen* showing up in the previous sentence. The two instances of *few congressmen* in (49b), on the other hand, cannot be intended to define the same set of individuals, although the two distinct sets of individuals they define may end up with overlapping partially or perhaps even completely.

What this contrast implies to the proposed approach to E-type anaphora is that for the LF-derivation of (49a) we should not allow the covert computational process to duplicate the quantificational antecedent itself, while we still would like to have its Bound Trace to be copied. Since nothing we have postulated so far guarantees such selective application of covert Copy, we have a problem of overgenerating an operator at LF, as illustrated in (50):

- (50) a. Copy:
 LF: Few congressmen admire Kennedy. **Few congressmen** are very junior
 |-----↑

(53) Minimal Variable Binding:

Variable binding is minimal — a 'single' operator establishes an operator-variable binding **only once in a derivation**.

The notion 'single' operator referred to in (53) is defined as in (54):

(54) 'Single' Operator:

One or more instance of a morphologically identical operator constitutes a 'single' operator if they are intended to define an identical set.

When we assume that each instance of a quantificational element must undergo QR and binds its variable at LF, this economy constraint will yield the effect of prohibiting more than one instance of a 'single' operator from showing up at LF, whether they are base-generated or derived by the application of covert Copy. We may then consider that the covert copying of the quantificational DP in (50a) is in fact legitimate, but the constraint (53) rules out the multiple operator-variable relations established by a 'single' operator as in (50b). We thus can free ourselves from the problem of overgenerating operators at LF in the analysis of E-type anaphora.¹⁸

The Minimal Variable Binding in (53) can be independently motivated in an interesting way. Observe, first, the paradigm in (55) below. (55a) indicates that a universally quantified element *every boy* must be treated as singular. (55b), on the other hand, suggests that *every boy* in fact is plural. Making the situation even more complicated, (55c) illustrates that *every boy* can be ambiguous between singular and plural. A universally quantified element, in other words, exhibits rather unpredictable restriction as well as flexibility in its number agreement with other items:

- (55) a. *Every boy* { *is* / **are* } happy.
 b. *Every boy* left. { **He* / *They* } must be angry.
 c. *Every boy* knows that { *he* / *they* } should apologize.

A careful examination of this paradigm, however, will provide us with the following observations and generalizations. First, this paradigm in fact involves two distinct types of number agreement — 'inflectional' agreement in (55a) and 'referential' agreement in (55b) and (55c). It may be said, in other words, that *every boy* exhibits flexibility in referential agreement but not in inflectional agreement. This point can be confirmed when we observe that (55c) becomes ungrammatical when we alter the inflectional agreement while leaving the rest of the sentence intact as in (56):

- (56) **Every boy know* that { *he* / *they* } should apologize.

¹⁸ In the proposed approach, the Minimal Variable Binding in (53) does not rule out a sentence like (ia) below, whose semantics is often represented as in (ib), providing us with the impression that the operator can in fact establish more than one instance of operator-variable binding:

- (i) a. *Every student* respects *his* teacher.
 b. $\forall x$ { student (x) \rightarrow respect (x , x 's teacher) }

Whichever derivation in (ii) below we may adopt in the proposed approach, *every* establishes operator-variable binding only once in the derivation with its trace t_D e $]$, and the pronoun *his* establishes its variable status by being bound by t_{DP} e $]$, in (iia) and by t_{DP} t_D e $]$ student $]$, in (iib):

- (ii) a. *Every* _{x} t_{DP} t_D e $]$ student $]$, t_{VP} t_{DP} e $]$, respects *his* _{y} , teacher $]$
 b. *Every* _{x} t_{DP} t_D e $]$ student $]$, respects *his* _{y} , teacher $]$

The contrast between (55b) and (55c) further suggests that the flexibility in referential agreement is permitted **only when the antecedent c-commands the pronoun**.¹⁹ Furthermore, when we replace the quantificational subject **every boy** in (55c) with a non-quantificational subject as in (57a) and (57b) below, the referential agreement also becomes static. This suggests that the quantificational force of the antecedent is crucial in permitting the flexibility of referential agreement:

- (57) a. **That boy** knows that { **he** / ***they** } should apologize.
 b. **Those boys** know that { **they** / ***he** } should apologize.

All these observations follow when we extend the notion of linguistic number in the way described below, and combine it with the Minimal Variable Binding in (53).

First, we recognize what we will refer to as 'overt number,' which is the number associated with a 'nominal' lexical form in the lexicon (or in the numeration, if one opts for such an approach). This is perhaps the standard notion of linguistic number for syntacticians, and it has traditionally been regarded as relevant to both inflectional and referential agreement.

In addition to overt number, we recognize what we will refer to as 'logical number.' Logical number is activated by operator-variable binding and realized on the DP containing the trace of a raised D as a variable, and hence only quantificational elements can exhibit logical number in addition to its overt number. Since it is activated for the first time at LF, it is relevant only to meanings, contrary to overt number, which may be relevant to both meanings and forms.²⁰ Logical number therefore plays a role in referential agreement but not in inflectional agreement, which has PF properties as its indispensable aspect. Overt number, on the other hand, is available both at PF and LF (See Footnote 8 for the alternative to Spell-Out), and it can play a role in both inflectional and referential agreement.

If a nominal element is non-quantificational, overt number generally is the only possible type of number it may have, and it never exhibits flexibility in either inflectional or referential number agreement, as observed in (57).²¹ A lexical form of a quantificational nominal also has its overt number. **Every boy**, for example, is associated with singular number just like the non-quantificational **that boy** is. In the proposed number system, however, this will not be the end of the story. While a quantificational element exhibits overt number before it undergoes QR, it exhibits, or more precisely its Bound Trace exhibits, logical number after it undergoes QR. As a result, if there exists discrepancy

¹⁹ The so-called telescoping poses an exception to this generalization. It is quite possible that telescoping involves the covert copying of an N-projection rather than a DP. Such an analysis is compatible not only with the logical singularity a universal quantifier exhibits in telescoping but also with the fact that telescoping must be licensed by genericity in a broad sense. See Poesio and Zucchi (1992) and references therein for relevant discussion.

²⁰ cf. May's (1985) semantic number of quantificational elements.

²¹ Certain non-quantificational nominal expressions like **family**, **audience**, and **committee** may exhibit flexibility in their overt numbers since their singular forms can refer to either a unit or the members of the unit:

- (i) a. the **family** that **has** just moved in
 b. My **family are** all very well.

between the overt number and the logical number of a quantificational element, a possibility arises for some flexibility in its referential agreement.

I believe that the flexible referential agreement observed in (55c) above is one such case, in which either of the **singular overt** number associated with the lexical form every boy and the **plural logical** number associated with its Bound Trace may play a role in the referential agreement involving this quantificational antecedent. How does this discrepancy between the overt number and logical number of every boy arise? In particular, what is the source of its plural logical number? The answer to this question seems to lie in the function of the operator-variable binding established by the application of QR as in (58):

(58) LF: $\text{Every}_x [{}_{\text{DP}} [{}_{\text{D}} \text{e}]_{x\sigma} \text{boy}] \text{ left.}$
 $\uparrow \text{QR}$

Roughly speaking, this operator-variable binding establishes plural eventualities by letting the quantifier every pick out all the members of a presupposed set defined by its restrictor boy in a given pragmatic context, which, at least in default cases, is **non-empty and non-singleton**. Subject to slight modification below, we ascribe the non-singleton status of such a presupposed set as the source of the plural logical number of a universally-quantified nominal expression like every boy.

When we combine this extended notion of number with the Minimal Variable Binding (53) adopted above, we can capture the otherwise puzzling agreement facts in the paradigm (55) quite straightforwardly. First, the static nature of the singularity of every boy observed in (55a) can be ascribed to its overt number, which is the only number relevant to inflectional agreement. Second, we can also capture the flexibility of referential agreement in (55c), in which every boy c-commands the pronouns. As illustrated in (59a) below, the singular pronoun he may agree with the lexical form every boy, which exhibits singular overt number. While the plural pronoun they has no chance to legitimately agree with every boy itself, after this quantificational antecedent undergoes QR as in (59b), this pronoun may agree with its Bound Trace, which exhibits plural logical number: (Dotted lines indicate referential agreement.)

(59) a. Referential agreement with overt number (before QR):

LF: Every boy knows that he should apologize.
 |.....|

b. Referential agreement with logical number (after QR):

LF: $[\text{Every}_x [{}_{\text{DP}} [{}_{\text{D}} \text{e}]_{x\sigma} \text{boy}] \text{ knows that they should apologize}]$
 $\uparrow \text{QR}$ |.....|

Finally, the absence of similar flexibility in referential agreement in (55b) also follows naturally. Recall that the pronouns are not c-commanded by their quantificational antecedent every boy in (55b), which is the structural condition for the application of overt Copy, as we have seen before. First of all, when the pronoun is plural as in (60a) below, legitimate referential agreement can take place only when the copied antecedent is plural. This situation can arise when every boy undergoes QR as in (60b), and the Bound Trace, which is plural, is identified with the plural pronoun they as in (60b), and copied as in (60c):

(60) a. **Everybody** left. **They** must be angry.

b. QR:

LF: $\text{Every}_x [{}_{\text{DP}} [{}_{\text{D}} \text{e}]_{x\sigma} \text{boy}] \text{ left. They must be angry.}$
 $\uparrow \text{QR}$ |.....|

c. **Copy:**

LF_j: Every_x [_{DP} [_D e]_{κσ} boy] left. [_{DP} [_D e]_{κσ} boy] must be angry.

Crucially, when the bound trace is copied as in (60c), the Minimal Variable Binding (53) is satisfied, and the derivation converges.

When the involved pronoun is singular, as in (61a) below, on the other hand, it must agree with the lexical form *every boy*, which is singular, rather than with its Bound Trace, which is plural. The copying of the operator in its lexical form therefore is required, as in (61b):

(61) a. LF_j: **Every boy** left. **He** must be angry.

b. **Copy:**

LF_j: Every boy_x left. Every boy_x must be angry.

c. **QR:**

LF_k: Every_x [_{DP} [_D e]_{κσ} boy] left. Every_x [_{DP} [_D e]_{κσ} boy] must be angry.

This derivation will eventually crash, however, failing to satisfy the Minimal Variable Binding (53) when both the original and the duplicate of *every body* undergoes QR and establish more than one instance of operator-variable binding by a 'single' operator, as in (61c).

Thus, the proposed covert copying approach incorporating the Minimal Variable Binding (53) and the extended number system permits us to capture the otherwise mysterious and arbitrary flexibility of number agreement observed in the paradigm (55).

4.2 Indefinites vs. V and NEG

The extended number system we have adopted has further virtues. It is often pointed out in the literature that indefinites need not observe a 'scope-island,' while other quantificational elements like *every* and *no* must, as illustrated by the paradigm in (62):²²

- (62). a. A dog_x came in. **It_i** lay down under the table.
 b. **Every** dog_x came in. ***It_i** lay down under the table.
 c. **No** dog_x came in. ***It_i** lay down under the table. (Heim (1982, 13))

As has been noted sporadically in the literature,²³ and as has been observed in (55) above, however, *every* and *no* also need not observe a 'scope-island' when the pronoun is plural. See also (63) for more examples:

²² See, for instance, Fodor and Sag (1982), Heim (1982) and Chierchia (1995) for relevant discussion.

²³ See, for example, May (1985) and Lappin (1988/89).

- (63) a. **Every dog_x** came in. **They_x** lay down under the table.
 b. [A detective trying to prove that Mary is lying says]:
 The truth is that John wrote **no article_x**.
 Mary therefore cannot possibly have read **them_x**.
 c. If John owns **no sheep_x**, there is no way for Harry to vaccinate **them_x**.

Some researchers disregard such examples, claiming that plural pronouns involve some anaphoric relation distinct from E-type anaphora. Chierchia (1995), for instance, states that "... every quantified noun phrase can make salient a set of entities (roughly, the set associated with its head noun). This set can then be referred to in subsequent discourse." (p. 4)

Simply stating that the set associated with the head noun can be referred to by a plural pronoun, however, leaves many important questions unanswered. For instance, the second clause in (64) expresses multiple eventualities quite naturally as its primary reading:

- (64) Every dog_x came in one by one, and **they_x** lay down where they_x were supposed to.

Therefore, when we interpret (64), it is quite natural for us to imagine a chain of events in each of which a dog comes in and lies down wherever it wanted, each dog ending up in a different place. When a plural nominal head is overtly expressed in the second clause as in (65) below, on the other hand, it is noticeably less natural to make a primary reading out of a similar distributive interpretation:

- (65) Every dog_x came in one by one, and **the dogs_x** lay down where they_x were supposed to.

The distributive interpretation in the second clause of (64) can be naturally ascribed to the existence of quantification in the first clause if the Bound Trace of **every / no** is copied onto **they**. If each plural pronoun in (63) simply refers to a set associated with the head nominal of its antecedent, on the other hand, the contrast between (64) and (65) would remain mysterious. This approach would also leave it unexplained why the head nouns do not yield similar plurality when they are quantified by existential quantifiers, as in (66):²⁴

- (66) a. **A dog_x** came in. ***They_x** lay down under the table.
 b. **Some dog_x** came in. ***They_x** lay down under the table.

We can, on the other hand, capture all the facts in (62)-(66) in terms of referential number agreement when we postulate the logical number as in (67) below for the Bound Traces of the quantificational elements involved in these examples:

²⁴ Providing examples like (i) and (ii) below, Lappin (1988/89) convincingly argues that the antecedent of a donkey pronoun (as a type of E-type pronoun) need not contain a weak D (contra Reinhart (1987)), and that there is no need for the quantifier containing the antecedent to c-command the donkey pronoun (contra Haik (1984)). Note that in (i) the set of at least half the films at the festival need not be identical for each critic:

- (i) Every critic who saw at least half the films at the festival_i liked **them_i**.
 (ii) John spoke to [every student who submitted a paper_x] about the possibility of publishing **it_i**.

(67)

	Overt Number	Logical Number
<i>Every / No</i>	Singular	Plural
<i>Some / A</i>	Singular	Singular

Though in the opposite way, a negative D **no** behaves exactly like **every**, and picks out **none** of the members of the presupposed non-empty, **non-singleton** set. It therefore exhibits plural logical number just like **every**. The existential D's **some** and **a**, on the other hand, do not involve any such non-singleton set in a given pragmatic context. They therefore exhibit singularity in both their overt and logical numbers. In all of (62)-(66) above, therefore, DPs containing **every** or **no** must referentially agree with a plural pronoun, while those containing **a** or **some** must referentially agree with a singular pronoun. A crucial basis of our analysis again is the corollary of the Minimal Variable Binding we have discussed—that is, these examples necessarily involve the copying of Bound Traces rather than the quantificational antecedents. Thus, the otherwise puzzling contrast between **every/no** and **some/a** follows straightforwardly in the proposed approach incorporating the Minimal Variable Binding and the extended number system.

Earlier, we identified, as the source of the plural logical number, a non-singleton status of a set presupposed by a quantifier. The following example suggests that we need to be a little more precise in making such a statement:

- (68) Pick up **every book** on the desk, if there's any, and bring (**them / *it**) back to me.

Note that the expression if there's any indicates that the speaker does not presuppose the **actual** existence of any set of books on the desk. Yet, the plural pronoun **them** can be still anaphoric to **every book**. Incorporating this observation, we revise our generalization as in (69):

- (69) The logical number of an operator is plural if the '**candidate**' set it presupposes in a given pragmatic context is non-empty and non-singleton.

The intuitive idea behind this generalization is that the use of **every** and **no** presupposes the existence of a 'candidate' or 'potential' set of plural entities out of which the quantifiers select a designated quantity of the members, even if it does not presuppose the actual existence of such entities.²⁵

Finally, there are cases as in (70) below, in which E-type pronouns may show up **either** as singular or plural:

- (70) **Every** student turned in a **paper**_x.
 a. **It**_x went into his or her folder.
 b. **They**_x were all identical. (Heim (1990))

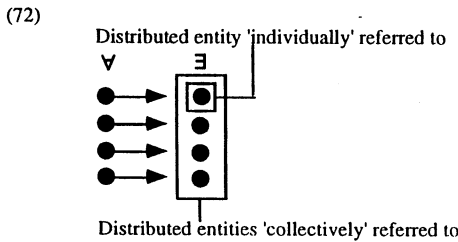
The phenomenon here strikes us as contradictory to the number agreement analysis provided above, in which we assumed that the Bound Trace of an existential quantifier is singular in its logical number. If we examine the example in (70) carefully, however, we notice that there is an extra factor involved. The first clause contains a logically plural

²⁵ The notion 'downward-entailing' operators does not seem to be relevant, either, since **at least n** and **many**, which are not downward entailing, can be (overtly-as well as) logically plural. I am grateful to Leslie Gabriele for helping me clarify the relevant notion here.

quantificational expression every student c-commanding the indefinite as the antecedent of the E-type pronouns. On the contrary, when we replace every student in (70b) with the logically singular some student as in (71) below, a plural pronoun can no longer be anaphoric to the indefinite:

(71) **Some** student turned in a paper_x. { **It**_x / ***They**_x } went into her folder.

The source of plurality in (70b), in other words, indeed seems to be the presence of a higher logically plural quantificational expression. How can this extra factor turn the singular Bound Trace of an existential quantifier into plural? Although I am not ready to offer any definite answer to this question, it seems plausible for us to tentatively ascribe this phenomenon to the distributivity involved in the scopal interaction between universal and existential quantifiers. That is, when an existential quantifier takes its own scope within the scope of a universal quantifier, the logically singular Bound Trace of an existential quantifier may distribute under the logically plural universal quantifier, and such distributed entities may be referred to not only 'individually' as singular but also 'collectively' as plural, as graphically illustrated in (72):



We still maintain, in other words, our position that the Bound Trace of an existential quantifier per se is logically singular.

We can confirm that this insight is leading us in the right direction when we examine the scope interaction of two quantificational expressions in an example like (73):

(73) **Every** girl falls in love with **some** prince.

- a. **He**_x is distinctively noble and breath-takingly handsome.
- b. **They**_x are distinctively noble and breath-takingly handsome.

Just as in the case of (70) above, the existentially quantified element in (73) can induce either singular or plural E-type anaphora when it is interpreted distributively under the scope of the universal quantifier. On the contrary, if we eliminate such distributivity by letting the existential quantifier in (73) take scope higher than that of the universal quantifier, perhaps with an emphatic stress on some, plural E-type anaphora as in (73b) no longer seems to be permitted. It therefore seems possible to ascribe the plurality an indefinite exhibits as in (70) while maintaining its logical singularity as postulated in (67).

5. Summary

In this work, I first pointed out that some ellipsis constructions exhibit a type of strict identity involving a bound proform, and argued that such an interpretation be derived by the covert copying of a bound proform. I then pointed out quite pervasive parallelism between such ellipsis constructions and E-type anaphora, and proposed to extend the covert copying approach from ellipsis to E-type anaphora. The proposed analysis crucially postulates the covert copying of a Bound Trace of the form $[_{DP} I_D e]_{\alpha, NP}$, and the

economy restriction imposed on the copied operators by the Minimal Variable Binding. It was also argued that the proposed approach can provide straightforward accounts for certain puzzles concerning agreement and quantifier scope when it is supplemented by the number system which distinguishes the overt number of the lexical form of a quantificational expression from the logical number of its Bound Trace.

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