On Clitic Doubling and Argument Ellipsis

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The paper examines a surprising and non-obvious case of interaction between clitic doubling and argument ellipsis, which elides full arguments (as in *He kissed ~~Mary~~*, with *Mary* elided; note argument ellipsis is unavailable in English), and explores what it tells us about the nature of clitic doubling and especially argument ellipsis, for which a new account is proposed. I also address the more general issue of whether certain interpretations of nominal expressions are derived via type-shifting triggered by null heads present in the syntax or postsyntactically, without corresponding syntactic structure.

Pronominal elements normally do not support sloppy readings. Runić (2014), however, notes several cases where pronominal clitics in Serbo-Croatian (SC) do yield such readings. Thus, the clitic in (1) allows both the strict reading, on which both Nikola and Danilo invited Nikola's girlfriend, and the sloppy reading, on which Nikola invited Nikola's girlfriend and Danilo invited Danilo's girlfriend.[1] The availability of the sloppy reading is rather surprising here, given that pronominal elements normally do not support such readings. Thus, the sloppy reading is unavailable in English (2).

(1) Nikola je pozvao (svoju) djevojku na slavu, a pozvao **ju** je i Danilo. [SC]
    Nikola is invited his girlfriend on slava and invited her.CL.ACC is too Danilo
    'Nikola invited his girlfriend to the slava and Danilo invited his (Danilo's/Nikola's) girlfriend too.'
(2) Nikola invited his girlfriend, and Danilo invited **her** too.

The obvious difference here is that the pronominal in (1) is a clitic. One might then reason that clitichood is the relevant factor here, i.e. that, in contrast to non-clitic pronouns, clitic pronouns do support sloppy readings. That a simple clitic/non-clitic approach cannot work here can be seen by looking at other languages. Thus, clitics in Macedonian do not support sloppy readings (Runić 2014).

(3) Nikola ja povika devojka si na slava, a Daniel **ja** povika isto [Mac]
    Nikola her.CL.ACC invited girl him.CL.DAT.REFL at slava and Daniel her.CL.ACC invited too
    'Nikola invited his girlfriend to the slava and Daniel invited Nikola's/*Daniel girlfriend too.'

Maybe then it is something about SC that allows pronominal elements to support sloppy readings. Treating pronominal elements in SC in general as exceptional regarding the sloppy reading is not a winning strategy either, given that non-clitic pronouns do not support sloppy readings even in SC.

(4) Nikola je pozvao (svoju) djevojku na slavu, a pozvao je **nju** i Danilo. [SC]
    Nikola is invited his girlfriend on slava and invited is her too Danilo
    'Nikola invited his girlfriend to the slava and Danilo invited Nikola's/*Danilo's girlfriend too.'

The availability of the sloppy reading in (1) is rather puzzling in light of (2)-(4). The goal of this paper is to provide an account of the exceptional behavior of (1) and investigate its consequences for clitic doubling and argument ellipsis, which will be argued to be crucial in understanding (1). Regarding argument ellipsis, the goal is to establish the conditions under which argument ellipsis can apply and more generally, to contribute to our understanding of it by providing a semantically based

[1] Runić gives this context for the sloppy reading: Nikola and Danilo are brothers and their family celebrates St. Nicholas. It is a common practice to invite a boyfriend/girlfriend to the celebration. Both Nikola and Danilo have a girlfriend (thus, in this context, there are two girlfriends) and they invited their girlfriends to the celebration.

account of argument ellipsis which will also considerably broaden its scope. In particular, it will be argued that argument ellipsis actually involves predicate ellipsis, which will be implemented as LF copying of elements of type <e ,t> (see also Tomioka 2003). The LF copying process in question itself is not parameterized; it can in principle apply even in a language like English, which is assumed not to allow argument ellipsis. However, for independent reasons it cannot yield argumental interpretation in English, while it can in a language like Japanese, which is assumed to allow argument ellipsis.

I will first discuss Runić's (2014) broader generalization regarding sloppy reading cases like (1).

1. On the (un)availability of sloppy readings with clitics crosslinguistically

Bošković (2008, 2012) gives over 20 generalizations where languages differ regarding a number of syntactic and semantic phenomena depending on whether they have articles (i.e. definite articles), which means the presence/absence of articles cannot simply be a PF effect. Based on this, Bošković (2008, 2012) argues there is a fundamental structural difference between languages with and without articles. In particular, all the differences in question can be provided a unified account if languages with articles have DP and languages without articles lack it. I will assume this to be the case.

Runić (2014) establishes a new generalization regarding clitics that also runs along the NP/DP lines. As noted above, sloppy readings are standardly assumed to be unavailable with pronominal elements. Runić shows that they are available with pronominal clitics but that languages differ in this respect. In particular, they are available with clitics in NP, but not in DP languages. Thus, as noted above, the clitic in SC (1) supports the sloppy reading on which Nikola invited Nikola's girlfriend and Danilo invited Danilo's girlfriend (cf. the context in fn 1). The same holds for Slovenian (5). This is not possible in Macedonian (3) and French (6), which allow only the strict reading. What is important here is that Macedonian and French have definite articles, i.e. they are DP languages, while SC and Slovenian lack definite articles, i.e. they are NP languages in Bošković's (2008, 2012) typology.

(5) Marko je povabil (svojo) punco   na zabavo, in povabil **jo**   je tudi Peter [Slov]
    Marko is invited (his)   girlfriend on party   and invited her$_{CL.ACC}$ is also Peter.
       'Marko invited his girlfriend to the party and Peter also invited his (Marko's/Peter's) girlfriend.'
(6) Nicolas a invité sa petite amie à la fête et Danilo **l'**a   invitee aussi. [Fr]
    Nicolas has invited his girlfriend to the party and Danilo her$_{CL.ACC}$'has invited too.
       'Nicola invited his girlfriend to the party and Danilo invited Nicola's/*Daniel's girlfriend too.'

Runić discusses additional sloppy readings and a number of other Slavic and Romance languages (and Greek), which all confirm the above pattern, i.e. they confirm the NP/DP cut (e.g. the only Slavic languages where clitics disallow sloppy readings are Macedonian and Bulgarian, the only Slavic languages with articles). Runić then concludes we are dealing here with a more general pattern here.

(7) Clitics may have sloppy readings only in NP languages.

Before providing an account of (7), I will make a short digression to discuss argument ellipsis, which will be crucially involved in the account (see Runić 2014 for an alternative account where clitics in NP and DP languages differ semantically, which is not the case with the account proposed below).

2. Argument ellipsis

Many languages have been shown to allow argument ellipsis. They include Japanese, Hindi, ASL, Turkish, Korean, Chinese, Malayalam, Mongolian, and Javanese (Oku 1998, Kim 1999, Saito 2007, Şener and Takahashi 2010, Koulidobrova 2012, Simpson et al 2013, Cheng 2013, Sato 2015, a.o). One of the defining properties of argument ellipsis is sloppy readings: (8b) allows the sloppy reading (H's son), unlike the pronoun in (8c). Based on this (and other arguments), the above authors have argued that on the sloppy reading (8b) does not involve *pro*, but argument ellipsis, with 'his son' elided.[2]

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[2] The works in question also show Otani and Whitman's (1991) V-raising+VP ellipsis analysis cannot account for the full argument ellipsis paradigm (e.g. sloppy readings are available in the contexts where VP ellipsis is not).

(8) a. Taro-wa   [zibun-no musuko-ga eigo-o   sitteiru to] itta
      Taro-TOP   self-GEN   son-NOM   English-ACC know   that said
      'Taro said that his son knew English'
   b. Hanako-wa [*e* furansugo-o sitteiru to] itta
      Hanako-TOP   French-ACC know   that said
      'Hanako said that *e* knew French.'
   c. Hanako-wa [**kare-ga** furansugo-o   sitteiru to] itta
      Hanako-TOP he-NOM   French-ACC   know   that said   (Japanese)

2.1. Argument ellipsis and clitic doubling

What the above data indicate is that ellipsis (i.e. argument ellipsis) but not overt pronouns gives rise to sloppy readings.[3] In light of this, I suggest that the possibility of sloppy readings in examples like (1) indicates that SC clitics co-occur here with an elided NP, i.e. we are dealing here with a clitic+ argument ellipsis combination. In other words, we are dealing here with a clitic doubling construction, where the doubled element is derived via argument ellipsis.[4] The argument ellipsis NP, rather than the clitic, is the source of the sloppy reading. This analysis immediately explains why non-clitic pronouns, as in (4), do not yield such readings: only clitic pronouns are involved in the clitic doubling construction, non-clitic pronouns are not. Under this analysis, clitic and non-clitic pronouns in SC do not differ regarding the availability of sloppy readings, they are unavailable with both. Furthermore, SC and Macedonian clitics also do not differ regarding the possibility of sloppy readings—neither of them gives rise to such readings. The difference here lies in the availability of argument ellipsis.

The argument ellipsis derivation, where argument ellipsis co-occurs with a clitic, then should be unavailable in DP languages, given Runić's observation that clitic constructions in DP languages do not support sloppy readings. This restriction in fact straightforwardly follows, given Cheng's (2013) generalization regarding the availability of argument ellipsis. In particular, following up on Bošković (2012), Cheng (2013) establishes the generalization that argument ellipsis is possible only in article-less (i.e. NP) languages (all the languages cited above as allowing argument ellipsis lack articles).

(9)   Only languages without articles may allow argument ellipsis.

Given that what licenses the possibility of sloppy readings in clitic constructions is actually argument ellipsis, and that argument ellipsis is not available in DP languages, we then capture Runić's observation that sloppy readings are not available with clitics in DP languages.

(9) is a one-way correlation; it does not say all NP languages allow argument ellipsis. Japanese does, for both subjects and objects. Şener and Takahashi (2010) show Turkish allows it for objects but not subjects. SC patterns with Turkish. Before showing this, note that what is important for us is that argument ellipsis is allowed with objects, its unavailability with subjects is irrelevant to the preceding discussion. That being said, (10) shows argument ellipsis is unavailable in the subject position in SC: the strict reading (Peter's child) is possible in (10b), the sloppy reading (Jovan's child) is not.

(10) a. Petar je rekao da   njegovo dijete zna   engleski.
       Petar is said   that his   child   knows   English
       'Peter said that his child knew English'
    b. Jovan je rekao da   *e* zna   francuski.
       Jovan is said   that   knows   French
       'Jovan said that *e* knew French.'

That SC has argument ellipsis in object position is harder to show since SC has V-stranding VP ellipsis, where the verb moves out of the VP, which is followed by VP ellipsis (see Stjepanović 1998). Merely not eliding the verb is then not enough to ensure that argument ellipsis rather than VP ellipsis is taking place. An argument for object argument ellipsis therefore needs to rule out the possibility of V-stranding VP ellipsis. (11)-(12) do in fact indicate that SC has object argument ellipsis.

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[3] What is important is that sloppy readings are not possible with pronouns in the contexts under consideration.
[4] I will return below to the more general issue of clitic doubling in SC.

(11) a. Ona je poslala svoje   predstavnike   jedan   drugome.
         she is sent [her_{anaphor} representatives_{acc}]   [each   other_{dat}]
         'She sent her representatives to each other.'
      b. *Ona je poslala jedan drugome svoje predstavnike.
(12) ?Ona je poslala svoje   predstavnike   jedan drugome, a   on je predstavio jedan drugome.
       she is sent   [her_{anaphor} representatives_{acc}] [each other_{dat}]   and he is introduced [each other_{dat}]

(11) shows that in the construction in question, only the DO-IO word order is possible-the IO cannot undergo movement. This rules out the V-stranding VP ellipsis derivation for (12). Under that derivation, both the V and the IO would have to move out of the VP, with the DO remaining in the VP to be elided under VP ellipsis. But then (12) should be at least as bad as (11b), which it clearly is not.

One may then wonder how other NP languages Runić (2014) discussed behave in this respect. While the issue merits attention for independent reasons, it is actually not relevant for our purposes; in fact, whether the NP languages in question allow object argument ellipsis in non-clitic constructions turns out to be irrelevant to the proposed analysis of the clitic constructions. The reason has to do with the unavailability of argument ellipsis in (10). Saito (2007) gives an account of the impossibility of argument ellipsis in subject cases like (10) that allows argument ellipsis in clitic examples like (1) regardless of whether argument ellipsis is allowed in the object position in examples without clitics.

Like Cheng (2013), Saito (2007) is concerned with the issue of what kind of languages may allow argument ellipsis. Saito argues that agreement matters here. In particular, he argues for (13).

(13) Agreement blocks argument ellipsis   (Saito 2007)

Since Japanese in general lacks agreement, it has both subject and object argument ellipsis; on the other hand, since SC (and the same holds for Turkish) has subject but not object agreement, argument ellipsis is blocked by (13) only for the subject position in SC (and Turkish).[5]

Importantly, Saito's (2007) deduction of (13) makes the issue of whether languages like SC allow argument ellipsis in the object position irrelevant to the availability of argument ellipsis in the clitic doubling cases discussed above. Under his account, T/v cannot undergo agreement with an argument ellipsis TNP, hence argument ellipsis is not available when T/v have an agreement requirement that can only be satisfied by an argument ellipsis TNP. (I use the term traditional NP (TNP) neutrally, to stand for NP and its extended projections, if any). Saito argues languages like Japanese, which lack morphological agreement, also lack agreement in general. In such languages, T/v then do not undergo agreement (i.e. they are not subject to an agreement requirement), hence argument ellipsis is possible.[6]

How about languages with overt agreement, but only in some positions? Şener and Takahashi (2010) argue the overtness of morphological agreement for particular heads matters here. Recall that on Saito's analysis (cf. fn 6), a functional head cannot undergo Agree with an argument ellipsis TNP. When agreement is morphologically manifested the relevant functional head must undergo agreement. Given the overtness of subject agreement in SC, T is then subject to the agreement requirement in SC, which means subjects cannot undergo argument ellipsis in SC. On the other hand, when agreement is not morphologically realized, in principle the relevant functional head may or may not be subject to an agreement requirement, where it would have to undergo Agree. None of the languages relevant for (7) have overt object agreement. Agreement itself then cannot tell us anything about whether they would allow object argument ellipsis. If their v is subject to the agreement requirement, object argument ellipsis would be blocked, if it isn't, it wouldn't be. Importantly, regardless of whether v is subject to the agreement requirement, i.e. regardless of whether object argument ellipsis is available in the relevant languages, this analysis does <u>not</u> block the argument ellipsis derivation in clitic constructions. In clitic cases like (1), the clitic undergoes agreement with v. The argument ellipsis TNP that co-occurs with it then does not undergo agreement with v, hence argument ellipsis is not blocked for this TNP.

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[5] *e* in (10) is then *pro*, which in turn provides evidence that agreement-licensed *pro* cannot be clitic doubled.

[6] Saito assumes an unchecked Case feature makes TNPs visible for phi-feature agreement with functional heads (Chomsky 2000). Argument ellipsis TNPs undergo Case-licensing in their original position before LF copying. They are copied without an unchecked Case feature, hence they are inactive for agreement in the new position. The argument ellipsis derivation then fails in languages where there is a functional head that must agree with a TNP, argument ellipsis TNPs being inactive for agreement (see Saito 2007, in press on non-TNP arguments).

Under the combined Cheng/Saito analysis, we get exactly the right cut: argument ellipsis is always blocked in DP languages, including clitic cases like (3), but is allowed in NP languages like SC in the clitic cases regardless of its availability in non-clitic cases. Since argument ellipsis is allowed in the presence of an object clitic in the relevant languages regardless of whether it is available in its absence, I will not examine if other relevant languages allow object argument ellipsis in the absence of a clitic.

The argument ellipsis analysis of the paradigm in (1)-(4) also has consequences for the general issue of the availability of argument ellipsis. It in fact provides evidence that both Cheng (2013) and Saito (2007) are right: both DP and agreement have the blocking effect on argument ellipsis.

Summing up, the proposed account captures the restricted availability of sloppy readings with pronominals, where they are available with clitics in some but not all languages, and unavailable with non-clitics even in the languages that allow them with clitics. The analysis also provides evidence that both Cheng (2013) and Saito (2007) are right regarding what determines the availability of argument ellipsis: both the lack of DP and the lack of agreement are prerequisites for argument ellipsis.

2.2. The overtness of clitic doubling

Under the analysis presented above, SC clitics can co-occur with an NP that undergoes argument ellipsis. What is of interest here is that most SC varieties actually disallow overt clitic doubling (i.e. clitic doubling by an overtly realized element) in examples like (14). (Some SC varieties do allow (14), see Runić 2014; also, as noted below, some cases of doubling are allowed in all varieties).

(14) *Ivan **ga** napisa **pismo**.
     Ivan it   wrote   letter   (SC)

Given that on the current analysis of (1) the clitic here co-occurs with another TNP, which means such a combination should not be completely ruled out in SC, we need to address the unacceptability of (14), a classical clitic doubling case. This section will show that an independently proposed account of crosslinguistic variation regarding the availability of clitic doubling actually predicts that clitic doubling will be available in SC with argument ellipsis; i.e. it provides a straightforward, natural explanation why clitic doubling is not possible in (14) but is possible with argument ellipsis in SC.

Clitic languages differ regarding the possibility of clitic doubling; thus, Spanish (15) is acceptable.

(15) Lo   vimos   a Juan.
     him we-saw a Juan

A prominent and well-known approach regarding the crosslinguistic variation in question treats it in terms of Case (e.g. Sportiche 1996, Jaeggli 1986). In languages where clitic doubling is not allowed a problem in such cases arises with respect to Case: since the clitic takes the Case that the verb would normally assign, the doubling TNP cannot be Case-licensed. In languages where clitic doubling is allowed, such licensing is possible—in some cases special mechanisms are involved, like *a* in Spanish.

SC (14) is then ruled out because *pismo* cannot be Case-licensed.[7] That Case may indeed be what is at issue here is suggested by (16), noted by Sanja Raković (p.c.), where *ga* and *bus* bear different

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[7] Macedonian allows examples like (14) without any special Case-marking, as in (i).
    (i) Ivo go napisa pismoto.
       Ivo it   wrote letter-the   (Macedonian)
Bošković (2008, 2012) argues this kind of doubling is possible only in DP languages (the observation is confined to doubling accompanied with a definiteness effect; see Runić 2014, who shows that in Prizren-Timok Serbian, which allows (14), such cases do not involve the kind of doubling Bošković was concerned with). There should then be a general restriction where the Case issue in question (the Case-licensing of the double) may be resolvable only in (some) DP languages (with the kind of clitic doubling Bošković 2012 was concerned with). Suppose the clitic and the double in (i) are involved in Case-feature sharing as in Frampton & Gutmann (2002) and Pesetsky & Torrego (2007), where the two unvalued Case features, one on the clitic and one on the double, are instances of the same unvalued feature. When the Case feature of the clitic is valued by v, it is also valued on its double, since this is the same Case feature. The proposal is then that feature sharing of this type is possible only for functional, not lexical elements. This means DPs, but not NPs, can enter such feature sharing, hence the way of resolving the Case issue noted here (where the clitic and the double have the <u>same</u> Case) is unavailable in NP languages.

Cases, hence the Case problem does not arise here (note that nominative is the default case in SC).[8]

(16) Evo ga   bus
   here it.ACC bus.NOM
   'Here is the bus.'

Importantly, the Case problem from (14) does not arise at all when the doubling element is an argument ellipsis NP. The NP in question undergoes Case-licensing in its own clause prior to LF copying, hence no problem with respect to the Case-licensing of the doubling NP arises in this case.

In fact, as discussed in fn 6, in his deduction of (13) Saito (2007) crucially argues that argument ellipsis NPs are Case-licensed in their original clause before LF copying and do not undergo Case-licensing in their "new" clause after LF copying. Thus, he derives (8b) as follows: *zibun-no musuko-ga* is Case-licensed in the antecedent clause, (8a); it is then copied in LF into the target clause, (8b), where it is not involved in any Agree relation; it does not undergo either agreement or Case-licensing.

Independently made proposals regarding clitic doubling and argument ellipsis discussed above in fact make a prediction that argument ellipsis will be available in SC with clitic doubling and that clitic doubling with be possible in SC with argument ellipsis, exactly as in the analysis proposed above.

The current analysis also provides evidence that argument ellipsis should be treated in terms of LF copying, not PF deletion. If we apply the latter to the SC case under consideration, where the double is elided, a difficult question arises that does not have an obvious answer: why does the relevant NP have to be deleted in these cases (as indicated by (14))? On the other hand, under the LF copying analysis there is an easy explanation why this NP does not surface phonologically: it is created only in LF. Furthermore, we have seen above that the Case account of the unacceptability of (14) does not extend to the cases where the double is an argument ellipsis NP under the LF copying analysis of argument ellipsis, since the double is Case-licensed under this analysis. This is not the case under the PF deletion analysis; the Case problem from (14) should also arise in the cases where the double is elided in PF, which would be the case under the PF deletion analysis of argument ellipsis.[9] The current analysis can then be taken to provide evidence that argument ellipsis should be implemented through LF copying, not PF deletion (for additional arguments to this effect, see Saito 2007, Sakamoto in press).[10]

It should be noted that the current analysis captures the varied behavior of the pronominals in (1)-(4) regarding the sloppy reading without saying anything special about clitic vs non-clitic pronouns, or anything special about clitics in one language vs clitics in another language. All these pronominals, clitics in SC, clitics in Macedonian, non-clitic pronouns in SC, and non-clitic pronouns in English, are treated the same way regarding the sloppy reading (none of them supports it); all the differences regarding the sloppy reading in (1)-(4) follow from other factors, which were all independently argued for in the literature; nothing new was in fact proposed here to capture this variation. Having discussed the paradigm in (1)-(4), I will now turn to a more general discussion of the nature of argument ellipsis.

3. What exactly is argument ellipsis, and why is it possible only in NP languages?

I will first examine the issue of why argument ellipsis is restricted to NP languages. Consider first how the NP/DP distinction can be treated semantically. The most straightforward implementation of the distinction can be found in Chierchia (1998), i.e. in his treatment of DP languages vs NP languages like Russian, if we extend his treatment of Russian to all NP languages, a natural move in light of the NP/DP generalizations where NP languages as a class are opposed to DP languages as a class.

Chierchia (1998) argues that DP is not needed for argumenthood, which opens the door for an NP analysis of languages like SC. As in the current work, for Chierchia SC TNPs are NPs. They are of type <e, t>, and become of type e (i.e. they are turned from predicates into arguments) by covert type shifting, which can be easily incorporated into Bošković's (2012) system: SC TNPs are then NPs, with covert type shifting applying to turn them into arguments. In article languages like English, D does the job in question. Thus, the definite article maps type <e, t> to type e. As a result, the TNP itself (i.e.

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[8] It is not completely clear though that (16) involves clitic doubling.

[9] The only way out would be to assume that Case violations, where an NP is not Case-licensed, can be voided by deleting the NP in PF, on a par with the assumption that locality violations can be rescued by PF deletion.

[10] This does not mean all ellipsis should be treated as LF copying (see here Dadan in press, Sakamoto in press).

without application of any covert type shifting operations) here has the type e in English. Excluding purely covert type shifting operations not triggered by elements present in the syntax, SC TNP is still of type <e,t>.[11] It should be noted here that although Chierchia assumes SC and Chinese both lack DP, he treats Chinese differently semantically. Given the parallel behavior of SC and Chinese regarding the NP/DP generalizations, where they systematically pattern together and against article languages like English and Romance (see Bošković 2012), I will assume there is no type difference between Chinese and SC. This means that Chinese NPs are also of type <e,t>, with covert type shifting to e in the cases where e interpretation is required. This treatment of Chinese is very similar to Cheng and Sybesma (1999), where Chinese NP is also treated as being of type <e,t> (see also Tomioka 2003 for Japanese).

Simplifying somewhat, in the syntax itself argumental TNPs are then of type e in DP languages and of type <e, t> in NP languages. D turns NPs of type <e, t> to e in DP languages; while in NP languages this is accomplished via type shifting. What is important for our purposes is that considering only the structure that is present in the syntax itself (and excluding any covert type shifting not triggered by syntactic structure), argumental TNPs are of type <e, t> in SC and of type e in DP languages—the syntactic structure itself here corresponds to type e in DP languages.

The above gives us a semantic implementation of the NP/DP distinction. The proposal then is that argument ellipsis is semantically constrained. In particular, I adopt (17).[12]

(17) Argument ellipsis affects elements of type <e, t>.

Recall that I have argued above that argument ellipsis involves LF copying (that it is defined in semantic terms is in fact another argument to this effect). Given that not all ellipsis should be treated as LF copying (see fn 10; in fact, the strongest arguments for LF copying treatment of any ellipsis operation involve argument ellipsis, see Sakamoto in press), (17) can also be stated more generally:

(18) Only elements of type <e, t> can be copied in LF.

(18) states only elements of type <e, t> can be copied. Note the copying still applies in the syntax (i.e. covert syntax), which means that it applies before type shifting. Recall now that considering the structure that is present in the syntax itself, argument TNPs are already of type e in DP languages. However, they are of type <e, t> in NP languages. Given that argument ellipsis affects only elements of type <e, t>, through LF copying, the process is then restricted to NP languages. This deduces (9).

To illustrate with an argument ellipsis derivation, being of type e, DP *the student* cannot be copied in LF into the position of X in (19), given (17)-(18). The problem does not arise in Japanese (20), where the direct object is of type <e, t> at the point of LF copying. *Gakusei-o* is then copied into the position of X in (20), with type shifting applying after the copying to yield the e-type interpretation.

(19) a. Peter failed the student.   b. *John failed X too.
(20) a. John-wa gakusei-o   rakudais-ase-ta.   b. Peter-mo X rakudais-ase-ta.
          John-TOP student-ACC   fail-CAUS-PAST   Peter-also   fail-CAUS-PAST
          'John failed the student.'   'Peter also failed.'

There is another derivation to be blocked for (19). Suppose that what is copied into the position of X in LF is not the full TNP but only the NP *student*, which is of type <e, t>, hence this copying operation does not run afoul of (17)-(18). This is in fact what happens in Japanese (20). Recall, however, that the copying operation is followed by a covert type shifting operation, from type <e, t> to type e, in Japanese (20). This is not possible for English (19) under the derivation currently under

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[11] I ignore TNPs with elements like demonstratives. The discussion here adapts Chierchia (1998) to Bošković's NP/DP typology since the two do not correspond completely. In Chierchia's system, bare NP arguments are allowed in some cases in English though not in Romance. However, the NP/DP generalizations, where English always patterns with Romance, indicate that even in these cases DP is present in English. Bošković then concludes English TNPs are always DPs. (In line with this, I assume English argumental TNPs are of type e without any covert (i.e. non-D triggered) type shifting (see also fn 14), which is in fact Chierchia's treatment of Romance.)

[12] It should be noted that Tomioka (2003) (i.e. his property *pro*) is an important predecessor of the analysis argued for here, which situates the gist of Tomioka's proposal within a broader perspective.

consideration. The problem is that DP languages do not have access to the pure type-shifting operations of the kind NP languages do (see Chierchia 1998). In particular, in the case in question, the existence of a definite article, which does the job of an iota operator, mapping elements of type $\langle e, t \rangle$ to type e, blocks the application of a pure type shifting operation that would map an element of type $\langle e, t \rangle$ to type e in English. The "Japanese" derivation from (20) is then not possible in English (19).

(17) is tantamount to saying traditional argument ellipsis is actually predicate ellipsis. Argumental interpretation is still possible for the result of such ellipsis in NP languages since they have access to pure type shifting operations that turn predicates into arguments; in fact, such type shifting operations are independently needed to obtain the indicated interpretation for Japanese (21a). The reason why argument ellipsis is possible in Japanese but not English is then in fact the same reason why English (21b) cannot be interpreted as "John failed the student", an interpretation available for Japanese (21a). The analysis thus unifies (21) with the (un)availability of argument ellipsis in (19)-(20).

(21) a. John-wa gakusei-o   rakudais-ase-ta.   b. *John failed student.
        John-TOP student-ACC fail-CAUS-PAST
        'John failed the student.'

Under the above analysis, argument ellipsis is actually predicate ellipsis. The predicate ellipsis operation itself is not parameterized, i.e. it is not restricted to NP languages. Such an operation for independent reasons cannot yield argumental interpretation in DP languages (while it can in NP languages). However, there is nothing in anything we have seen above that would prevent such an ellipsis operation from applying in DP languages. Everything else being equal, we may then expect predicate ellipsis to be available in (at least some) DP languages, in fact not just for predicates like VPs, but also for TNP predicates.[13] Predicate TNP ellipsis may in fact indeed be possible in DP languages. It may be instantiated even by English (22), with ~~fools~~ derived via predicate ellipsis.[14]

(22) They are fools, and we are ~~fools~~ too

In other words, we may be dealing here with the same process as argument ellipsis of NP languages, which means that $\langle e, t \rangle$ ellipsis would not be in principle restricted to NP languages.

Finally, returning to NP languages, if the above approach to argument ellipsis, where argument ellipsis is treated essentially as predicate ellipsis, is correct we would expect to find true predicate TNP ellipsis in languages like Japanese as well. Such ellipsis is indeed possible in Japanese, as in (23).

(23) a. Karera-wa baka da.   b. Watasitati-mo [e] da.
        they-top   fool cop   we-also   cop
        'They are fools.'   'We are also [e].'

Such examples indicate that the term argument ellipsis is a misnomer; the ellipsis process in question is not limited to arguments. In fact, given that even argumental TNPs are actually predicate TNPs in NP languages at the relevant point of the derivation, the term predicate ellipsis is more appropriate and in fact captures the full scope of the phenomenon.

The last question to address is whether TNPs in predicate positions can serve as antecedents for ellipsis of TNPs in argument positions and the other way round. As long as independent factors do not interfere we would expect to find such cases in languages like Japanese. It should, however, be noted that there are independent factors that may be relevant here, in particular, the well-known parallelism requirement on ellipsis. At any rate, (24) shows a TNP in a predicate position can be an antecedent for an elided TNP in an argument position. This can be interpreted as providing evidence for the current analysis, which unifies predicate and argument ellipsis (under the umbrella of predicate ellipsis).

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[13] We are dealing here with the issue of what kind of ellipsis is in principle possible. Languages can still block certain options for language-specific reasons (e.g. many languages disallow VP ellipsis for unclear reasons).

[14] I assume there is a null D in the object in *He likes students*, which converts properties to kinds (see fn 11). Also note Saito's (2007) agreement problem, which arises with traditional argument ellipsis in English, does not arise in (22), since *we* can check the phi-features of T (*fools* need not enter feature-checking in the second conjunct).

(24) a. Karera-wa gakusei da.   b. Boku-wa [e]   aisiteiru.
        they-TOP   student COP   I-TOP   love
        'They are students.'   'I love [e].'

However, TNPs in argument positions cannot be antecedents for TNPs in predicate positions.

(25) a. Boku-wa gakusei-o   aisiteiru.   b. *Karera-wa [e] da.
        I-TOP   student-ACC love   they-TOP   COP
        'I love students.'   'They are [e].'

I suggest this is a parallelism issue: if the antecedent bears a theta-role the target also must bear a theta-role. The requirement rules out (25b), but not (24b). It is worth noting here that Chung (2013) shows sluicing does not tolerate argument structure mismatches, which leads her to posit an argument structure parallelism requirement for sluicing. Furthermore, regarding argument ellipsis itself, Takahashi (2006) shows a subject cannot be an antecedent for an object argument ellipsis, which indicates that if the antecedent bears the external theta-role, the target must also bear the external theta-role. We may be dealing with the same family of parallelism requirements in all these cases.

The above makes type <e, t> special in that it can undergo LF copying, in contrast to type e. The question is why? M. Erlewine (pc) notes a way of approaching the issue in terms of what cannot undergo LF copying, which makes type e exceptional. Its exceptional status can be approached by assuming that with type e, what would be copied is the individual reference, not the e-type description, while with non-elementary types like <e, t> the whole denotation is copied. The former would be blocked, the intuition being that this is what deep anaphora, i.e. pronouns, is for. I leave this possibility open.

4. Conclusion

The paper has provided an account of the limited availability of sloppy readings with pronominal elements, where they are available with clitics in some but not all languages, and unavailable with non-clitics even in languages that allow them with clitics. The proposed account does not say anything special about clitics vs non-clitics, or clitics in one language vs clitics in another language. Under the account, the locus of the variation does not lie in the semantics of pronominal elements-the pronominal elements in question are all treated the same way regarding sloppy readings; none of them supports it. All the differences regarding the (un)availability of sloppy readings come from other independently motivated factors. In particular, given that sloppy readings are a hallmark of ellipsis, the constructions where they are licensed were argued to involve ellipsis; i.e. they were argued to involve a clitic doubling structure where the double undergoes argument ellipsis. The analysis easily explains why sloppy readings are possible only with clitics—only clitics occur in clitic doubling constructions. Under this analysis, the variation regarding sloppy readings boils down to the variation in the availability of argument ellipsis. Given that what licenses sloppy readings in clitic constructions is actually argument ellipsis, Runić's (2014) observation that sloppy readings are possible only in languages without articles follows from Cheng's (2013) observation that argument ellipsis is possible only in languages without articles. The discussion has also enabled us to draw a number of conclusions regarding clitic doubling and argument ellipsis. Regarding the former, the discussion has provided evidence that Case is crucially involved in the licensing of clitic doubling, as proposed in Jaeggli (1986). As for argument ellipsis, the discussion has provided evidence that both Cheng (2013) and Saito (2007) are right regarding what determines the availability of argument ellipsis: both the lack of DP and the lack of agreement are prerequisites for argument ellipsis. The discussion has also provided evidence that argument ellipsis should be treated in terms of LF copying, not PF deletion.

I have also argued for a semantically based approach where argument ellipsis is actually predicate ellipsis-it involves LF copying of elements of type <e, t> (cf. Tomioka 2003). This considerably broadens the scope of what was considered to be argument ellipsis; it is part of a larger phenomenon which is much more widely available. The analysis easily explains why what was considered to be argument ellipsis is possible only in article-less languages, deducing Cheng's (2013) generalization. Modifying Chierchia (1998) by extending his account of Russian to all article-less languages, I have argued bare nominals are of type <e, t> both in languages with and without articles. While D converts them to arguments, i.e. type e, in languages with articles, in article-less languages this conversion is

done in the semantics by pure type shifting (from <e, t> to e). Regarding arguments, what corresponds to the structure that is present in the syntax itself (before any type shifting) is then of type e in DP languages, but type <e, t> in NP languages. Predicate ellipsis, i.e. ellipsis of elements of type <e, t>, can then affect elements in argument positions in languages without articles because argumental TNPs are actually predicate TNPs, i.e. of type <e, t>, when the ellipsis applies in such languages. LF copying of predicates is in principle available in both DP and NP languages. However, it has a broader scope of application in the latter due to the lack of DP. LF copying of predicates, i.e. elements of type <e, t>, can yield argumental interpretation in NP, but not in DP languages since the type shifting that is needed for argumental interpretation is available only in NP languages for independent reasons, i.e. Chierchia's blocking effect, where the presence of a lexical item that can perform <e, t>-to-e type shift blocks the application of a type shifting operation with the same effect. There is then no independent parameterization regarding argument ellipsis. Traditional argument ellipsis is restricted to NP languages and non-agreeing contexts due to independent factors, which are themselves not parameterized: LF copying of elements of type <e, t>, which is responsible for the former, and the Activation Condition, which is responsible for the latter, are not parameterized. What the crosslinguistic variation in this domain boils down to is the variation in the amount of structure projected and the agreement properties of particular functional heads, which can both be formulated in terms of lexical variation.

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