ϕ-Agreement and Definiteness as Two Variations on the Same Theme:

New Evidence from East Asian Argument Ellipsis

Abstract: Previous works on Argument Ellipsis/AE (Oku 1998; Kim 1999; Şener and Takahashi 2010; Takahashi 2007, 2010, 2013a, b) point out that Japanese allows this option for null subjects and objects alike, unlike Chinese, which accepts this option only for null objects. Drawing on Saito's (2007) Anti-Agreement Hypothesis, Takahashi (2010, 2013a) proposes that this cross-linguistic difference follows from the assumption (Miyagawa 2010) that Chinese has person-agreement associated with the grammatical subject, unlike Japanese which lacks a ϕ-agreement system altogether (Fukui 1986; Kuroda 1988). Rejecting this agreement-based analysis on empirical and conceptual grounds, I propose instead that the subject-object asymmetry in Chinese follows from the well-known definite subject restriction, which, in turn, is derived from the topic-prominent profile of this language (Li and Thompson 1976, 1981). More generally, I argue that the [Top] feature in topic-prominent languages like Chinese and ϕ-agreement in subject-prominent languages like Italian, both inherited to T from the phase-defining head C (Chomsky 2007, 2008; Richards 2007), play essentially the same computational role in uniquely determining the content of a missing subject in [Spec, T] as a definite description/*pro* (Taraldsen 1979; Chomsky 1981). I further show that this non-parametric uniformity theory yields a new insight into the nature of the cross-linguistic, position-sensitive distribution of AE.

1.   Introduction

Argument Ellipsis (henceforth, AE) is one of the most extensively investigated research topics within the framework of Generative Grammar in the last 15 years or so. Recent works on East Asian languages, especially Japanese, Korean, and Chinese, have developed a variety

of empirical arguments showing that certain instances of the missing grammatical arguments – empty subjects and direct objects – cannot be accommodated by the traditional *pro*-based analysis (Kuroda 1965; Ohso 1976; Hoji 1985; Saito 1985), but instead can be better analyzed through PF-deletion or LF-reconstruction; see Oku (1998), Kim (1999), Saito (2007), Şener and Takahashi (2010), Takahashi (2006, 2007, 2008a, b, 2010, 2013a, b) and many other references cited therein. One of the most influential theories of AE in East Asian languages is developed by Oku (1998) on the basis of the data from Japanese. Using the availability of sloppy readings as a crucial diagnostic for AE, Oku proposes that a missing argument is reconstructed at LF by copying an overt linguistic antecedent in a full-fledged clause onto the position of the null argument in an elliptical clause. Oku demonstrates that this theory correctly predicts that Japanese exhibits sloppy readings both in null subject and null object positions. Subsequent work on AE (Şener and Takahashi 2010; Takahashi 2007, 2010, 2013a, b) have discovered, however, that the other AE languages – in particular, Turkish and Chinese – differ from Japanese in that they only allow the AE option for null objects. Adapting the Anti-Agreement Theory of Oku's (1998) LF-Copy Theory originally proposed by Saito (2007), Şener and Takahashi (2010) and Takahashi (2007, 2010, 2013a, b) claim that the subject-object asymmetry in Turkish and Chinese follows from the presence of ϕ-agreement under T; more specifically, the null subject cannot undergo LF-Copy because the active ϕ-agreement blocks this copy process. Japanese, on the other hand, allows free application of the LF-Copy in any argument position because this language lacks ϕ-agreement system altogether (Kuroda 1988; Fukui 1986, 1988, 1995; cf. Miyagawa 2010, 2013).

The present paper has two goals. One of them is to critically examine and reject Takahashi's (2010, 2013a, b) agreement-based analysis of the subject-object asymmetry in Chinese AE. As noted above, his analysis crucially depends on the idea, originally developed

in Miyagawa (2010, 2013), that Chinese manifests ɸ-agreement associated with the grammatical subject despite the lack of its overt morphophonetic instantiations. Miyagawa argues that this idea receives support from the blocking effect on the long-distance third-person construal of the anaphor *ziji* 'self' triggered by the intervention of local non-third-person subjects. However, Miyagawa's treatment of the long-distance anaphor in terms of LF head movement of the anaphor has already been shown in the previous literature on Chinese syntax (Huang and Tang 1991; Xue et al. 1994; Huang and Liu 2001; Li, in press) to have non-trivial empirical problems; see sections 3.1 and 3.2 for full discussions on this blocking effect. This consideration, thus, effectively nullifies the sole empirical argument for the existence of active ɸ-agreement for the grammatical subject in Chinese, which in turn significantly undermines Takahashi's analysis of the subject-object asymmetry in Chinese AE. I further demonstrate that Takahashi's theory suffers from certain conceptual problems from the viewpoint of learnability regarding the acquisition of the syntactically active, though morphologically inert, ɸ-agreement in isolating languages such as Chinese.

The other goal of this paper is, therefore, to propose an alternative explanation for the subject-object asymmetry in Chinese AE vis-à-vis Japanese AE. Specifically, I suggest that the empty subject position in Chinese cannot be reconstructed through LF-Copy due to its well-known discourse constraint on preverbal subject elements − the definite subject restriction − because the sloppy reading, which would be yielded by LF-Copy, would clash with the discourse-driven requirement that the content of the subject be definite in reference. I implement this suggestion within the recent C-to-T Inheritance Model of Phase Theory (Chomsky 2007, 2008; Richards 2007), where the [Top] feature is inherited from the phase-defining head C onto the T, which requires a missing subject in [Spec, T] to serve as discourse topic. One of the major theoretical consequences of this proposal is that ɸ-agreement and [Top] feature are two sides of the same coin; they play essentially the same

computational role in identifying the missing subject in [Spec, T] as definite expression or *pro*.

The present paper is organized as follows. In section 2, I provide a succinct overview of Oku's (1998) LF-Copy Theory of AE and Saito's (2007) Anti-Agreement Hypothesis. In section 3, I point out empirical arguments with Takahashi's (2010, 2013a) proposed extension of the Anti-Agreement Hypothesis to the subject-object asymmetry in Chinese AE. In section 4, I propose that the key inhibitory factor on the LF-reconstruction of the missing subject in AE in Chinese lies in the definite subject restriction, which in turn is derived from its topic-prominent profile. I also examine new insights which our current theory of AE yields for a proper understanding of the cross-linguistic uniformity and variation regarding this phenomenon. Section 5 is the conclusion.

2.   Argument Ellipsis in Japanese and Chinese

In this section, I will provide a brief overview of the patterns of AE in Japanese and Chinese. Let us start with Japanese examples shown in (1a–c).[1]

(1) a.   Taroo-wa   zibun-no   tegami-o   suteta.

        Taro-TOP   self-GEN   letter-ACC   discarded

        '*Lit*. Taro discarded self's letter.'

     b.   Hanako-mo   *e*   suteta.   (^{OK} strict; ^{OK} sloppy)

        Hanako-also   discarded

        '*Lit*. Hanako also discarded *e*.'

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[1] The following abbreviations are used in the data section of this paper: ACC, accusative; ASP, aspect; C, complementizer; CL, classifier; DEM, demonstrative; GEN, genitive; MOD, modification; NEG, negative; NOM, nominative; PAST, past tense; PERF, perfective; PRT, particle; TOP, topic.

c. Hanako-mo   *sore-o*   suteta.   (^{OK} strict; * sloppy)

Hanako-also   it-ACC   discarded

'Hanako also discarded it.'

Restricting our attention to contexts where the null object in (1b), designated here as *e*, is construed as somehow anaphoric to the overt object in (1a) (i.e., *zibun-no tegami* 'self's letter), the example in (1b) allows both the strict (i.e., Hanako also discarded Taro's letter) and sloppy (i.e., Hanako also discarded Hanako's letter) interpretations. The strict reading here is straightforwardly captured by the traditional *pro* analysis (Kuroda 1965; Ohso 1976; Hoji 1985; Saito 1985). However, given that the empty category *pro* mirrors that of its overt counterpart, the *pro*-analysis cannot account for the sloppy reading because its overt counterpart (i.e., *sore-o* 'it-acc') disallows this reading, as shown in (1c).

Recent generative works on AE in Japanese and Korean (Oku 1998; Kim 1999; Saito 2007; Şener and Takahashi 2010; Takahashi 2007, 2008a, b, 2010, 2013a, b) have suggested in one way or another that null arguments which exhibit sloppy readings in these languages arise not through the *pro*-based syntax, but instead through the process of AE. One influential hypothesis regarding the precise mechanism behind AE is Oku's (1998) LF-Copy, which copies an overt linguistic element from a full-fledged clause onto its corresponding empty argument slot in a subsequent elliptical clause. According to this theory, the LF representation for the null object construction in (1b) will be as shown in (2):

(2) LF: Hanako-mo   [NP **zibun-no tegami-o**] suteta.

Hanako-also   self-GEN   letter-ACC discarded

'*Lit*. Hanako also discarded self's letter.'

In (2), the overt antecedent object *zibun-no tegami-o* 'self's letter-ACC' in (1a) is copied at LF onto the empty direct object position in (1b). This reconstruction process, thus, correctly ensures that the sloppy reading is available for (1b). This point is indeed confirmed by the fact that the overt direct object *zibun-no tegami-o* yields the sloppy reading in (3).

(3)   Hanako-mo   zibun-no   tegami-o   suteta.   (^{OK} sloppy)

      Hanako-also   self-GEN   letter-ACC   discarded

      '*Lit*. Hanako also discarded self's letter.'

Oku (1998) also observes that the sloppy interpretation is available for null subjects in Japanese, as well. In (4b), for instance, the null subject can refer either to Taro's child (the strict reading) or to Hanako's child (the sloppy reading). Again, the sloppy reading is correctly predicted by the LF-Copy Theory, which will assign to (4b) the LF representation shown in (5).

(4)   a.   Taroo-wa [$_{CP}$ zibun-no   kodomo-ga   eigo-o   sitteiru-to]   itta.

           Taro-TOP   self-GEN   child-NOM   English-ACC   know-C   said

           '*Lit*. Taro said that self's child knew English.'

      b.   Hanako-wa [$_{CP}$ *e*   furansugo-o   sitteiru-to]   itta. (^{OK} strict; ^{OK} sloppy)

           Hanako-TOP   French-ACC   know-C   said

           '*Lit*. Hanako said that *e* knew French.'

(5)   LF: Hanako-wa [$_{CP}$ **[$_{NP}$ zibun-no   kodomo-ga]**   furansugo-o   sitteiru-to]] itta.

            Hanako-TOP   self-GEN   child-NOM   French-ACC   know-C   said

            '*Lit*. Hanako said that self's child knew French.'

As extensively documented in the previous literature on Chinese syntax starting from Huang's (1984) seminar work on argument drop, Chinese behaves like Japanese in that it allows a rather liberal ommision of grammatical arguments such as subjects and objects. Despite this surface similarity between the two languages, however, Chinese exhibits a curious subject-object asymmetry with respect to the distribution of AE. More specifically, only the null object allows sloppy interpretations in this language. To see this asymetry, let us first consider a null object construction in Chinese in (6b).

(6) a. Zhangsan   kanjian-le   ta-de   mama.

         Zhangsan   see-PERF   he-MOD   mother

         'Zhangsan saw his mother.'

    b. Lisi   ye   kanjian-le   *e*. (^{OK} strict; ^{OK} sloppy)

         Lisi   also   see-PERF

         '*Lit*. Lisi also saw *e*.'

The null object construction in (6b) permits both the strict (i.e., Lisi also saw Zhangsan's mother) and sloppy (i.e., Lisi also saw Lisi's mother) interpretations. As first pointed out by Takahashi (2007, 2008a, 2010, 2013a) (see also Li (in press)), however, the null subject in Chinese allows only the strict interpretation. This observation is illustrated in (7b).

(7) a. Zhangsan   shuo   [$_{CP}$ ziji-de   haizi xihuan   Xiahong].

         Zhangsan   say   self-MOD   child like   Xiahong

         '*Lit*. Zhangsan said that self's child liked Xiahong.'

b. Lisi shuo [$_{CP}$ *e* xihuan Xiaoli]. (^{OK} strict; * sloppy)

Lisi say like Xiaoli

'*Lit*. Lisi said that *e* liked Xiaoli.'

(Takahashi 2007: 6)

Various researchers (Huang 1987, 1991; Otani and Whitman 1991; Goldberg 2005; Rouveret 2012) have suggested that the apparent cases of elliptic null objects in languages such as Chinese, Japanese, Irish and Hebrew can be derived by what they call *Verb-Stranding Verb Phrase Ellipsis* (henceforth, V-Stranding VPE). According to this analysis, the lexical verb undergoes overt V-to-T raising before VP-ellipsis applies. This sequence of operations, then, gives the superficial appearance of elliptic null objects. It is widely known since Williams (1977) that in languages such as English, sloppy interpretations with direct objects within VPs arise as the result of VP-ellipsis, as shown in (8a, b).

(8) a. John will invite his wife to the party. (^{OK} strict; ^{OK} sloppy)

b. Tom will [$_{VP}$ *e*], too.

At first sight, the V-Stranding VPE analysis does seem to capture the subject-object asymmetry with AE in Chinese as well as the availability of sloppy readings in null objects in Chinese and Japanese. However, Oku (1998), Aoun and Li (2008) and Li (in press) have already pointed out that this analysis cannot account for the full range of interpretations available to AE in these languages; see also Hoji (1998) and Kim (1999) for extensive empirical arguments from Japanese and Korean against such an analysis. Let me mention two arguments here from Oku (1998) and Aoun and Li (2008). Firstly, the V-Stranding VPE analysis cannot explain why sloppy interpretations are available for null subjects in Japanese,

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which are not contained with the VP-deletion site in the first place, but nonetheless may yield such an interpretation. Secondly, the same analysis cannot correctly predict the interpretation of VP-adverbials under AE. To illustrate this point using Japanese examples, consider (9a, b):

(9) a. Bill-wa   kuruma-o   teineini   aratta.

       Bill-TOP   car-ACC   carefully   washed

       'Bill washed the car carefully.'

    b. John-wa   *e*   arawa-nakat-ta.

       John-TOP   wash-NEG-PAST

       '*Lit*. John didn't wash *e*.'   (Oku 1998: 171)

Oku (1998: 171) points out that in (9b), "it is hard to get the reading that John didn't wash the car carefully, which would imply that John did wash the car but not in a careful manner." The sentence instead has the reading that John did not wash the car at all. Note that, in English VP-ellipsis contexts such as the one shown in (10b), the interpretation where the VP-adverb is included within the ellipsis site (i.e., John didn't wash the car carefully) is easily available and, in fact, the most prominent interpretation. This pattern is accounted for in a straightforward fashion from the fact that the adverb *carefully* is part of the VP before the VP constituent undergoes ellipsis in the manner shown in (10c).

(10) a. Bill washed the car carefully, but …

    b. John didn't.

    c. John didn't wash [VP [VP ~~wash the car~~] ~~carefully~~].   (Oku 1998: 172)

Oku notes that, given the assumption that the Japanese adverb *teineini* 'carefully' is also within the VP, the V-Stranding VPE analysis would erroneously predict that the sentence in (9b) should allow the reading where the adverb is included in the VP-ellipsis site (i.e., John washed the car but not in a careful manner), just like (10b) does.

A similar argument against the V-Stranding VPE analysis can be made in Chinese on the basis of examples like (11).

(11) Wo   jian-guo ta   san-ci;   tamen   ye   jian-guo *e*. Tamen   zhi   jian-guo

      I   see-ASP him   three-times they   also see-ASP   they   only see-ASP

      yi-ci.

      one-time

      'I have seen him three times, they have seen (him), too. They only saw (him) once.'

                                                                (Aoun and Li 2008: 253)

The first clause in (11) contains the VP-level frequency adverb *san-ci* 'three times'. Aoun and Li (2008: 254) observe that the missing element in the second elliptical clause does not have the reading where this adjunct is contained within the VP-ellipsis site (i.e., they have seen him three times). The absence of such a reading is confirmed by the fact that adding the third clause (i.e., "they only saw (him) once"), as shown in (11), does not result in contradiction. The absence of this reading, thus, remains unexplained under the V-Stranding VPE analysis.

We have seen thus far that the availability of the sloppy interpretation for a null argument (either a subject or a direct object) is due to the process of AE, which we take to be best analyzed as an instance of LF-Copy, following Oku's (1998) theory. We have also briefly reviewed some compelling evidence showing that the V-Stranding VPE analysis

cannot derive the full range of possible and impossible interpretations available under AE in Japanese and/or Chinese. Table 1 summarizes the results of our brief survey of AE patterns in Japanese vis-à-vis Chinese.

	Japanese		Chinese	
	Subject	Object	Subject	Object
Strict Reading?	+	+	+	+
Sloppy Reading?	+	+	−	+
AE available?	+	+	−	+

Table 1: The Distribution of Strict/Sloppy Readings and AE in Japanese and Chinese

The central issue I would like to address in this paper is why Chinese exhibits the subject-object asymmetry with respect to AE, unlike in Japanese, which transparently allows this option regarding of grammatical functions of the null argument. In the following section, I review the Anti-Agreement Hypothesis originally proposed by Saito (2007) and extensively developed by Şener and Takahashi (2010) and Takahashi (2010, 2013a, b) in their comparative study of AE in Japanese, Turkish, Chinese and Malayalam. This hypothesis says that the otherwise free application of the LF-Copy process in an AE language is blocked by the presence of ϕ-agreement hosted by two functional heads − Ts and v's. Takahashi (2010, 2013a), in particular, proposes that the subject-object asymmetry in Chinese AE is captured IF this language actually has ϕ-agreement associated with the grammatical subject, a position independently argued for by Miyagawa (2010, 2013) on the basis of his treatment of the so-called blocking effect on the long-distance anaphor *ziji* 'self' in Chinese. However, Miyagawa's idea that Chinese has subject ϕ-agreement has already been shown to be clearly

problematic by Huang and Tang (1991), Xue et al. (1994), and Huang and Liu (2001), indicating that Takahashi's theory of Chinese AE is seriously undermined, as we will see in section 3. In section 4, I propose instead that the Chinese AE pattern is rooted in its well-known discourse restriction on preverbal elements – *the Definite Subject Restriction* (Chao 1968; Li and Thompson 1976, 1981; Tsao 1977; Huang 1987; Cheng and Sybesma 1999, 2005) – which says that preverbal elements tend strongly to be interpreted as definite in reference. This property itself is a derivative from the typological character of Chinese as a topic-prominent language in the sense of Li and Thompson (1976, 1981). I further conjecture in the same section that ϕ-agreement in rich agreement languages like Spanish and Italian (Taraldsen 1979; Chomsky 1981) and definiteness in topic-prominent languages like Chinese in fact play essentially the same computational role in the syntactic derivation in that they both serve to reconstruct the content of the missing subject in [Spec, T] as definite in reference and hence anchored to ongoing discourse considerations.

3.   The Anti-Agreement Hypothesis on AE in Chinese and Its Empirical Problems

Adopting Oku's (1998) LF-Copy Theory of AE, Saito (2007) develops a new hypothesis regarding AE within Chomsky's (2000) framework which effectively restricts the application of AE to grammatical arguments which do not enter into ϕ-agreement with T or *v*. I henceforth call this hypothesis the *Anti-Agreement Hypothesis*, following Takahashi (2010). To illustrate how this hypothesis plays out in blocking AE, consider the derivational sequence of syntactic operations shown in (12), where F is a functional head (either T or *v*).

(12)   a. $\ldots F_{1\,\{\phi\}}\ldots$ $\boxed{DP_{1\,\{\phi,\,\text{Case}\}}}$ $\ldots$

     b. $\ldots F_{2\,\{\phi\}}\ldots$ _____ $\ldots$

     c.   * $\ldots F_{2\,\{\phi\}}\ldots DP_{1\,\{\phi,\,\text{Case}\}}\ldots$

Chomsky (2000) maintains that the uninterpretable ϕ-features of a functional head/Probe Agree with the matching interpretable ϕ-features of the closest DP/Goal in its search domain and subsequently get removed from the narrow syntax. Chomsky further suggests that Agree is implemented by the uninterpretable Case feature of the Goal, which is also removed as a reflex of Agree – this condition is known as *the Activation Condition*. This Agree relation is illustrated in (12a). Now suppose that after this relation is established, DP_1 in (12a) is copied at LF onto the elliptic argument position (either a null subject or null object), as shown in (12b). Recall that the uninterpretable Case feature of DP_1 has already been checked and erased in (12a) before it undergoes LF-Copy and hence cannot enter into any more Agree relation with any other Probe. Consequently, the uninterpretable ϕ-features of F_2 remain unchecked, causing the syntactic computation to crash, as shown in (12c). This way, the Anti-Agreement Hypothesis effectively rules out the AE option for arguments which participate into a ϕ-Agree relation with T or *v*.

Şener and Takahashi (2010) argue that this hypothesis provides an illuminating account for the comparative difference between Turkish and Japanese with respect to AE. They observe that Turkish allows sloppy readings for null objects, but not for null subjects. This subject-object asymmetry in Turkish, they suggest, falls out from the fact that only (finite) Ts in Turkish are associated with active ϕ-agreement. On the other hand, it is traditionally assumed since Fukui (1986, 1988, 1995) and Kuroda (1988) that Japanese lacks a ϕ-agreement system altogether. This property thus makes AE an available option for both null subjects and null objects alike in this language.

3.1. *Takahashi's (2010, 2013a) Agreement-Based Analysis of AE in Chinese*

Takahashi (2010, 2013a) extends the Anti-Agreement Hypothesis reviewed above further to the subject-object asymmetry in Chinese AE as well. In doing so, Takahashi crucially adopts Miyagawa's (2010, 2013) claim that Chinese in facts evinces ϕ-agreement with the

grammatical subject in [Spec, T], despite the lack of its overt morphological manifestations, and proposes that the asymmetry in question receives the same account as that in Turkish.

Miyagawa's argument for the existence of subject ϕ-agreement in Chinese comes from the so-called *blocking effect* on the reflexive anaphor *ziji* 'self' (Y.-H. Huang 1984; Tang 1985, 1989). This effect is manifested in (13−14).

(13) **Zhangsan$_i$** zhidao [**Lisi$_j$** dui **ziji$_{i/j}$** mei xinxin].

Zhangsan know   Lisi to   self NEG confidence

'*Lit*. Zhangsan$_i$ knows that Lisi$_j$ has no confidence in self$_{i/j}$.'   (Miyagawa 2010: 49)

(14) **Zhangsan$_i$** juede [{**wo$_i$/ni$_j$**}   dui **ziji$_{*i/j}$**   mei xinxin].

Zhangsan think I/you   to   self   NEG confidence

'*Lit*. Zhangsan$_i$ feels that {I$_i$/you$_j$} have no confidence in self$_{*i/j}$.' (Miyagawa 2010: 50)

The example in (13) illustrates that the reflexive anaphor *ziji* 'self' can be bound to the matrix subject *Zhangsan* across the more local potential antecedent in the embedded subject position *Lisi*. When the local potential antecedent is replaced by a first- or second-person subject, however, the anaphor can no longer take the matrix subject as its antecedent and can only be construed as bound to the local subject. This observation is illustrated in (14). The contrast between the two examples, thus, shows that the otherwise available long-distance construal of the reflexive anaphor is blocked when the person feature of the higher potential antecedent subject does not match the person feature of the lower potential antecedent subject. Assuming the LF-movement analysis of subject-oriented anaphors in Chinese (see Battistella 1989, Cole, Hermon and Sung 1990 and Huang and Tang 1991), Miyagawa (2010) suggests that *ziji* first raises to its local T to receive the person value of the T, which in turn receives

this value from its specifier subject via Spec-Head Agreement. He further suggests that the reflexive subsequently moves further to the higher T for the long-distance construal, which obtains if the person feature value obtained in the higher T matches the person value obtained in the lower T. This particular treatment of the blocking effect in terms of movement presupposes that Chinese evidences person feature agreement with T, and subjects, by extension. Note that the blocking effect is absent in Japanese, as shown in (15−16).

(15) **Taroo$_i$-wa [Hanako$_j$-ga zibun$_{i/j}$-no**   syasin-o   totta-to]   omotteiru.

Taro-TOP   Hanako-NOM self-GEN   picture-ACC   took-C   think

'*Lit*. Taro$_i$ thinks that Hanako$_j$ took self's$_{i/j}$ picture.'   (cf. Miyagawa 2010: 50)

(16) **Taroo$_i$-wa [{watasi$_j$/anata$_j$}-ga   zibun$_{i/j}$-no**   syasin-o   totta-to]   omotteiru.

Taro-TOP   I/you-NOM   self-GEN   picture-ACC   took-C   think

'*Lit*. Taro$_i$ thinks that {I$_j$/you$_j$} took self's$_{i/j}$ picture.'   (cf. Miyagawa 2010: 50)

The example in (15) shows that the long-distance anaphor *jibun* 'self' can take either the local subject (i.e., *Hanako*) or the matrix subject (i.e., *Taro*) as its possible antecedent. The example in (16) shows that the anaphor can retain the long-distance construal option even when the person feature of the embedded local subject (i.e., *watasi* 'I' and *anata* 'you') does not match the person feature of the matrix subject (i.e., *Taro*).

To the extent that Miyagawa's (2010) theory of ϕ-agreement holds, Takahashi's (2010, 2013a) agreement-based theory allows for a straightforward explanation of the comparative difference between Chinese/Turkish and Japanese with respect to AE. On one hand, Japanese allows AE for both null subjects and null objects because neither type of elements enters into ϕ-Agreement relation with any functional head due to the lack of the agreement system

altogether. On the other hand, Chinese/Turkish allow AE for null objects, but not for null subjects, because the reconstruction of the null subject through LF-Copy is blocked by the active, albeit invisible, φ-agreement borne by T.

3.2. *Empirical and Conceptual Problems with Takahashi's Anti-Agreement Theory*

It is clear from our discussion in section 3.1 that Takahashi's analysis of the Chinese AE crucially depends on the presence of subject φ-agreement in this language. It is important to point out at this point that, to the best of my knowledge, the blocking effect we reviewed above is the only empirical argument Miyagawa (2010) presented to support the idea of active subject φ-agreement in Chinese. More importantly for our purposes, the previous literature on *ziji*, including Huang and Tang (1991), Xue et al. (1994), and Huang and Liu (2001), already contain compelling empirical arguments against the LF-movement analysis of the reflexive, which Miyagawa adopted to support his theoretical position in the first place. Here, I repeat just two of the central arguments against the movement analysis of *ziji* presented in the literature; see Huang and Liu (2001: 145–147), Tang (1989), Huang and Tang (1991), Xu (1993) and Pan (1997) for several other arguments against the same analysis.

Firstly, (17a) shows that *ziji* 'self' can take the matrix subject *Zhangsan* as its antecedent even though it is contained within the Complex NP Island. This reading should be blocked under the LF-movement analysis of the long-distance construal of the anaphor adopted by Miyagawa because the head-movement of the reflexive should result in the violation of independently well-known locality principles such as island constraints.

(17) **Zhangsan$_i$** bu   xihuan [$_{NP}$ [$_{CP}$ neixie   piping   **ziji$_i$**   de]   ren].

Zhangsan NEG like   those   criticize self MOD   person

'*Lit*. Zhangsan$_i$ does not like those people who criticize self$_i$.'

(Huang and Tang 1991: 271)

A similar problem is illustrated by (18), which shows that the anaphor can take the matrix subject from within the Adjunct Island.

(18) **Zhangsan$_i$** shuo [$_{CP}$ ruguo Lisi piping **ziji$_i$**], ta   jiu   bu   qu.

Zhangsan say   if   Lisi criticize self he   then NEG go

'*Lit*. Zhangsan $_i$ said that if Lisi criticized self $_i$, then he won't go.'

(Huang and Tang 1991: 271)

Note that the island effects are active in the LF component in Chinese for operator movement and head movement alike, as shown in (19) and (20), respectively.

(19) a. * [$_{CP}$ Suiran Lisi **weishenme**   mei   lai,   ni   haishi bu   shengqi?

though Lisi why   NEG   come   you   still   NEG angry

'*Though Lisi didn't come why, you weren't angry?'

b. * Ni   zui   zihuan [$_{NP}$ [$_{CP}$ ta   **weishenme**   mai   de]   shu]?

you   most like   he   why   buy   MOD   book

'*You like the book that he bought why?'

(Huang and Tang 1991: 271)

(20) a. * [_CP Ruguo ta **lai-bu-lai**], ni jiu hui shengqi?

         if he come-NEG-come you then will angry

         '*If he comes or not, then you will be angry?'

    b. * Ni zui xihuan [_NP [_CP ta **mai-bu-mai** de] shu]?

        you most like he buy-NEG-buy MOD book

        '*You like the books that he will buy or will not buy?'

                                (Huang and Tang 1991: 271)

The examples in (19a, b) are both ungrammatical because the interrogative operator undergoes LF movement over the Complex NP island or the Adjunct Island, respectively. The examples in (20a, b) are similarly ungrammatical because the movement of the A-not-A element, which is hypothesized to be located under T (Huang 1982), exhibits the island effects.

    Secondly, Xue et al. (1994) (see also Huang and Liu 2001: 145) observe that the blocking effect can be triggered by non-subject arguments, such as direct and oblique objects, which would not count as potential antecedents for *ziji* under the LF-movement analysis; see also Huang and Tang (1991: 269–270) for a similar observation based on the blocking of the long-distance reading induced by local experiencer non-subject arguments. This observation is illustrated in (21–24).

(21) Zhangsan$_i$ gaosu **wo$_j$** Lisi$_k$ hen **ziji$_{*i/*j/k}$**.

    Zhangsan tell me Lisi hate self

    '*Lit*. Zhangsan$_i$ told me$_j$ Lisi$_k$ hated self$_{*i/*j/k}$.'   (Xue et al. 1994: 436)

(22) Wo$_i$ zhidao Zhangsan$_j$ gaosu **ni$_k$** Lisi$_l$ hen **ziji$_{*i/*j/*k/l}$**.

I know Zhangsan tell you Lisi hate self

'Lit. I$_i$ know Zhangsan$_j$ told you$_k$ Lisi$_l$ hates self$_{*i/*j/*k/l}$.'

<div align="right">(Xue et al. 1994: 437)</div>

(23) Zhangsan$_i$ **dui wo$_j$** shuo Lisi$_k$ chang piping **ziji$_{*i/*j/k}$**.

Zhangsan to me say Lisi often criticize self

'*Lit*. Zhangsan$_i$ said to me$_j$ that Lisi often criticized self$_{*i/*j/k}$.'

<div align="right">(Xue et al. 1994: 437)</div>

(24) Zhangsan$_i$ **cong ni$_j$** nar tingshuo Lisi$_k$ chang piping **ziji$_{*i/*j/k}$**.

Zhangsan from you there hearsay Lisi often criticize self

'*Lit*. Zhangsan$_i$ heard from you$_j$ that Lisi$_k$ often criticized self$_{*i/*j/k}$.'

<div align="right">(Xue et al. 1994: 437)</div>

In (21) and (22), the blocking effect is triggered by a direct object, whether it is a first-person argument or a second-person argument. Similarly, in (23) and (24), the relevant effect is also triggered by a non-third-person oblique object of the matrix verbs. Xue et al.'s (1994) observation here would be completely mysterious under the LF head-movement analysis of *ziji*, according to which non-subject arguments would not count as a potential antecedent of *ziji* and hence should not be able to participate into person agreement relation with T in the first place.

In addition to the empirical problems with the view that Chinese possesses abstract subject ϕ-agreement, Takahashi's Anti-Agreement approach to the subject-object asymmetry in Chinese AE is also faced with a non-trivial conceptual problem from the viewpoint of

learnability (see Takahashi (2010, 2013a) for some discussion on this point). Essentially, the problem is how speakers of Chinese will get to know that subject agreement is active in Chinese despite the lack of its overt morphophonological manifestations so that AE is unavailable to the empty subject position. Recall that the only empirical argument available thus far in the literature for Miyagawa's agreement theory is based on the blocking effect, but we have already seen that this argument does not stand through under closer scrutiny. Furthermore, even if the relevant effect could, in principle, be explained in some way or another by the presence of subject agreement in Chinese along the lines of LF-movement, it is very difficult, if not completely impossible, to imagine that speakers acquiring this language will receive sufficient exposure to such complex data involving the long-distance construal blocked by intervening subjects which do not agree in number with the matrix subject to figure out the relevance of subject agreement in question. For this reason, it would be conceptually more desirable if the children could rely on visible linguistic cues other than the abstract agreement to arrive at the conclusion that subject ellipsis is blocked in Chinese. As we will see in section 4, my proposed alternative to Takahashi's Anti-Agreement theory overcomes this conceptual problem. I will propose that the subject ellipsis is blocked by the discourse-linked definiteness effect on subject positions, a pattern which Chinese-learning children can easily detect solely on the basis of the surface position of nominal expressions alone (i.e., pre-verbal vs. post-verbal). This alternative hypothesis is also in compliance with the Uniformity Principle (Chomsky 2001: 2), which dictates that cross-linguistic variation be "restricted to easily detectable properties of utterances".

4.   φ-Agreement and Definiteness: Two Variations on the Same Theme

In this section, I propose a new analysis for the restrictions on Chinese AE discussed in the previous sections from its well-known definiteness constraint on preverbal elements, a

discourse property derived from its topic-prominent character (Li and Thompson 1976, 1981). I situate this analysis within the recent C-to-T Feature Inheritance Model of Phase Theory (Chomsky 2007, 2008; Richards 2007).

4.1. *Agreement-Based Languages vs. Topic-Prominent Languages*

Li and Thompson (1976, 1981) propose that languages can be characterized as subject-prominent languages or topic-prominent languages on the basis of a cluster of morphosyntactic properties they exhibit. Whereas a subject-prominent language such as English has the sentence structure built upon structural notions of subject and predicate, a topic-prominent language such as Chinese highlights the distinction between topic and comment independently of the syntactic order of subject, verb and object. The idea that Chinese is a topic-prominent language in this sense is supported by the observation, illustrated in (25), that the discourse topic is located at the beginning of the sentence without assuming any structural role such as subject or argument of the verb.

(25) **Nei-chang   huo** xingkui   xiaofang-dui   lai   de   kuai.

DEM-CL   fire fortunate   fire-brigade   come MOD quick

'*Lit*. That fire, fortunately the fire-brigade came quickly.'

(Li and Thompson 1976: 462)

It is well known that one of the typological corollaries of a topic-prominent language such as Chinese is the *Definiteness Subject Restriction* (Chao 1968; Li and Thompson 1976, 1981; Tsao 1977; Huang 1987; Cheng and Sybesma 1999, 2005), namely, that preverbal elements tend strongly to be interpreted as definite. This restriction is illustrated in (26a, b).
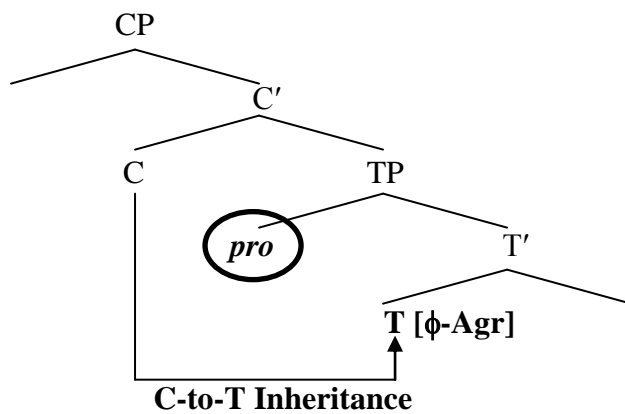
(26) a. **Ren** lai le. (^{OK} definite; * indefinite)

        person come PERF

        'The person(s) has/have come.'

    b. You **ren** lai le. ([*] definite; ^{OK} indefinite)

        exist person come PERF

        'A person/persons has/have come.'

    c. Zhangsan shuo [**ren** lai le]. (^{OK} definite; * indefinite)

        Zhangsan say person come PERF

        'Zhangsan said that the person(s) has/have come.'

    d. Zhangsan shuo [you **ren** lai le]. ([*] definite; ^{OK} indefinite)

        Zhangsan say exist person come PERF

        'Zhangsan said that a person/persons has/have come.'

<div align="right">((26a) from Li and Thompson 1981: 20)</div>

Li and Thompson (1981: 20) note that the sentence in (26a) "can best be interpreted as '[t]he person(s) whom you and I are expecting has/have come.' Yip (1995: 87) suggests that "if no other element is topicalized in a main clause, a subject is topicalized in a 'vacuous' sentence invisible on the surface". Accordingly, a subject which is topicalized, albeit in a string-vacuous fashion, obeys the definiteness effect in Chinese. To express the indefinite reading for the subject argument in Chinese, on the other hand, the existential marker *you* has to be used to introduce the argument in the post-verbal position, as illustrated in (26b). The examples in (26c, d) show that the definite subject restriction also holds true for the subject in the subordinate clause.
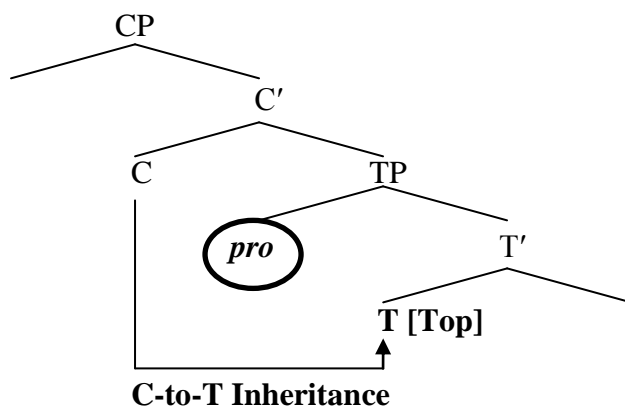
Given this well-known semantic restriction on preverbal subjects, let us now hypothesize that the [Top] feature in a topic-prominent language licenses the occurrence of

pro in [Spec, T], just like rich ɸ-agreement in agreement-prominent languages such as Italian licenses the occurrence of the *pro* in the same structural position (Taraldsen 1979; Chomsky 1981). In other words, let us propose that ɸ-agreement and the [Topic] feature are two different manifestations on the single theme which nonetheless play essentially the same computational role of licensing the missing element in [Spec, T] as definite DP. This hypothesis is schematically represented in (27−28).

(27) Rich Agreement Languages (e.g., Italian)

```
              CP
             /  \
                 C′
                /  \
              C      TP
              |     /  \
           (pro)      T′
              |      /  \
              |  T [ɸ-Agr]
              |     ↑
        C-to-T Inheritance
```

(28) Topic Prominent Languages (e.g., Chinese)

```
              CP
             /  \
                 C′
                /  \
              C      TP
              |    /  \
           (pro)     T′
              |     /  \
              | T [Top]
              |     ↑
       C-to-T Inheritance
```

My current hypothesis adopts Chomsky's (2007, 2008) (see also Richards 2007 and Miyagawa 2010, 2013) proposal that T is lexically defective in that it bears no inherent ɸ-

features on its own, but instead inherits them from the phase head C once the latter is introduced into the syntactic workspace. Adapting this inheritance model to the present context, I propose in this paper that both φ-features and the Topic features are inherited from C to T, as shown in (27) and (28), respectively. In (27), the rich φ-features of the T allow the reconstruction of the φ-features of its subject in [Spec, T] and successfully identifie it as *pro*. In the same vein, in (28), the definiteness requirement on the missing subject in [Spec, T], triggered by the C-to-T inheritance of the [Top] feature, requires that the subject be *pro*.

Takahashi (2010, 2013a) independently suggests that the absence of subject AE in Chinese could be explained by resorting to the specificity/definiteness effect imposed on subjects in this language, but rejects this possibility on the basis of Turkish AE. Takahashi points out that in Turkish, the accusative direct objects can undergo AE to yield sloppy readings even though accusative DPs are interpreted as specific (see Şener and Takahashi 2010 for relevant examples). I agree with Takahashi in that the relevant inhibitory factor on the application of AE in Turkish is the presence of subject φ-agreement. As I have suggested above, however, my proposed analysis differs from Takahashi's in that it suggests that AE is blocked by *either* φ-agreement *or* the definite subject restriction (imposed by the [Top] feature of the T) depending on languages, which are ultimately argued to be nothing but two different surface manifestations of the abstract T-subject agreement within the syntax.

4.2. *Deriving the Subject-Object Asymmetry in Chinese AE*

Our current hypothesis revised in section 4.1 provides an illuminating account of the subject-object asymmetry in Chinese AE. Recall that the topic feature under T requires that the missing subject in [Spec, T] be topic and hence definite in reference. This, in turn, means that the reference of the subject must be naturally identifiable and manifest to both the hearer and speaker on the basis of their ongoing discourse information, a pattern which perfectly

matches Li and Thompson's characterization of the definite subject constraint mentioned above in connection to the example in (26).

Let us now consider how our current system blocks the sloppy reading for the null subject in Chinese, using the schematic derivation shown in (29a, b) as an illustration.

(29) a.   Before LF Copy   b.   After LF Copy
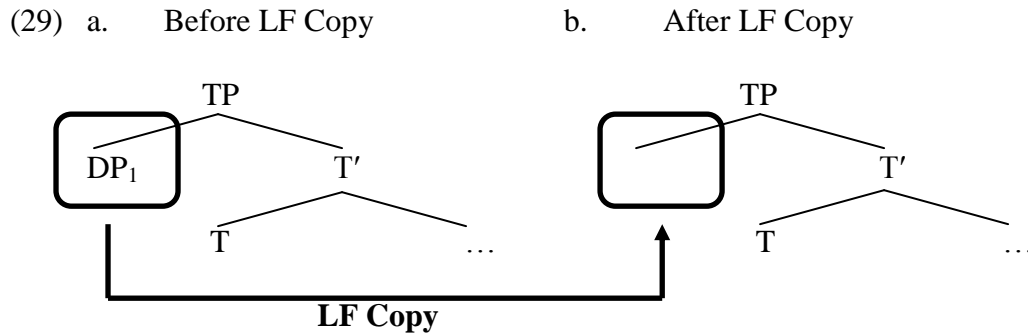
In this derivation, DP$_1$ is merged in [Spec, T], as shown in (29a). This DP, then, is copied onto the empty subject position in [Spec, T] in the subsequent elliptical clause, as shown in (29b), where the T head inherits the Topic feature from the phase head C (not shown there). Recall again that a topic is a definite DP by definition and hence cannot introduce a new discourse referent which is not identifiable to the speaker and hearer alike on the basis of ongoing discourse. In other words, the referential identity of DP$_1$ must be one which is easily recoverable at the time this when DP undergoes LF-Copy into the empty subject position, or otherwise the output of the copying procedure would be incompatible with the discourse requirement imposed on the position by the [Top] feature borne by T. Restricting ourselves to the context where the null subject is anaphoric to the corresponding overt subject, this derivation yields the consequence that the empty subject in (29b) must refer back to whatever DP$_1$ refers to in (29a). Consequently, the sloppy interpretation is blocked for the null subject position in Chinese. The strict reading for the null subject position, on the other hand, is

correctly predicted to be available under our analysis because the definite semantics of *pro* precisely meets the semantic restriction imposed on the subject position in this language.

Note in this connection that the definite subject constraint is not operative in Japanese. Thus, the bare subject noun *gakusei* 'student' in (30) can be interpreted as either definite or indefinite depending on discourse contexts, unlike in Chinese.

(30)   Gakusei-ga   kita-yo.   (^{OK} definite; ^{OK} indefinite)

        student-NOM   came-PRT

        '{A student/The student} has come.'

The lack of such a semantic restriction is precisely what we need to account for the availability of the sloppy reading in the null subject position in Japanese. This reading is derived when the LF Copy copies an overt subject from a full-fledged clause onto the corresponding empty slot in the subsequent elliptical clause. The strict reading is derived, on the other hand, when the *pro* is introduced directly in the same position without invoking the copying procedure at LF. Our analysis thus far is summarized in Table 2, with crucial reference to the inhibitory constraint on the sloppy interpretation of the null subject position.

	Japanese		Chinese	
	Subject	Object	Subject	Object
Argument Ellipsis?	+	+	−	+
φ-Agreement?	−	−	−	−
Definite Subject?	−	−	+	−

Table 2: AE in Japanese and Chinese: Definiteness or φ-Agreement?

26

A question arises at this point regarding our current analysis of Japanese AE. Li and Thompson (1976) mention Japanese as one of the prototypical topic-prominent languages on a par with Chinese. Then, the question is why Japanese does not exhibit the definiteness subject constraint, like Chinese. Although an-in-depth investigation of this parametric difference is left for another occasion, I outline here one possible answer − the presence of the overt topic marker −*wa* in Japanese and the lack thereof in Chinese. Even though both languages are typologically classified as topic-prominent languages, the way they indicate the topichood of a linguistic expression is drastically different − whereas Chinese exclusively uses syntactic information (i.e., the preverbal position) to signal definiteness of (often bare) NPs, Japanese may utilize the morphological marker (i.e., −*wa*) for the same semantic purpose. This characterization is supported by the example in (31), which is minimally different from the example in (30), in that the nominative marker −*ga* attached to the bare nominal *gakusei* 'student' in the latter is now replaced by the topic marker −*wa*.

(31)   Gakusei-wa   kita-yo.   ([OK] definite; [*] indefinite)

       student-TOP   came-PRT

       '{*A student/The student} has come.'

Indeed, the topic-marked noun *gakusei-wa* 'student-TOP' in (31) must be interpreted as definite.

4.3.   *Cross-Linguistic Typology of AE and Its Uniformity of Variation*

Our current hypothesis suggests that there are (at least) two independent inhibitory factors that control the free application of this process − ϕ-agreement, as active in Turkish (Şener and Takahashi 2010) and the definite preverbal subject constraint, as active in Chinese. The typological picture that emerges from this hypothesis is shown in Table 3. In this table, I have

indicated several other AE languages which have been shown in the previous literature to exhibit a particular mixture of grammatical characteristics relevant to this table: see Takahashi (2007) for Korean, Takahashi (2013b) for Malayalam and Sato (in press) for Javanese.

Subject Agreement Parameter		Argument Ellipsis for Null Subject	
Definiteness	ϕ-Agreement	Sloppy Reading	Languages
−	−	+	Japanese/Korean
+	−	−	Chinese/Javanese
−	+	−	Turkish/Malayalam
+	+	+	
+	+	−	
−	−	−	
−	+	+	
+	−	+	

Table 3: Cross-Linguistic Typology of AE

Our hypothesis, therefore, makes an explicit typological prediction that if any AE language exhibits *either* the definite subject restriction *or* any sign of active syntactic ϕ-agreement, the language should not allow the sloppy reading for the null subject position. The first three rows show that this prediction holds true. The possibilities indicated on the fourth and fifth rows, namely, that a single language exhibits both the subject ϕ-agreement and the definite subject restriction, but allows/disallows sloppy interpretations for the empty subject, seems to be independently excluded, given our central viewpoint that ϕ-agreement and topic-prominence are underlying two surface variations on the same theme (i.e., the C-to-T

inheritance) across languages. The existence of any natural language which manifests neither ϕ-agreement nor definite subject and does not allow the sloppy interpretation for an empty subject position − the possibility indicated by the sixth row − may be excluded on the same architectural ground from the perspective of C-to-T inheritance. Granted that such a language without any sign of ϕ-agreement or topic prominence for subjects exists for some reason, it may well simply indicate that our understanding of the possible range of restrictions on AE is still rather limited and requires investigation of other possible inhibitory conditions on the LF-reconstruction procedure by further explorations of many other languages known to have AE.

Given these considerations, the real empirical challenge for our hypothesis should come from the existence of any natural language which manifests either ϕ-agreement or definiteness for the subject position, just as in Turkish (a subject ϕ-agreement language) or Chinese (a definite subject language), but nonetheless permits sloppy interpretations, as in Japanese − the possibilities indicated by the seventh and eighth rows of Table 3. To the best of my knowledge, however, I have yet not found any single language with this particular mixture of properties, indicating that our non-parametric uniformity approach to the AE phenomenon is on the right track.

5.   Conclusions

In this paper, I have investigated the curious comparative difference between Chinese and Japanese with respect to the availability of AE. After showing the inadequacy of the Anti-Agreement Analysis currently pursued in the literature, I have argued that the subject-object asymmetry in Chinese AE receives a principled explanation from the well-known definite restriction imposed on pre-verbal positions, which I have derived from the C-to-T inheritance of the [Top] feature along the lines of the recent suggestion made within Phase Theory. One important conceptual consequence of the proposed analysis is that ϕ-features and the [Top]

features are in fact two sides of the same coin; they are nothing but two different surface manifestations of the underlying computational mechanism of abstract agreement in that they both serve to identity the missing subject in [Spec, T] as the definite expression or *pro*. The proposed analysis has also been shown to correctly predict the cross-linguistic variation and uniformity exhibited by a wide variety of AE languages, including not only Japanese and Chinese, but also Korean, Turkish, Javanese, Turkish and Malayalam.

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