

- b. José sabe [_{CP} que Maria *(lo) ha visto]
 José know that Maria he has seen
 ‘José knows that Maria has seen *(him).’

While subjects in Spanish may appear in null pronominal forms, objects in Spanish cannot. This omission of pronouns has sometimes been attributed to the rich agreement paradigm in Spanish (and Italian), the so-called Recoverability Condition. In other words, since there is a rich subject agreement paradigm in Spanish or Italian, subjects may appear in zero forms and their contents can still be recovered and identified from the agreement. On the other hand, since there is no object agreement in Spanish or Italian, such null pronominal form cannot appear in object positions, since their contents cannot be recovered, violating the Recoverability Condition.

It has long been observed (cf. Huang (1984)) that the licensing of null arguments cannot be solely tied to the presence of rich agreement paradigm. Mandarin Chinese (MC), for example, does not have agreement (at all), and, yet, it allows even freer omission of its arguments, including objects, as shown in (3) – (5).

- (3) Zhangsan kanjian Lisi le ma? (Huang 1984: 533, (7))
 Zhangsan see Lisi LE Q
 ‘Did Zhangsan see Lisi?’

- (4) a. Ta kanjian ta le. b. *e* kanjian ta le
 He see him LE [He] saw him.
 ‘He saw him.’
 c. ta kanjian *e* le d. *e* kanjian *e* le
 ‘He saw [him]’ [He] saw [him]’

- (5) a. Zhangsan xihuan Lisi₁, danshi Mali bu xihuan *e*₁.
 Zhangsan like Lisi but Mary not like
 ‘Zhangsan likes Lisi₁, but Mary does not like *e*₁’
 b. Zhangsan₁ xihuan Lisi, danshi *e*₁ bu xihuan Mali.
 Zhangsan like Lisi but not like Mary
 ‘Zhangsan₁ likes Lisi, but *e*₁ does not like Mary.’

The question to be asked is “what is the best/correct characterization of null arguments in MC?” In the literature there have been many analyses on the omission of objects in MC, such as Huang’s (1984) topic-variable analysis and Huang’s (1988, 1991) VP-ellipsis-in-disguise analysis. In this paper, I am not arguing against these analyses. Rather, I am arguing that there exists some null arguments constructions that cannot be readily handled by previous analysis. I claim that these constructions

are easily captured under the assumption that Argument Ellipsis (AE) is also attested in MC.

The organization of the paper is as follows. In section 2, I review two previous analyses of null arguments in MC, including Huang's (1984) topic-variable analysis and Huang's (1988, 1991) VP ellipsis analysis. In section 3, I examine some of the arguments that have been proposed in the literature for the existence of AE in Japanese and Korean. In section 4, I claim that some of these arguments can be directly applied to MC. Moreover, there exists some constructions specific in MC that can only be captured under the AE analysis. This thus shows that, in addition to Japanese, Korean and Turkish, AE is also an independently attested operation in MC. In section 5, I discuss some of the theoretical consequences of the existence of AE in MC. And section 6 concludes the whole paper.

2. Previous Analysis of Null Arguments in MC

As shown above in (4) and (5), MC allows both subjects and objects to be null, but what is the nature of these null arguments? In the literature, there have been at least 2 analyses, the topic-variable analysis and the VP-ellipsis (in disguise) analysis. I will summarize the basic idea of these 2 approaches below.

2.1 The topic variable analysis

Huang (1984) argues that null objects in MC are not null pronominals (*pro*), building the arguments based on the referential possibilities for null arguments in Chinese. Huang (1984) contends that null subjects in MC could in principle be empty referential pronouns, which do not have to be bound, but null objects cannot be. Rather, in Huang's analysis, null objects in MC can only be variables (bound by a potentially empty topic operator). Consider the sentences in (6) and (7) below.

- (6) a. Zhangsan₁ shuo [*e*_{1/2} bu renshi Lisi]
 Zhangsan say not know Lisi
 'Zhangsan said that [he] did not know Lisi.'
 b. Zhangsan₁ shuo [Lisi bu renshi *e**_{1/2}]
 Zhangsan say Lisi not know
 'Zhangsan said that Lisi does not know [him].'

- (7) a. John₁ said that he_{1/2} didn't know Bill.
 b. John₁ said that Bill didn't know him_{1/2}.

In (6a) and (7a), null subjects in MC and their overt counterparts in English behave similarly in that they can either be co-indexed with the matrix subject or someone salient in the discourse. On the other hand, Huang (1984) notices that null objects in

MC in (6b) do not have the same behavior as overt pronouns in English in (7b). Object pronouns in English can be co-indexed either with the matrix subject or someone salient in the discourse, but null objects in MC can only be co-indexed with someone salient in the discourse, not with the matrix subject, as shown in (6b).

The asymmetry between null subjects and null objects in MC led Huang to conclude that empty pronoun is an option only for null subjects in MC, but not an option for null objects. In other words, null objects in MC are not empty pronominals. If empty pronoun is an option for null objects, there should be no reason why this empty pronoun could not refer to the matrix subject¹. Huang (1984) suggests that null objects in MC are variables bound to a (potentially empty) topic. The representation of (6b) will thus look like the one in (8).

(8) Topic ... Zhangsan say [Lisi not know e]

Note that if the null arguments are bound to a topic, this topic cannot be co-referential with the matrix subject, since that will be a case of ‘strong crossover’ violation (cf. Postal (1971)), as shown in (9) and (10). Therefore, the null arguments in (9) and (10) cannot be co-referential with the matrix subject, even indirectly through the null topic. This thus further strengthens the claim that null objects in MC cannot be co-referential with the matrix subject.

- (9) a. *John₁, he₁ said t₁ saw Bill.
 b. *John₁, he₁ said Bill saw t₁ .

- (10) a. *Zhangsan₁, ta₁ shuo t₁ kanjian-le Lisi.
 Z.S. he say see-asp Lisi
 ‘Zhangsan, he said that [he] saw Lisi.’
 b. *Zhangsan₁, ta₁ shuo Lisi kanjian-le t₁
 Z.S. he say Lisi see-asp
 ‘Zhangsan, he said that Lisi saw [him].’

2.1 The VP ellipsis analysis

Huang (1988, 1991) further noted that null objects in MC have one interesting property that cannot be readily handled by the topic-variable analysis. He notes that

¹ Huang’s (1984) theory is based on two important assumptions of his: (a) Disjoint Reference (DJR) = Binding Principle B and (b) Generalized Control Rule (GCR), as in (i).

(i) a. **Disjoint Reference**: a pronoun must be free in its governing category.

b. **Generalized Control Rule**: co-index an empty pronominal with the closest nominal element.

For space reasons, I will not go into the details of his analysis. The interested readers are referred to Huang (1984) for the specifics of his analysis.

null object in Chinese often occur in a situation where, for a language like English, one would find a VP gap, as shown in (11)-(12) below

(11) Zhangsan kanjian-le ziji-de mama. Lisi ye kanjian-le e
 Zhangsan see-asp self-gen mother Lisi also see-asp
 ‘Zhangsan saw his mother. Lisi did, too.’ (OKstrict, OKsloppy)

(12) John saw his mother, and Bill did [_{VP} e], too. (OKstrict, OKsloppy)

Note that (11) and (12) have both the strict reading (*John saw John’s mother and Bill also saw John’s mother*) and the sloppy reading (*John saw John’s mother and Bill also saw Bill’s mother*). While the topic variable analysis may capture the strict reading, it cannot readily handle the sloppy interpretation. Huang (1988, 1991) thus proposed that (11) also involves VP-ellipsis. Under his analysis, the verb in (11) is moving to some abstract INFL to lexicalize the INFL, followed by deletion of the VP, as shown in (13).

(13) Zhangsan kanjian-le ziji-de mama.
 Lisi ye kanjian-le_V+INFL [_{VP}+_V-ziji-de mama-]

Huang’s (1988, 1991) theory nicely captures two facts: (A) the MC example in (11) patterns alike with the English example in (12) in allowing both the strict and the sloppy reading since both involve VP ellipsis now. (B) (11) and (12) have different interpretation from (14) and (15), which have overt pronouns². The difference in interpretation between (11) and (14) (and also between (12) and (15)) is one of the motivations for the claim that the null arguments in (11) is not an empty pronominal

(14) Zhangsan xihuan ziji-de mama. Lisi ye xihuna ta (OKstrict, Xsloppy)
 Zhangsan like self-gen mother Lisi also like she
 ‘Zhangsan likes his mother. Lisi also likes her.’

(15) John likes his mother. Bill likes **her**, too. (OKstrict, Xsloppy)

The analyses reviewed above are the two dominant approaches to null objects in MC. In the next section, I will argue that, just like Japanese and Korean, there also exists a special type of operation called Argument Ellipsis (AE) in MC, in which arguments, but not adjuncts, are simply deleted in the PF component. This will put MC together on the same table as Japanese, Korean, and Turkish in that they all allow AE.

² Otani and Whitman (1991), following Huang (1988, 1991), assumes that the VP ellipsis (in disguise) analysis is also responsible for the null arguments paradigm in Japanese.

3. Argument Ellipsis in Japanese and Korean

The operation of Argument Ellipsis (AE) has been argued to be independently available in Japanese (Oku (1998), Saito (2007), Takahashi (2007, 2008), among others), Korean (Kim (1999)), and Turkish (Şener and Takahashi. (2009)). In this section, I will review some of the arguments that have been used as arguments for the existence of AE in Japanese and Korean.

It has been observed that Japanese and Korean pattern alike with MC in that they also freely allow the omission of arguments in the absence of agreement paradigms, a phenomenon which has been termed Radical Pro-Drop in the literature. Some examples are given in (16) – (18) below³.

(16) a. Taroo-wa doo simasita ka?

Taroo-top how did Q
‘What happened to Taroo?’

b. *e* ie-ni kaerimasita
he home-to returned
‘[He] returned home.’

c. Sensei-ga *e* sikarimasita.
teacher-nom him scolded
‘The teacher scolded [him].’

(17) Taroo-ga Hanako-ni [_{CP} *e e* kekkonsuru to] yakusokusita

Taroo-nom Hanako-dat he her marry that promised
‘Taroo promised Hanako that [he] would marry [her].’

(18) a. Chelswu-eykey mwusun il-i iss-ess-ni?

Chelswu-dat what happen be-past-Q
‘What happened to Chelswu?’

b. Ani, *e* cip-ey kasse, kunyang c. *e* sensayngnim-hanthey honnasse.
No, home-loc went, just teacher-dat be-scolded
‘No, [he] just went home.’ ‘[He] is scolded by the teacher.’

Again, just like the null argument paradigm in MC, the question to be asked is “what is the best characterization of the null arguments paradigm in Japanese and Korean?” It has been proposed in the literature that the operation of Argument Ellipsis (AE), which is different from VP ellipsis, should exist independently. I will summarize some (but not all) of the arguments in the literature below.

The first argument of AE comes from the whole-part construction in Korean, as illustrated in the example in (19) below.

³ The Japanese examples in (16) and (17) are taken from Takahashi (2008), and the Korean example in (18) is from Jungmin Kang (personal communication).

- (19) a. Jerry-nun [_{NP} caki-uy ai]-lul phal-ul ttayli-ess-ta
 Jerry-top self-gen child-acc arm-acc hit-past-indicative
 ‘Jerry his his child on the arm.’
- b. Kulena Sally-nun [_{NP} e] tali-lul ttayli-ess-ta
 but Sarlly-top leg-acc hit-past-indicative
 ‘lit. But Sally hit *e* on the leg.’ (OK_{strict}, OK_{sloppy})
- c. Kulena Sally-nun tali₁-lul [_{NP} e] t₁ ttayli-ess-ta
 but Sarlly-top leg-acc hit-past-indicative
- d. *Kulena Sally-nun tali-lul [caki-uy ai-lul] ttayli-ess-ta
 but Sarlly-top leg-acc self-gen son-acc hit-past-indicative
 ‘But Sally hit her son on the leg.’

As shown in (19a,b), the sloppy interpretation is available. It is not clear how the VP ellipsis analysis can just elide some small part of VP and leave other parts unaffected, under the assumption that VP ellipsis should apply to the whole VP. One potential derivation is to move the part (*leg*) to a position outside of VP and higher than the whole (self’s child), as depicted in the structure in (19c). (19c) can thus be the structure to feed VP ellipsis, giving rise to the desired interpretation. However, (19d) shows that this movement is impossible, and the part (*leg*) must be c-commanded by the whole (self’s child), as in (19a). The availability of the sloppy reading in (19b) and the impossibility of the structure in (19d) thus poses a challenge to the VP ellipsis analysis. Of course, under the AE analysis, the possibility of (19b) is directly captured, since the argument is simply deleted in the PF component⁴.

The second argument comes from antecedents that are clearly outside VP. The relevant example is given in (20) and (21) below.

- (20) a. Mike-ka [caki-uy ai]-lul ttayli-ess-ta (Kim (1999), p.265)
 Mike-nom self-gen child-acc hit-past-indicative
 ‘Mike hit his child.’
- b. Kuleca Jeanne-to ttohan [_{NP} e] ttayli-ess-ta
 then Jeanne-also too hit-past-indicative
 ‘And then, Jeanne hit her (Jeanne’s) child, too.’ (sloppy interpretation)
 ‘And then, Jeanne hit his (Mike’s) child, too.’ (strict interpretation)
 ‘And then, Jeanne hit Mike, too.’ (discourse interpretation)

- (21) Mike hit his son, and Jeanne did [_{VP} e], too.
 ≠ Mike hit his son, and Jeanne hit Mike, too.

⁴ Here I am assuming the PF deletion approach to AE for expository reasons. The debate between the LF copying and the PF deletion approach is beyond the scope of this paper, so I will abstract away from discussing the differences between the two approaches.

- (25) a. Zen-in-ga sono tesuto-o uke-nakat-ta
 All-CL-nom that test-acc take-neg-past
 ‘All did not take that test.’ (^{OK}all>negation, ^Xnegation>all)
- b. Taroo-ga zen-in-o home-nakat-ta
 Taroo-nom all-CL-acc praise-neg-past
 ‘Taroo did not praise all.’ (^Xall>negation, ^{OK}negation>all)

As shown in (25a), the subject is outside of VP and higher than negation. Therefore, the only reading available is the all > negation reading. On the other hand, the object in (25b) is still within VP (at least lower than negation), so it only has the negation > all reading. The reading in (25a) plus the paradigm in (24) poses a potential challenge to the VP ellipsis analysis for null arguments. It is not clear how the VP ellipsis analysis may capture the null subject and the sloppy reading in (24b). Of course, under the AE analysis, (24b) is straightforwardly captured.

It should be noted that the arguments presented in this section are not intended to show that Argument Ellipsis is the only way to derive null arguments. In fact, it has been shown in many literatures (cf. Saito (1985)) that null arguments in Japanese can be a null pronominal. The arguments are presented to show that the operation of AE is independently motivated (in addition to other elliptic construction and null elements) in Japanese and Korean.

4. Argument Ellipsis in Mandarin Chinese

In this section, I will argue that, just like Japanese and Korean, MC also has AE as an operation independent from other elliptic constructions. The arguments will be based on two parts: (1) MC has constructions that display some similar behavior as those in Japanese and Korean (2) MC has constructions that cannot be readily accounted for under other elliptic constructions. To the extent that this is successful, it will provide evidence that AE is also present in MC.

4.1 Similar behavior with Japanese and Korean

While not all the arguments discussed in section 3 may be applied to MC, some of them can. These include, among others, discourse antecedents and the exclusion of adjuncts. Consider the example in (26) below.

- (26) a. Zhangsan da-le [_{NP} ziji-de xiaohai] zhidao...
 Z.S. hit-asp self-gen child after
 ‘After Zhangsan hit his child...’
- b. Lisi haishi bu-gan da [_{NP} e]
 Lisi still not-dare hit
 ‘Lisi still does not dare to hit his (Zhangsan’s) child.’ (strict reading)

- ‘Lisi still does not dare to hit his (Lisi’s) child.’ (sloppy reading)
 ‘Lisi still does not dare to hit Zhangsan.’ (discourse reading)⁵

The example in (26) patterns alike with the Korean example in (20) in that, in addition to the strict and the sloppy reading, it can take the subject in the first clause as the antecedent and has the third reading “Lisi still does not dare to hit Zhangsan.” This discourse reading, as discussed above, is not compatible with VP ellipsis.

The second similarity between MC and Japanese/Korean involves exclusion of adjuncts, as shown in (27) below.

- (27) a. Zhangsan henkuaide chi-wan-le fan.
 Z.S. quickly eat-finish-asp rice
 ‘Zhangsan finished the rice quickly.’
 b. Lisi ye chi-wan-le [NP e]
 Lisi also eat-finish-asp
 ‘lit. Lisi also finished [e] = rice’
 ≠ ‘Lisi also finished the rice quickly.’

As indicated in the reading, (27b), which involves the null argument, does not include the adjuncts in interpretation. This is similar to the Japanese example in (22) above. The two examples of same behavior with Japanese and Korean thus add supporting evidence that AE is also available in MC.

4.2 Additional Evidence from Mandarin Chinese

In addition to the similar behavior with Japanese and Korean, MC also has some other constructions to show that the operation of AE is indeed available in MC. These include post-verbal duration/frequency phrases as well as double object/dative constructions, as shown in (28).

4.2.1 Post-verbal duration/frequency phrases

⁵ While this reading is possible, it is not as salient as the strict and the sloppy interpretation. However, some background information or pragmatic factors can be added to make this reading stronger, as in (i) and (ii).

(i) [Zhangsan has always been really mean to his kids and Lisi really hates that. Lisi wanted to hit Zhangsan to show his anger. The more he saw how mean Zhangsan is to his kids, the more he wanted to hit Zhangsan. However, he does not dare to do that because Zhangsan is big and strong.]

(ii) a. Zhangsan da-le ziji-de haizi zhidao = (26)

 Z.S. hit-asp self-gen child after
 ‘After Zhangsan hit his child...’

 b. Lisi haishi bu gan da [NP e]

 Lisi still not dare hit
 ‘lit. Lisi still does not dare to hit [e]=Zhangsan.’

With (i) as background information, it is much easier to get the third reading in (iib).

In addition to canonical objects, MC allows duration and frequency phrases (DFP) to appear post-verbally, as shown in (28).

- (28) a. Zhangsan da-le ziji-de xiaohai san-ci
 Zhangsan hit-asp self-gen child three-time
 ‘Zhangsan hit his child three times.’
 b. Lisi zeshi da-le e liang-ci
 Lisi whereas hit-asp two-time
 ‘Where as Lisi hit *e* two times.’ (OKstrict, OKsloppy)

As indicated, (28) also allows the sloppy reading. Since the DFP is post-verbal, it is not clear how VP ellipsis can only elide the internal argument and leave the DFP intact. One possibility, of course, is to assume that the DFP is in fact right-adjoined to some higher projection higher than the VP, probably right-adjoined to vP. Therefore, verb-raising followed by VP ellipsis will only affect the internal argument but not the DFP, as shown in the structure in (29).

- (29) Lisi zeshi [_{VP} da_{v+V}-le [_{VP} ~~t_v~~ ziji-de xiaohai] liang-ci]

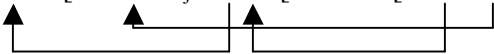

However, Soh (1998) has argued that the DFP is indeed inside VP, thus excluding the possibility of the structure in (29). The relevant examples are given in (30) below, modified from Soh (1998, pp. 36-40).

- (30) a. Zhangsan qing-guo mei-ge xuesheng liang-ci
 Zhangsan invite-asp every-cl student 2-time
 ‘Zhangsan invited every student twice.’ *every>2, 2>every*
 b. Zhangsan qing-guo liang-ci mei-ge xuesheng
 Zhangsan invite-asp 2-time every-cl student
 ‘Zhangsan invited every student twice.’ **every>2, 2>every*

Soh (1998) observes that there is a contrast in (48a,b) with respect to the possible scope interpretations. When the object precedes the DFP, as in (30a), both scope readings (*2>every*, *every>2*) are possible. However, when the DFP precedes the direct object, only the surface scope (*2>every*) is available.

Along the lines of Aoun and Li’s (1993) Scope Principle, Soh (1998) proposes that the ambiguity of (30a) comes from the movement of *mei-ge xuesheng* ‘every student’ from a lower position to some higher position c-commanding the DFP, as shown in the structure in (31a). The ambiguity is thus derived. The direct object c-commands DFP and DFP also c-commands the trace of the direct object. (30a) is therefore predicted to be ambiguous by the Scope Principle. (30b), on the other hand, does not involve movement of the object, as shown in the structure in (31b). The DFP always

c-commands the direct object, which will only give rise to the 2>every reading. Therefore, only the surface scope is available.

- (31) a. $[_{VP} DP_{subject} v_{V+F+v} [_{FP} DP_{1-object} t_{V+F} [_{VP} DFP [_{VP} t_V t_1]]]]]$

- b. $[_{VP} DP_{subject} v_{V+F+v} [_{FP} t_{V+F} [_{VP} DFP [_{VP} t_V DP_{object}]]]]$


If Soh (1998) is correct, then this shows that the DFP is indeed inside the VP (cf. the structure in (31a)). By assumption VP ellipsis should elide the whole VP, including DFP. The availability of the sloppy reading in (28b) will be a mystery for the VP ellipsis analysis of null arguments. This thus adds supporting evidence that the operation of AE is independently available in MC. Under AE, (28b) is derived simply by eliding the internal argument (the object).

4.2.2 Double object/dative constructions

The second piece of additional evidence for the existence of AE in MC comes from double object and dative constructions, as shown in (32) and (33) below.

- (32) a. Zhangsan song ziji-de xiaohai Mali-de zhaopian
 Zhangsan send self-gen child Mary-gen picture
 ‘Zhangsan sent his child Mary’s picture.’
 b. Lisi zeshi song *e* Xiaomei-de zhaopian⁶ (OK_{strict}, OK_{sloppy})
 Lisi whereas send *e* Xiaomei-gen picture
 ‘lit. Whereas Lisi sent *e* Xiaomei’s picture.’
- (33) a. Zhangsan song ziji-de zhaopian gei Mali
 Zhangsan send self-gen picture to Mary
 ‘Zhangsan sent his picture to Mary.’
 b. Lisi zeshi song *e* gei Xiaomei (OK_{strict}, OK_{sloppy}⁷)
 Lisi whereas send to Xiaomei
 ‘lit. Whereas Lisi sent *e* to Xiaomei’

⁶ The presence of *zeshi* ‘whereas’ is intended to create a contrast between (32a,b) and make the sentence sound more natural. This is consistent with Merchant’s (2001) claim that the existence of focus and contrast is crucial for elliptic structures.

⁷ The sloppy reading is more prominent. For pragmatic reasons, it is odd to send other people’s picture to another person (the strict reading). But if the context is carefully constructed, both readings are available.

In both (32) and (33), since both arguments are VP-internal, it is not clear how the VP ellipsis analysis can capture the sloppy interpretation in (32) and (33). This is because VP ellipsis should target the whole VP and affect both arguments. One possibility, of course, is to assume that the lower argument has moved out of VP prior to VP ellipsis. This is shown in the structure in (34).

- (34) a. [_{TP} Lisi zeshi [_{VP} song_{v+V} [_{VP} ~~t_v ziji de xiaohai t_j~~] [_{Xiaomei-de zhaopian}]_j]]
 Lisi whereas send self-gen child Xiaomei-gen picture
 b. [_{TP} Lisi zeshi [_{VP} song_{v+V} [_{VP} ~~t_v ziji de zhaopian t_j~~] [_{gei Xiaomei}]_j]]
 Lisi whereas send self-gen picture to Xiaomei

Under this possibility, VP ellipsis is still possible to derive (32b) and (33). Therefore, to rule out the possibility of VP ellipsis, we should construct sentences in which movement of the second argument out of VP is prohibited, as in the structure in (35) below, in which XP is immobile due to some other independent reasons.

- (35) a. Subject1 V1 Object1 XP1
 b. Subject2 V2 [e] XP2

One potential candidate is secondary predicates (SP). Following Kayne (1985) and Huang (1982, 1988), I assume that the relevant examples of SPs in English and Chinese have the structure as in (36), in which the small clause is generated inside the VP. The relevant examples are given in (37) and (38). As shown from the ungrammaticality of (37b) and (38b), SPs cannot be moved.

- (36) subject [_{VP} verb [_{SC} NP SP]]

- (37) a. John hammered the metal flat.
 b. *Flat, John hammered the metal.

- (38) a. Zhangsan da-de ziji-de xiaohai bi-qing-lian-zhong
 Zhangsan hit-DE self-gen child nose-green-face-swollen
 ‘Zhangsan hit his child (to the degree that he is) wounded.’

- b. *[Bi-qing-lian-zhong]₁, Zhangsan da-de ziji-de xiaohai t₁
 nose-green-face-swollen Zhangsan hit-DE self-gen child
 ‘lit. Wounded, Zhangsan hit his child.’

- c. Lisi zeshi da-de e wawadajiao (^{OK}strict, ^{OK}sloppy)
 Lisi whereas hit-DE screaming
 ‘lit. Whereas Lisi hit e screaming.’

The existence of sloppy interpretation in (38b) and the property of SP thus serve as evidence against the VP ellipsis analysis of null arguments. For the VP ellipsis analysis to work, the secondary predicates must move out of VP prior to VP ellipsis. However, we have known that secondary predicates cannot be moved, as shown independently from (37b) and (38b). On the other hand, under the AE analysis, the availability of sloppy interpretation is expected, since the argument in (38c) is simply deleted.

In this section, I have given some arguments above to show that the operation of AE is independently attested in MC. Therefore, AE is an available operation in MC, just like Japanese and Korean.

5. Theoretical Implications

Having given arguments for the independent existence of AE in MC (just like in Japanese, Korean and Turkish), I will discuss some of the theoretical implications in this section.

The existence of AE in Japanese and Korean is a relatively new theoretical advancement and is limited to these two languages (and possibly Turkish (cf. Şener and Takahashi (2009))). The three languages Japanese, Korean, and Turkish have many properties in common, which might lead one to suspect whether the existence of AE is linked to one of these properties. Specifically, Japanese, Korean, and Turkish all (A) have (Japanese style) scrambling, (B) have SOV order, and (C) belong to the Altaic language family. It is natural to assume that one of these properties might be the driving force for the existence of AE.

Therefore, the claim that MC also has AE will have direct theoretical implication on the above claim since MC does not have scrambling, does not have SOV order, and does not belong to the Altaic family, either. If AE exists in MC, then the three properties shared by Japanese, Korean, and Turkish cannot be the determining factor for the availability of AE. The comparison of the four languages is given in the table in (39) below.

(39)

	Japanese	Korean	Turkish	Chinese (MC)
claimed/argued to have AE	√	√	√	√
The existence of scrambling	√	√	√	×
SOV order	√	√	√	×
Belong to the Altaic Family	√	√	√	×

In fact, Oku (1998) argues that the operation of AE is tied to the availability of (Japanese-type) scrambling, a two-way correlation depicted in (40) below. The evidence provided in this paper thus argues against such correlation, because MC has AE but does not have Japanese-style scrambling. (40b) thus does not hold⁸.

- (40) a. If a language L has (Japanese-style) scrambling \rightarrow L has AE.
 b. If a language L has AE \rightarrow L has (Japanese-style) scrambling.

The existence of AE in MC thus sheds lights on the theory of AE, which cannot be tied to (A) scrambling, (B) SOV order, or (C) being a member in the Altaic family. Of course, the theory of AE is definitely beyond the scope of this paper. The interested readers are referred to Cheng (in progress) for discussions on the theory of AE, in which the theory of AE is tied to the notion of phase.

6. Conclusion

In this paper, I have argued for the following claims.

- (A) There are constructions of null arguments in MC that cannot be readily accounted for under the topic-variable analysis or the VP ellipsis analysis.
- (B) MC shares some similar behavior with Japanese and Korean in which the relevant null argument constructions may be best characterized as Argument Ellipsis (AE).
- (C) AE is also an independently available operation in MC, drawing evidence from post-verbal duration/frequency phrases and double object/dative constructions.

The existence of AE in MC thus argues against Oku's (1998) scrambling theory of AE and shed some lights on the proper characterization of AE.

7. References

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⁸ It is easy to tell that MC does not have Japanese style scrambling. For one thing, overt movement in MC always has semantics effect, unlike Japanese style scrambling, which is claimed to be semantically vacuous (cf. Saito (1985)). For another thing, it is possible to scramble a wh-element out of the scope of its licensor (e.g. an interrogative C). This option is not possible in MC. For space reasons, I will skip the discussions on the absence of scrambling in MC. The interested readers are referred to Cheng (in progress) for other related discussions.

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