Defining the Affectedness Condition
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1. Introduction

In this paper, we examine the nature of the Affectedness Condition which has been the topic of discussion (such as Anderson 1979, Tenny 1987, and Pesetsky 1990). In English, syntactic phenomena of the middle formation as in (1) and nominal passivization as in (2) are commonly known to be subject to this condition.

(1) a. This door opens easily. (cf. X opens this door.)
   b. This cinch tightens easily. (cf. X tightens this cinch.)
   c. *Flying fears easily. (cf. X fears flying.)
   d. *Cliffs this big avoid easily. (cf. X avoids cliffs this big.)

(2) a. Rome's destruction (cf. the destruction of Rome)
   b. the play's performance (cf. the performance of the play)
   c. *the play's enjoyment (cf. enjoyment of the play)
   d. *Mary's avoidance by John (cf. John's avoidance of Mary)

Roughly, NP-movement in these cases cannot extract [-affected] internal arguments to form middles and nominal passives.

Pesetsky 1990 characterizes Affectedness as a constraint applied to the cases that involve zero morphemes, or phonologically null elements. He argues that middle verbs and nominal passives have structure such as in (3).

(3) a. [ [ a \_\_ MIDDLE \_\_ ] ] \_\_ b. [ [ a N PASS N ] ]

In agreement with Baker, Johnson, and Roberts' 1989 analysis of the sentential passive, Pesetsky assumes that the zero morphemes, MIDDLE and PASS in (3a and b) are responsible for the absorption of the subject θ-role and case assigning ability to the internal argument.

On the other hand, Tenny 1987 characterizes Affectedness as delimitedness. The notion of delimitedness is summarized in (4).

(4) The sentence or event is delimited if it is understood to mean that there is some point in time after which the event is no longer continuing. (Tenny 1987, p. 17)

Thus, the possibility of syntactic operations such as middle formation and nominal passivization correlates with the delimitedness or non-delimitedness of the event.

In what follows, we examine Chinese and Japanese data which exhibit the Affectedness Effect. Then we argue that i) the Affectedness Effect is observed when [-affected] internal arguments are extracted by NP-movement even if an overt morpheme is involved and ii) the Affectedness Effect is observed when extraction of NP by NP-movement takes place in a non-tensed clause or when this NP-movement has an effect on the aspectual property of the clause. Our findings show that the
Affectedness Effect is not limited to cases with zero morphemes and that the English facts are representatives of two primary cases of the realization of the Affectedness Effect.

2. Chinese Data

In Mandarin Chinese, the Affectedness Effect is observed in three different constructions: the BEI construction as in (5), the BA construction as in (6), and QILAI construction as in (7).¹

(5) a. Wo sha-le Zhangsan.
   I kill-Asp               "I killed Zhangsan.'
   Zhangsan bei Lisi sha-le.
   BEI kill-Asp

(6) a. Wo sha-le Zhangsan.
   I kill-Asp               "I killed Zhangsan.'
   Wo ba Zhangsan sha-le.
   I BA kill-Asp

(7) a. Ta men mai zhe ben shu.
   he pl. sell this CL. book  'They sell this book.'
   Zhe ben shu mai qilai hen kuai.
   this CL. book sell QILAI very fast  'This book sells very fast.'
   With a verb with a [-affected] object, such as xihuan 'to enjoy', all of
   the constructions in (5)-(7) result in ungrammaticality as shown in (8)-(10)

(8) a. Women xihuan Zhangsan de xi.
   we enjoy Gen play  'We enjoyed Zhangsan's play.'
   *Zhangsan de xi bei women xihuan.
   Gen. play BEI we like  'Zhangsan's play was enjoyed by us.'

(9) a. Wo xihuan Zhangsan.
   I like  'I like Zhangsan.'
   *Wo ba Zhangsan xihuan.
   I BA like

(10) a. Zhangsan hen xihuan zhe ben shu.
    very like this CL. book  'Zhangsan likes this book very much.'
    *Zhe ben shu xihuan qilai hen rongyi.
    this CL. book like QILAI very easy
    '*This book enjoys easily.'

In this section, by examining the binding facts and the cases in which Partitive Case assignment is involved in the BA construction, we argue that all three constructions involve NP movement. Then, we argue that the Affectedness Condition must be obeyed whenever NP-movement is applied in Chinese.
First, consider the sentences in (11).

(11) a. Zhangsan j [qi ma] qi de Pro j hen lei.2
     ride horse ride COMP very tired
     'Zhangsan rides the horse and (as a result) he is tired.'

b. Zhangsan ba maj qi de Pro j hen lei.
     BA horse ride COMP very tired
     'Zhangsan rides the horse and (as a result) the horse is tired.'

Huang 1989 examines the pair in (11), and proposes a non-movement analysis of the BA construction using the theory of Generalized Control. He assumes that the bracketed [qi ma] 'ride the horse' in (11a) is an adjunct and that maj in (11b) is base-generated in the preverbal Spec of VP. Note that the subject Zhangsan is the only possible controller of Pro in (11a), whereas in (11b), the object ma 'the horse' in the Spec of VP is the closest possible controller. According to Huang, this is how the resultative clause in (11a) and in (11b) are interpreted as indicated by the English gloss.

However, there are cases where Huang's assumption that the preverbal NP is base-generated in situ is untenable such as in (12).

     beat beat COMP he can-not-stop
     'Zhangsan beat Lisi and Zhangsan couldn't stop it'

     beat beat COMP he nose-blue-face-bloated
     'Zhangsan beat Lisi and Lisi was all black and blue'

     beat beat COMP he watch-not-on particle
     'Zhangsan beat Lisi and some one else couldn't bear the scene'

d. Zhangsani da Lisik da de ziji/*/*/* hen lei.
     beat beat COMP self very tired
     'Zhangsan beat Lisi and got himself tired'

The overt subject ta 'he' in the resultative clause in (12a, b and c) can refer to either the subject Zhangsan or the object Lisi. Furthermore, it is even possible for this pronoun to refer to someone else. On the other hand, in (12d), the anaphor ziji 'self' is long-distance bound by the c-commanding subject and not by the object, as expected. These binding properties clearly indicate that the resultative clause has its own binding domain.

In (13), which is different from (12a) only in that the object Lisi is suppressed, the binding domain is obviously changed, as the pronoun ta 'he' can no longer refer to the matrix subject Zhangsan.

(13) *Zhangsan da de tai yu-ba-bu-neng.
     beat COMP he can-not-stop

This fact suggests that ta 'he' is in the binding domain of the matrix clause. Under Huang's account, which assumes the bracketed VP [da Lisi] 'beat Lisi' as an adjunct, the fact in (13) is unexpected because it is generally true
that the adjuncts are structurally irrelevant in determining/changing
binding domains as the English sentence in (14) shows.
(14) John hit himself/ˈɪʃ [when Bill came].
Then, a question arises as to the categorial status of [da Lisi] in (12a). In
this connection, the sentences in (11) contain Pro as the subject of the
resultative clause. Compare (11) with (15).
   ride horse ride COMP he very tired
   'Zhangsan rides the horse and (as a result) he is tired.'
   b. *Zhangsan ba mai qi de tai/ɪ hen lei.
   BA horse ride COMP he very tired
   'Zhangsan rides the horse and (as a result) the horse is tired.'
In (15), the pronoun ta 'he' occupies the subject position of the resultative
clause which Pro occupies in (11). What is crucial here is that while in
(15a), the sentence is grammatical even with the pronominal subject in the
resultative clause, the sentence in (15b) results in ungrammaticality when
the subject of the resultative clause is pronominal.3 Under Huang's
analysis, this fact requires another set of stipulations.
All of the above facts can be easily accounted for if we assume NP-
movement in the formation of the BA construction. Namely, under our
NP-movement analysis, the S-structure of the BA construction such as
(11b) looks like the one in (16).
(16) Zhangsan ba mai qi [de ti hen lei]
Moreover, the sentences in (17) can be accounted for in a principled
manner only under NP-movement analysis.
(17) a. Zhangsan chang de wo toutong.
   sing COMP I headache
   'Zhangsan sings (so bad) that I have a headache'
   b. Zhangsan ba wo chang de toutong.
   BA I sing COMP headache
   c. *Zhangsan chang wo chang de (wo) toutong.
   sing I sing COMP I headache
   d. *Zhangsan chang wo ba wo chang de toutong.
   sing I BA I sing COMP headache
Under Huang's Control analysis, wo 'I' in (17b) is base-generated in the
matrix clause. However, this NP wo 'I' is not an argument of the verb
chang 'sing' and this clearly violates the projection principle. Moreover,
following his account, it appears very difficult to rule out sentences such
as those in (17c) and (17d).
In our NP-movement analysis, the sentence in (17b) is derived from
the underlying (17a) via NP-movement. In addition, (17c) and (17d) are
ruled out as violation of the projection principle.
So far we have shown that a movement analysis of the BA construction can account for the contrast in (11) with respect to the interpretation of the subject of the resultative clause. Next, we argue that this movement is NP-movement.

Sung 1993 argues that the "Definiteness Effect" observed in Chinese constructions can be accounted for by adopting Belletti 1988's theory of Partitive Case into Chinese.\(^4\) Now, consider the French sentence in (18).

(18) Il a été tué trois hommes/*l'homme. (Belletti 1988)
'There is killed three men/*the man.'

The impersonal passive sentence in (18) shows that this construction is subject to the Definiteness Condition, i.e. only indefinite NPs can appear postverbally with a verb lacking structural accusative Case. Belletti \textit{op cit.} and Sportiche 1990 claim that inherent Partitive Case is assigned to the postverbal NP in this construction when the NP is indefinite. Hence, the definite NP cannot appear in the postverbal position in the impersonal passive construction because such an NP is not Case assigned.

As shown in (19), the Definiteness Effect is found in the BA and BEI constructions.

(19) a. Ta ba Zhangsan de fan chi le yiban/*ling yi ban.
    he BA Zhangsan Gen meal eat Asp half the other half.
    'He ate *(the) half of the Zhangsan's meal.'

b. Wo bei tou le yi ben/*na yi ben shu.
    I BEI steal Asp one CL that one CL book.
    'A/*The book of mine was stolen.'

First, let's assume that in the BA construction in (19a), the preverbal NP \textit{Zhangsan} is extracted from the complement position of the verb to the subject position as an instance of NP-movement. Following Baker, Johnson, and Roberts 1988, the structural Case of the verb is absorbed by this NP-movement. Thus, the only way by which the postverbal NP can receive Case is through assignment of the Partitive Case. Since the Partitive Case is assigned only to indefinite NPs, definite NPs are excluded from this position. Similarly, the Definiteness Effect in the BEI construction can be accounted for solely by the theory of Partitive Case.

We also assume that the QILAI or middle construction as in (7) is derived by NP-movement. In (20), the reflexive \textit{ziji} 'self' must be bound by the agent of verb \textit{zuo} 'to do'. Note that the Chinese reflexive \textit{ziji} refers to the subject NP. Hence, this shows that the surface subject of the sentence in (20a) is derived by NP-movement.

(20) Zhe zhong shi zuo qilai dui ziji mei haochu.
    this type thing do qilai for self no advantage.
    'Proi doing such a thing is not good for self.'

The sentences in (21) also indicate that the external argument of the verb must be present. In (21a), control of PRO must be the external argument
of the verb *fenshua* 'to paint'. In addition, in (21b), the agent-oriented adverb *chongman cuozhegan* 'full of frustration' requires the existence of the external argument.

(21) a. Zhe mian qiangbi fenshua qilai PRO yao tebie liuyi.
    this CL wall paint qilai PRO must especially careful
    'For a person x, the wall needs x to be especially careful when x
    paints it.'

b. Zhe men ke xiu qilai chongman cuozhegan.
    this CL course take qilai full=of frustration.
    'Taking this course makes one feel frustrated.'

Therefore, in Chinese, the Affectedness Effect is observed in constructions where NP-movement is applied. We will return to the theoretical significance of this fact after examining Japanese data.

3. Japanese Data

In Japanese, the Affectedness Effect is observed in the tough construction, desiderative construction and resultative intransitivization construction as shown in (22)-(24).

(22) a. Taroo-ga tomodati-no si-o kanasin-da.
    -nom. friend-gen. death-acc. sadden-past
    'Taro was saddened by his friends' death.'

    -dat.-top. friend-gen. death-nom. sadden-easy-pres.
    'For Taro, it is easy to be saddened by his friends' death.'

(23) a. Boku-wa Hanako-o ais-si-ta.
    I-top. -acc. love-do-past
    'I love Hanako.'

b. *Boku-wa Hanako-ga aisi-ta-i.
    I-top. -nom. love-want-pres.
    'I want to love Hanako.'

    -nom. bus-acc. wait-past
    'Ziro waited for a bus.'

b. *Basu-ga mat-te ar-u.
    bus-nom. wait-TE exist-pres.
    'A bus has been waited.'

These constructions apparently involve NP-movement. First, let's take the Japanese tough construction as an example. It has been argued by Kuroda 1987 that the nominative NP in the sentence in (25a) is base generated as an internal argument of the embedded verb as shown in (25b) and the (optional) application of NP movement moves this NP to the position where Nominative Case is assigned.

(25) a. Sei-no hikui hito-ni(-wa) kono mado-ga sime-
    height-gen. low person-dat.(-top.) this window-nom. close-
    niku-i (daroo).
    difficult-pres. (perhaps)
For a small person, (perhaps) this window is difficult to close.'

b. Sei-no hikui hito-ga kono mado-o ake-ru.
   height-gen. low person-nom. this window-acc. open-pres.
'A small person opens this window.'

Following Baker 1988 and Hasegawa 1988, we assume that NP movement in (25a) is triggered by verb movement which forms a complex predicate *sime-niku-i* 'is difficult to open' for Case theoretic reasons. To put it simply, as a result of movement of the embedded verb to form a complex predicate, the internal argument must move in order to receive Case. In the spirit of Burzio's generalization, the external argument of the embedded verb cannot receive structural Case; perhaps an inherent Case, namely dative is assigned by the complex predicate.

Note that this derivation is assumed to take place in syntax. In this regard, compare (25a) with (26).

(26) Sei-no hikui hito-ga kono mado-o ake-niku-i.
    height-gen. low person-nom. this window-acc. open-difficult-pres.
'Small people are not likely to open this window.'

The sentence in (26) contains a nominative external argument and an accusative internal argument of the embedded verb. In addition, this sentence differs semantically from (25a). While (25a) denotes the easiness/difficulty of the event, the sentence in (26) expresses tendency/likelihood of the event. We assume that the complex predicate in (26) is formed after the S-structure, perhaps at PF level. To illustrate schematically, S-structure of (25a) looks roughly like (27) and (28) represents the S-structure of (26)

(27) [sei-no hikui hito, kono mado, [ti ti tk] ake-niku-i]
(28) [[sei-no hikui hito kono mado ake] -niku-i]

Now, consider the sentences in (29) and (30).

(29) a. ?Taro-ni(-wa) kan-ga petyanko-ki tsusubi-yasu-i.
    -dat.(top.) can-nom. flat-adv. crush-easy-pres.
    'For Taro, it is cans that he can easily crush flat.'

b. ?Yoko-ri(-wa) hana-ga barabara-ki si-yasu-i.
    -dat.(top.) flower-nom. into=pieces-adv. do-easy-pres.
    'For Yoko, it is flowers that she can easily break into pieces.'

(30) a. Taro-o kan-o petyanko-ki tsusubi-yasu-i.
    Taro-nom. can-acc. flat-adv. crush-easy-pres.
    'Taro is likely to crush cans/the can flat.'

b. Yoko-o hana-o barabara-ki si-yasu-i.
    -nom. flower-acc. into=pieces-adv. do-easy-pres.
    'Yoko is likely to break flowers/the flower into pieces.'

The difference between (29) and (30) is that both the generic and specific reading is possible for the accusative bare NP in (30) whereas only the generic interpretation is possible for the nominative bare NP in (29).
Following Diesing 1990, we assume that existential closure has a scope over VP. Then, the fact that nominative bare NP allows only the generic reading can be accounted for by assuming that syntactic NP-movement is involved in (29): namely, by syntactic NP movement, this NP moves out of the scope of the existential closure. Meanwhile, the fact that the accusative bare NP allows both specific and generic readings in (30) is accounted for by assuming a post-syntactic NP-movement, and therefore the accusative NP remains in the scope of the existential closure at LF. In other words, being inside VP contributes to its specific interpretation.7

This appears to be common among constructions in which a nominative object is involved as shown in (31)-(32). Thus, the nominative objects in the desiderative sentences in (31a) and the resultative intransitivization construction in (32a) tend to be interpreted as generic whereas accusative objects are interpreted as either generic or specific.

   -(top. new car-nom. buy-want-pres. fact-be=pres.
   '(The fact is that) Yoko wants to buy any new car.'

   b. Yoko-wa atarasi kuruma-o kai-ta-i no-da.
   -(top. new car-acc. buy-want-pres. fact-be=pres.
   '(The fact is that) Yoko wants to buy a (specific) new car.'

   window-nom. open-TE exist-pres. 'Windows have been opened.'

   b. Mado-o ake-te ar-u.
   window-acc. open-TE exist-pres.
   'Windows have/The window has been opened.'

   Common to these constructions is that the aspectual properties of the predicates of these constructions are different from those of embedded verbs. The embedded verbs of sentences in (25), (29a), (31), and (32) are all eventive in that they are compatible with locative adjuncts and specific-time denoting adverbs indicate an onset of the event as shown in (33).

(33) a. Kono heyā-de gozi-ni mado-o ake-ru.
   this room-in five-o'clock window-acc. open-pres.
   'In this room, I will open this window at five o'clock.'

   b. Gozi-ni sono mise-de kuruma-o ka-ru.
   five-o'clock-in that shop-in car-acc. buy-pres.
   'I will buy a car at five o'clock in that shop.'

   c. Taroo-wa gozi-ni koko-de kan-o tubus-ru.
       -(top. five-o'clock-in this=place-in can-acc. crush-pres.
       'Taro will crush a can at five o'clock here.'

However, in the tough construction, desiderative construction and resultative intransitivization construction, locative adjuncts are incompatible as shown in (34).
(34)  a. *?Mado-ga kono heya-de ake-te-ar-u.
    window-nom. this room-in open-cont.-exist-pres.
    'The window has been opened in this room.'

    b. *?Nihon-zin-ni (wa) hasi-no hoo-ga
    Nihon-degohan-ga tabe-yasu-i.
    Japan-in meal-nom. eat-easy-pres.
    'For Japanese, it is easier in Japan to eat meals with chopsticks.'

    c. *Watasi-wa uti-de kuruma-ga kai-ta-i.
    I-top. home-in car-nom. buy-want-pres.
    'In my house, I want to buy a car.'

Furthermore, specific-time denoting adverbs do not indicate the time
when the state described by the predicate starts to hold true as shown in
(35). In these cases, the sentences are true even if the states described by
the predicates hold true prior to the time specified by the adverbs.
    window-nom. five=o'clock-at open-cont.-exist-pres.
    'The window will have been opened by five o'clock.'

    b. Taroo-ni-(wa) sonoyoona hon-ga gozi-ni
       -dat.(.-top.) such book-nom. five=o'clock-at
    yomi-yasu-i.
    read-easy-pres.
    'At five o'clock, such books are easy for Taro to read.'

    c. Boku-wa gozi-ni hon-ga kai-ta-i.
    'I want to buy books at five o'clock.'

Hence, for Japanese, it seems plausible to characterize the
Affectedness Effect as the effect observed in cases where the aspectual
properties of the predicates are changed by NP movement.

4. Defining the Affectedness Effect

To summarize so far, we have observed cases where the
Affectedness Effect holds in both Chinese and Japanese. We have argued
that in Chinese, cases where the surface forms are derived via NP-
movement are subject to this constraint, whereas in Japanese, the
Affectedness Effect is observed when NP-movement affects the aspectual
properties of the predicates.

Now, let's return once again to the English cases where the
Affectedness Effect is observed. In English, this effect is observed in
nominal passivization and middle formation. Now, the question is
whether English and Chinese/Japanese cases have anything in common.
One commonality among these constructions is the application of NP-
movement. As Pesetsky 1990 argues, both passive nominals and middle
constructions involve NP-movement. By examining sentences such as in (36), he argues that NP-movement is involved in nominal passives.

(36) a. The election of Clinton as president
    b. Clinton's election as president
    c. *the election as president

In (36), the as-phrase is predicated of the object. In the passive example in (36), this predication relation is preserved. Furthermore, since the possessive may not be deleted as (36c) shows, it is plausible to argue that the possessive NP is an argument. Therefore, the argument possessive NP in (36), which is predicated of the object, is assumed to be moved from the object position. He accounts for this fact by assuming that passive nominals contain a trace of object as in (37).

(37) Clinton's election as president

Details aside, a similar fact is observed in the middle, too, as (38) shows.

(38) a. Plastic tires wear flat easily.
    b. This envelope steams open easily.

The other commonality between English and Chinese/Japanese cases is found in Tense and Aspect properties among these constructions. Thus, while both passive nominals and Chinese cases do not contain Tense elements, English middle and Japanese constructions in question contain predicates whose aspectual properties are changed.

First, Chinese lacks tense and English nominal passive lacks tense since it is a nominal. Secondly, the middle construction illustrates the same aspectual properties that Japanese constructions in question do. As Parodi-Lewin 1991 points out, the English middle is incompatible with locative adjuncts, and specific-time denoting adverbs do not indicate the onset of the event described by the verb as shown in (39) and (40).

(39) a. *This door opens easily in this room.
    b. *Hot bread cuts easily here.

(40) a. This door opens easily at five o'clock.
    b. Hot bread cuts easily at five o'clock.

All of these facts suggest that Tenny's approach to the Affectedness Effect is on the right track, i.e. the Affectedness Effect is an aspectual property of the predicate. In addition, as is clear from Chinese and Japanese cases, the Affectedness Effect is found in cases where overt elements are involved, suggesting that Pesetsky's proposal is tenable only for English facts.

It is beyond the scope of our present study of the Affectedness Effect to discuss the reason why this effect emerges when NP-movement is applied to tense-less clauses and aspectual-changing operations. The real reason for this still remains obscure. But the conclusion of our study that Affectedness is relevant in NP-movement which is related to Tense and Aspect property of the predicates is clearly a step forward to the better understanding of the Affectedness Condition.
Notes

1. For analysis of QILAI construction as the Chinese equivalent of the middle construction, see Sung 1992.
2. The clause which is headed by the complementizer *de* is referred to as a resultative clause. Note that this clause must be immediately preceded by a verb. Hence, when the matrix clause contains a transitive verb, the verb is reduplicated to meet this surface condition due to the fact that Chinese has SVO order.
3. The sentence in (15b) is not ruled out because the pronoun *ta* 'he' cannot refer to an animal such as *ma* 'horse'. Even when the position of *ma* is replaced with a proper noun such as *Lisi* (a typical male name), this sentence is ungrammatical as shown in (i).
   
   (i) *Zhangsan*_1 ba *Lisi*_2 da *de* *ta*_3/4 *hen* tong.
   
   BA hit COMP he very hurt
   'Zhangsan hit Lisi and as a result it hurt someone.'
4. Zou 1992 argues that the Definiteness Effect in the BA construction can be accounted for by the Specified Subject Condition. However, according to his account the sentences such as (19a) and (19b) require an additional explanation.
5. For an argument against Kuroda's view, see Takezawa 1987, who argues that the Japanese tough construction is derived through null operator movement, a sort of wh-movement, along the line of Chomsky 1977.
6. The specific interpretation requires the following context: suppose there are several objects to crush, such as a vase, a glass, a coffee cup, and a can. In addition, the participants in crushing these objects know that Taro has an inclination to crush a can. Under such context, the accusative NP in (30a) is interpreted as specific. Similar context enables the specific interpretation for the accusative NP in (30b). However, such an interpretation is not available for the sentences in (29) unless a modal such as *yoodat-ta* 'it appeared' enables us to interpret the sentence as expressing a single event.
7. I assume that the generic interpretation, which is prominent in (30) is due to the fact that the NP in question is under the scope of the generic tense operator. For more discussion, see Ohta 1992.
8. The interpretation in question here is the one in which *uti-de* 'in my house' directly modifies *-tal(i) want*. Thus, this sentence is ungrammatical under the reading in which the speaker has a desire at home and that desire is buying a car. If this locative adjunct is interpreted as modifying only *kai* 'buy', then the sentence is grammatical.
References


