

A unified semantic analysis of Chinese adverbial *ziji*

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This study of Chinese adverbial *ziji* investigates why cross-linguistically adverbial intensifiers often develop two different uses, namely the exclusive use and the inclusive use. Arguing against the polysemous account proposed in previous works like Siemund (2000), and assuming the mechanism suggested in Liao (2018) for exclusive *ziji*, the paper presents a new analysis revised from Gast's (2006) account for intensifiers. In the analysis, there is only one *ziji* for all its adverbial uses. By adjoining to different X' positions in the structure, adverbial *ziji* may get different surface meanings. Despite the surface differences, adverbial *ziji* always has the following semantics: it works as an identity function, evokes alternatives for consideration, and receives an exclusive meaning after the application of the covert exhaustivity operator O. Based on the evidence presented, the analysis crucially assumes that adverbial *ziji* may adjoin to Topic', and this adjunction leads to the effect that the subsequent exhaustification is done over a set of alternative propositions that vary in topics. In such a case, alternative individuals evoked by *ziji* do not have to be excluded from having the property described by the VP in question. This makes the assertion of a *ziji*-sentence in inclusive context possible, and accounts for why intensifier *ziji* has a disguised inclusive function. By proposing such a unified account of *ziji*, the paper explains why cross-linguistically intensifiers often develop the various uses observed.

Keywords: intensifier, inclusive intensifier, exclusive intensifier, topic, additive particle

1. Introduction

English reflexive *x-self*, in addition to functioning as an argument (as in (1)), may work as an intensifier in an adjunct position to convey emphasis.

- (1) John likes himself.

Interestingly, this intensifier function can be subclassified into three different uses, namely the adnominal use, the adverbial exclusive use, and the adverbial inclusive use, exemplified in (2)–(4), respectively (cf. König 1991, 2001; König & Siemund 2000a, b; Siemund 2000; Gast 2006, among others).

- (2) The chair himself invited the guest. (Adnominal)
- (3) John painted the house himself. (Adverbial exclusive)
- (4) I know what it means to be poor because I have been poor myself.
(Adverbial inclusive)
(Siemund 2000: 4)

In the adnominal use, English *x-self* is adjacent to its associate NP and functions as a nominal modifier. In the adverbial uses, although it also associates with a NP, such as *John* in (3) or *I* in (4), this item has been argued to appear inside the VP (Siemund 2000). What differentiates (3) from (4) is the following: *himself* in (3) has an *alone*-like or an anti-assistance meaning, and so (3) expresses that John was the only agent in the house-painting event, without any help from other people; but *myself* in (4) has an *also*-like meaning, implying that someone other than the speaker “I” is also poor. It is intriguing that the two uses of adverbial intensifiers have developed, particularly when *alone*/anti-assistance is considered to have the opposite meaning of *also*. The former excludes other people from performing the event described, but the latter conveys that at least one other person has also performed the event denoted. This raises the question of why English adverbial *x-self* can express these two very different meanings.

What makes this meaning switch even more noteworthy is its universality: adverbial intensifiers switch their meanings in this way in many languages. For example, German intensifier *selbst* has an anti-assistance reading in (5a) so that its clause expresses that Hans did not do the homework by himself; but *selber*, a free variant of *selbst*,¹ has an inclusive meaning in (5b), emphasizing that Fritz is another person who did not do the homework.

- (5) a. *Fritz beschwert sich darüber, dass Hans seine Hausaufgaben nicht selbst gemacht hat.*
Fritz complains about.it that Hans his homework not self
made has
'Fritz complains that Hans hasn't done his homework himself.'

1. According to Gast (2006), *selber* in (5b) is used for euphony reasons, and it can be replaced by *selbst* without consequence of ungrammaticality.

- b. *Nun, Fritz hat selber seine Hausaufgaben nicht selbst gemacht.*
 well, Fritz has self his homework not self done
 ‘Well, Fritz has himself not done his homework himself.’ (Gast 2006: 66)

The two different meanings are also expressed by French intensifier *lui-même/elle-même*, with the exclusive use illustrated by (6) and the inclusive use exemplified by the sentence *je suis cheminot moi-même* ‘I am railway.man me-MÊME = I am a railway worker myself’ in (7).

- (6) *Il a construit lui-même sa maison.*
 He has built him-MEME his house
 ‘He built his house himself.’
- (7) *[L]’incident fret étant dû à un train d’ECR, les grèves de la SNCF n’y ont donc rien à y voir, malgré nos grèves, car je suis cheminot moi-même, nous restons les plus sécuritaires avec une réputation et un savoir faire reconnu [s] dans le monde entier.*
 ‘The freight incident was related to an ECR train, the SNCF strikes have thus nothing to do with it. I am a railway worker myself, notwithstanding our strikes, we have the best safety record with a world-class reputation and skills base.’
 ((6) and (7) from Waltereit 2016: 52–53)

Intriguingly, this similarity is not limited to Indo-European languages as it is also observed in Mandarin Chinese. The two meanings of Chinese adverbial intensifier *ziji* ‘self’ are exemplified by (8) and (9): (8) expresses an exclusive meaning that Zhangsan painted the wall without the help of others, and (9B) conveys that Zhangsan, in addition to Lisi, also has pens.

- (8) *Meiyou ren bang ta, Zhangsan ziji qi-le qiangbi.* (Adverbial exclusive)
 No man help he, Zhangsan ZIJI paint-PFV wall
 ‘No one helped him. Zhangsan painted the wall by himself.’
- (9) A: *Lisi you bi, ta keyi jie Zhangsan.*
 Lisi have pen, he can lend Zhangsan
 ‘Lisi has pens, and he can lend Zhangsan pens.’
 B: *Zhangsan ziji you bi.* (Adverbial inclusive)
 Zhangsan ZIJI have pen
 ‘Zhangsan himself has pens.’

What is particularly revealing is that, in Chinese, adverbial *ziji* in its inclusive use may co-occur with the additive particle *ye* ‘also’, illustrated in (10), in which

the last clause expresses an inclusive meaning that, in addition to Lisi, Zhangsan swam too.²

- (10) *Yuanben Zhangsan shuo bu you, dan kandao Lisi youyong hou, Zhangsan*
Originally Zhangsan say not swim, but saw Lisi swim after Zhangsan
(*henkuaidi*) *ziji ye you-le*.³
soon ZIJI also swim-PFV
'Originally Zhangsan didn't want to swim, but after he saw Lisi swimming,
(soon) he swam himself.'

In addition to (10), an internet search quickly reveals that many examples of this co-occurrence can be found in Chinese. Two examples slightly modified for simplicity reasons are presented below.

- (11) *Xiaohaizi kan daren da majiang, henkuaidi ziji ye xuehui-le.*
Children see adult play mahjong soon ZIJI also learn-PFV
'The children saw adults play mahjong. Soon they also learned how to play
mahjong themselves.'
- (12) *Changqi yu tamen weiwu, kongpa henkuaidi ziji ye*
Long.term with them be.together be.afraid soon ZIJI also
bian-huai-le.
become-bad-PFV
'Being with them for a long time, I'm afraid that soon I shall become a bad
person myself too.'

Significantly here, the co-occurrence of *ye* and inclusive *ziji* raises the following question: as *ye* clearly contributes an additive meaning to these examples, what exactly is the function of inclusive *ziji*? One plausible speculation is that *ziji* still keeps its semantic function of its exclusive use, particularly in view of the cross-linguistic fact that one item often possesses both the exclusive and inclusive uses. This paper aims to pursue such an analysis by studying Chinese adverbial intensifier *ziji*.

2. Observant Chinese readers may notice that *ye* is obligatory in (10). Moreover, sentences (11) and (12) also sound odd if without *ye*. The requirement of *ye* will be discussed later on in § 3.3, after an explicit account of the meaning shift of *ziji* is provided.

3. The adverb *henkuaidi* 'soon' is added in between the intensifier *ziji* and its associate. With the addition of this adverb, *ziji* must work as an adverbial intensifier, as adnominal modifiers like *benren* 'oneself' do not allow this adverb to appear in between, as illustrated in (i) below.

- (i) *Zhangsan henkuaidi (*benren) xie-le na feng xin.*
Zhangsan soon oneself write-PFV that CLF letter
Lit. 'Soon Zhangsan himself wrote that letter.'

Chinese data provide a good starting point to study the meaning switch of adverbial intensifiers because the evidence in other languages is not so clear in terms of the inclusive uses of intensifiers. Siemund (2000) claims that the co-occurrence of an inclusive intensifier and an additive particle is not allowed in English. He provides the sentences below to show that the presence of an additive particle is possible for the adnominal use (in (13a)) and the adverbial exclusive use (in (13b)), but not for the adverbial inclusive use (in (14)).

- (13) a. Bill himself also lit a cigarette.
 b. I have also washed my car myself.

(14) ??I know what it means to suffer from rheumatism because I also suffer from rheumatism myself. ((13–14) from Siemund 2000: 205)

But things are not so simple. In a preliminary survey conducted by the current study, two English native speakers consulted judged (14) to be a good sentence, even though they both judged (15) and the second clause in (16B) to be odd.

(15) ??I know what it means to suffer from rheumatism because I suffer from rheumatism myself too.

(16) A dialogue between two people, A and B:

A: Bill has pens, and he can give John pens.

B: There is no need. ??John has pens himself too/??John also has pens himself.

Meanwhile, (17) and (18) are examples of cases in which sentences with inclusive *x-self* can take *also* (Hannah Parsamehr, personal communication).

(17) Neither John nor Bill know how to swim, and they have never been swimming before. But today, Bill went swimming for the first time. Seeing that Bill has been swimming, John decided to try it, too. **So now he has (also) been swimming himself.**

(18) Lily and Susan always have a snack after school. Lily came home first and ate her snack. Susan came later and **by now she has (also) eaten herself.**

As the results of the preliminary English study do not lead to any conclusion about the co-occurrence of an additive particle and an inclusive intensifier in English, further studies are needed to understand the interaction between the two elements. Due to the complicated nature of English additive particles, it is difficult to see how English inclusive *x-self* behaves. Chinese data, on the other hand, can provide a good starting point to study the meaning switch of adverbial intensifiers.

The paper is organized as follows. In § 2, I review previous analyses, focusing on the relationship between exclusive and inclusive intensifiers discussed in the literature. Specifically, I argue against the polysemous account advanced by works like Siemund (2000), and then claim that Gast's (2006) proposal better accounts for the syntax-semantics properties of inclusive and exclusive intensifiers. In § 3.1 and § 3.2, I revise Gast's analysis by adopting Liao's (2018) mechanism for Chinese adverbial *ziji* and extend it to cases where *ziji* is located high and thus evokes alternative topics. I then go on to explain how the operation may result in a "disguised" inclusive use under an exclusive meaning of *ziji*. In § 3.3, I further discuss how the interpretation of adverbial *ziji* is affected by other elements in its sentence. And in § 3.4, I support the one adverbial *ziji* analysis by arguing that adverbial *ziji* always has the same presupposition, regardless of whether it expresses an exclusive reading or a disguised inclusive reading. Finally, I point out issues for future studies and conclude the paper in § 4.

2. Previous analyses

In this section, important previous studies on intensifiers are discussed, using the traditional terms "exclusive intensifier" and "inclusive intensifier". However, it should be noted that these terms are misleading for the study of Chinese adverbial *ziji*, because, as to be argued in § 3, there is only adverbial *ziji*, which derives an exclusive meaning in all its uses.

2.1 A polysemous account of adverbial intensifiers: Siemund (2000)

As mentioned above, exclusive intensifiers have the *alone*-like or the anti-assistance meaning, but inclusive intensifiers have the *also*-like meaning. The two meanings are clearly distinct. For this reason, many previous papers, such as Siemund (2000); Constantinou (2014); Waltereit (2016), and Liao (2017), take a polysemous approach, assigning different semantics to the two intensifiers, while admitting that the two intensifiers share some common semantic properties.

Siemund's (2000) detailed study of intensifiers is a great example of such an approach. He follows König (1991; 2001) and König & Siemund (2000a) to assume that an intensifier, like English *x-self* or German *selbst*, is a focus particle, structuring its sentence to consist of a focus part and a background part. The intensifier's associate is the focused item and is required to take the most central role among a set of alternatives evoked for the focus. Such a centrality requirement is a shared property of all intensifiers, and for adverbial intensifiers, the centrality must be evaluated against the verbal predicates described. For example, in

(19a) *John* is the associate of the exclusive intensifier *himself* and is more central than the alternatives evoked and is considered because he is the owner of the house. The centrality requirement is claimed to be met for inclusive *herself* in (19b) as well, because the second sentence “characterises Liz as the central representative of the property *wear glasses*” (Siemund 2000: 228).

- (19) a. John painted his house himself.
 b. Liz often has a headache. She wears glasses herself. (Siemund 2000: 225)

Although exclusive and inclusive intensifiers share this centrality requirement, they are taken as two lexical items in Siemund’s (2000) work. Some different lexical properties are given to the two intensifiers, including an *also*-like presupposition assumed for inclusive intensifiers but not for exclusive intensifiers. Siemund even explicitly argues for a polysemous analysis, the strongest evidence for which being the co-occurrence of intensifiers. An example given is shown in (20), where the first occurrence of *himself* is an adnominal intensifier, the second an adverbial inclusive intensifier, and the third an adverbial exclusive intensifier.

- (20) Bill himself has himself not found the answer himself. (Siemund 2000: 12)

As different types of intensifiers can appear in one sentence, Siemund infers that they cannot have the same core semantics and get their final meanings from contextual inference. In this view, intensifiers must be lexically ambiguous and contribute different meanings to their sentences. For instance, the intensifiers in (20) have the following semantics: the adnominal *himself* expresses that the predication is about Bill, instead of some other friend, relative or subordinate of his; the inclusive *himself* expresses that the predication has also held for some other salient person in the context; and the exclusive *himself* modifies the verbal predicate and so the whole predication describes the failure of finding the answer on one’s own.

Even though Siemund’s (2000) detailed study is valuable in providing us with a better understanding of different types of intensifiers, there are weaknesses in his proposal. First, the co-occurrence argument is not strong. Any theory which locates different types of intensifiers in different adjunction positions may allow such co-occurrence of intensifiers. Thus, this co-occurrence phenomenon does not necessarily imply polysemy. Second, a polysemous analysis does not identify a link between the exclusive meaning and the inclusive meaning, nor can it explain why an intensifier often switches between the two meanings cross-linguistically. A possible link argued in Waltereit (2016) will be discussed in the next section, but even this analysis is unconvincing due to lack of clarity. Thirdly and most critically, Siemund’s proposal faces a challenge in a syntactic generalization (i.e. the generalization that the interpretations of intensifiers are determined by their

syntactic positions). The generalization actually is examined in detail by Siemund himself and it is supported by other papers such as Gast (2006) and Liao (2017), as to be discussed in the next section.

2.2 The syntax-semantics correlation of adverbial intensifiers

One critical fact in the study of adverbial intensifiers is the relation between their syntactic positions and their interpretations, which is pointed out in Plank (1979) and König (1991), and is extensively discussed in later works like Siemund (2000) and Gast (2006). Specifically, the finding is that an inclusive intensifier is located at a higher syntactic position, and an exclusive intensifier is located at a lower syntactic position.

The first piece of evidence for the syntax-semantics correlation of adverbial intensifiers is shown in sentences with a scope-bearing element like a negative item. For example, in (21) the interpretation of the German intensifier *selbst* depends on its syntactic position relative to the negative item *nicht*. In (21a) it follows and is thus located lower than *nicht*. Within the scope of *nicht*, it expresses an exclusive meaning, so (21a) is understood as “Paul has not done one thing, namely to solve the problem on his own”. In contrast, *selbst* in (21b) precedes and is thus located higher than *nicht*. With a scope over the negation, it has an inclusive interpretation, so (21b) conveys that *Paul* was another one to hold for the predicate of “not solving the problem”.

- (21) a. *Paul hat die Aufgabe nicht SELBST gelöst.* (exclusive)
 Paul has the task not self solved
 ‘Paul has not solved the problem himself.’
- b. *Paul hat die Aufgabe SELBST nicht gelöst.* (inclusive)
 Paul has the task self not solved
 ‘Paul has not solved the problem himself.’ (Siemund 2000: 110)

The above syntax-semantics correlation is particularly evident in cases where it is odd to get an exclusive meaning or an inclusive meaning. Take (22) as an example. For the predicate *schnarcht* ‘snores’ in (22), an exclusive meaning of *selbst* is bizarre because it is rare to consider any assistance in the act of snoring. In contrast, it is perfect to express an inclusive meaning that someone has snored and another person has also snored. Based on the above syntax-semantics correlation, it is then predicted that *selbst* locates higher but not lower than the negative item *nicht*. This prediction is borne out, as revealed in the (un)acceptance of (22a) and (22b).

- (22) a. ^{???}*Paul schnarcht nicht selbst.*
 Paul snores not self
 b. *Paul schnarcht selbst nicht.*
 Paul snores self not
 ‘Paul does not snore himself.’ (Siemund 2000: 112)

In addition to negative elements, the effect is also shown in sentences with quantificational phrases like *three times* or *every week*. This is illustrated by the German examples in (23) and English examples in (24), which are discussed in Siemund (2000) and Storoshenko (2011), respectively. In (23a), where German *selbst* follows and is scoped over by *dreimal* ‘three times’, the sentence gets an exclusive meaning that there are three occasions of Laura’s personally phoning her boss, with no assistance; in contrast, in (23b), where *selbst* precedes and scopes over *dreimal*, the sentence conveys an inclusive meaning that Laura is another person to have phoned her boss three times.

- (23) a. *Laura hat ihren Chef dreimal SELBST angerufen.* (exclusive)
 Laura has her boss three.times self called
 ‘Laura has phoned her boss three times herself.’
 b. *Laura hat ihren Chef SELBST dreimal angerufen.* (inclusive)
 Laura has her boss self three.times called
 ‘Laura has phoned her boss three times herself.’ (Siemund 2000: 110)

Similar behavior is shown by English intensifier *x-self*. When *myself* follows *every week* in (24a), the sentence expresses that the speaker “I” is another person to hold for the predication “write a report every week”; and when *myself* precedes *every week* in (24b), the sentence conveys that every week, the speaker personally writes a report.

- (24) a. I write a report every week **myself**.
 b. I write a report **myself** every week. (Storoshenko 2011: 6)

The positional differences of English inclusive and exclusive intensifiers are also confirmed by a corpus study conducted by Storoshenko, who examines the 2009 timeslice of the Corpus of Historical American English (Davies 2010 (ongoing)). The study finds a clear contrast in what can follow adverbial intensifiers: an exclusive intensifier can be followed by various kinds of adjuncts, like temporal adjuncts, locative adjuncts, or instrumental adjuncts; but an inclusive intensifier is followed only by temporal adjuncts which refer to specific reference times, like *yesterday* or *the past three days*. The contrast suggests the two intensifiers occupy different syntactic positions, particularly when considering that adjuncts in Germanic languages tend to occur in a fixed order in the right periphery, and adjuncts in higher positions tend to occur more to the right (Frey 2003). Moreover, in

Frey's analysis, temporal, locative, and instrumental adjuncts belong to event-internal adjuncts and locate at a syntactic position c-commanded by [Spec, vP]; in contrast, reference time adjuncts are located higher, occupying a position c-commanding [Spec, vP]. Therefore the fact that an inclusive intensifier can only be followed by the latter adjunct suggests that it is located in a higher position than an exclusive intensifier.

In addition to the above empirical facts, other evidence like nominalization and VP topicalization in German is also presented by Gast (2006) to support the syntax-semantics correlation.

Intriguingly, similarities are observed in Chinese, a language typologically unrelated to these Germanic languages. The syntax-semantics correlation of Chinese adverbial *ziji* is examined in Liao (2017), where Chinese additive particle *ye* 'also' is used to examine its behavior. Crucially, Liao finds that when adverbial *ziji* follows *ye*, it has to convey an exclusive meaning; but when it precedes *ye*, it need not do so.⁴ I illustrate the contrast in (25).

- (25) A: *Gege jiao Xiaoming ziji xie zuoye. Xianzai Xiaoming*
 Elder.brother ask Xiaoming ZIJI write homework. Now Xiaoming
xie-wan-le zuoye, gege xie-wan-le ma?
 write-finish-PFV homework, elder.brother write-finish-PFV Q
 'Xiaoming's elder brother asked him to do the homework on his own.
 Now Xiaoming has done the homework. Has his elder brother done his
 homework?'
 B: *Shi, gege ye (ziji) xie-wan-le zuoye.*
 Yes, elder.brother also (ZIJ) write-finish-PFV homework
 'Yes, his elder brother has also done the homework (on his own)'
 B': *Shi, gege ziji ye xie-wan-le zuoye.*⁵

Both (25B) and (25B') are possible answers to the question in (25A). Consider (25B) first. When *ziji* is not present, (25B) simply expresses an additive meaning, namely that Xiaoming's elder brother has also done the homework, without indicating whether he has done this work on his own. However, when *ziji* appears after *ye*, an exclusive meaning of "on his own" must be conveyed. In contrast with

4. Here I present a simplified version of Liao's (2017) finding. In particular, I do not clarify what readings adverbial *ziji* may receive in a pre-*ye* position. Because the details may distract or confuse the reader, I shall not discuss more details of the syntax-semantic correlation of Chinese adverbial *ziji* until the next section.

5. When *ziji* is adjacent to its associated NP, it is always necessary to make sure that it is adverbial *ziji*, not adnominal *ziji*, under discussion. In this sentence, it is possible to add the adverb *yijing* 'already' after the subject NP *gege* 'elder brother'. As *ziji* does not have to be adjacent to the NP, *ziji* can be an adverbial intensifier in the dialogue.

(25B), an exclusive meaning is not necessary in (25B') with *ziji* preceding *ye*. This is confirmed by the possibility of having (25B') followed by expressions like “but in fact, he didn't do all the homework by himself; someone helped him”. Note that such a continuation is impossible for (25B). So it is quite clear that the semantic function of adverbial *ziji* is affected by its position relative to *ye*. Since it is generally assumed that the surface ordering determines the semantic scope in Chinese (cf. Huang 1981; Huang 1982; Lee 1986, among many others),⁶ the above facts show the following: when adverbial *ziji* is preceded by *ye* and thus is scoped over by *ye*, it is an exclusive intensifier; but when it precedes *ye* and thus scopes over *ye*, it may have another semantic function.

The effect with respect to negation is also observed in Chinese. Take the contrast in (26) as an example.

- (26) a. *Xiaohua bu yonggong, ta meiyou ziji xie zuoye.*
 Xiaohua not work.hard, she not ZIJI write homework
 ‘Xiaohua didn't work hard. She didn't do the homework on her own.’
 b. ??*Xiaohua bu yonggong, ta ziji meiyou xie zuoye.*

In (26a), the second clause provides an explanation for the first clause, and the following is expressed: since Xiaohua did not do the homework on her own, she did not work hard. In this case, the “on one's own” meaning is conveyed by the intensifier *ziji*. But such an exclusive meaning cannot be conveyed when *ziji* precedes the negation *meiyou* ‘not’ in (26b), which becomes degraded in acceptability, expressing an unclear meaning. It might be questioned whether adverbial *ziji* must convey an exclusive meaning in a position lower than *meiyou*. (27) illustrates that it must be so.

- (27) Q: *Zhangsan guli dajia juan-qian, zuihou shei juan-le?*
 Zhangsan encourage all.people donate-money, at.last who donate-PFV
 ‘Zhangsan encouraged everyone to donate money. Who donated at last?’
 A: *Lisi meiyou juan, Zhangsan (ziji) meiyou juan/*Zhangsan meiyou*
 Lisi not donate, Zhangsan ZIJI not donate/*Zhangsan not
ziji juan, zhiyou Xiaoming juan-le.
 ZIJI donate, only Xiaoming donate-PFV
 ‘Lisi didn't donate money; **Zhangsan didn't donate money (himself)/*Zhangsan didn't donate money by himself**; only Xiaoming donated money.’

6. However, there are exceptions, as observed in syntax-semantics of numeral classifier phrases. Interested readers are referred to Huang (1982:214–220), Aoun & Li (1989:142; 1993:12) and Liu (1997:54–57).

It is possible for the answer to the question in (27) to contain intensifier *ziji*. However, *ziji* must precede *meiyou* ‘not’, as shown in (27A). It is impossible for *ziji* to follow *meiyou* ‘not’, as this ordering results in the exclusive meaning that “Zhangsan didn’t personally donate the money; instead, he asked some other person to do it for him”. No matter who ended up doing it, Zhangsan had his money donated. Such an utterance cannot be followed by the continuation that only Xiaoming donated money. So, the intuition for (27A) is accounted for, and it is then concluded that *ziji* must convey an exclusive meaning when located lower than the negation marker.

Having established that, universally, the interpretations of intensifiers are determined by their syntactic positions, we must now account for this fact. It is important to note that it is difficult to explain this generalization by pragmatics or pure semantics. For example, it is unclear how to account for the lack of an exclusive reading for the post-QNP intensifier in (24a), when by an internet search there are plenty of examples showing that *on my own*, another expression with a similar exclusive meaning, can follow a QNP. Two examples include “I went to work **every day on my own**” and “I could paint **every day on my own**”. Likewise, examples can be found where an additive particle appears before a QNP, like “the University of Cape Town Underwater Club has been there **too every week**”. So it is not self-evident why *myself* cannot work as an inclusive adverb in (24b).

The difficulty of pursuing a pragmatic or a purely semantic account for the behavior of adverbial intensifiers leads us to reconsider the polysemous approach adopted in previous works like Siemund (2000). Polysemy as a kind of lexical ambiguity differs from homonymy in that a polysemous word has multiple related meanings, while the meanings of a homonymous word are unrelated (Lyons 1977). Moreover, the meanings of a polysemous word are often associated on a metaphoric or metonymic basis (cf. Lakoff & Johnson 1980, among others). One example for the metaphor-based polysemy is the use of *head* in “John’s head” and “the head of the company”. In the former expression *head* denotes the most important body part of a person. On a metaphorical basis, the sense of “something most important” is carried over to the use of *head* in the latter expression, where it is used to refer to the most important person of the company. As for metonymy, the meaning relation is based on the contiguity of two entities. Typical examples include *John drank the bottle*, *I need a hand*, and *the store announced the news*, where *bottle* stands for “the content of the bottle”, *a hand* stands for “a man”, and *the store* refers to “some manager of the store”. As revealed in these examples, metonymy commonly involves a part-whole relation or an institution-person relation between the entity originally referred to and the entity intended to be denoted.

With this basic understanding of polysemy, let us now consider the behavior of adverbial intensifiers. If an adverbial intensifier is polysemous, its various meanings are connected on some conceptual basis, such as metaphorically or metonymically. But it is hard, if ever possible, to imagine how an *alone*-like/anti-assistance meaning is connected to an *also*-like meaning. To my knowledge, the only paper which has tried to establish such a connection is Waltereit (2016). In Waltereit's diachronic study of French intensifiers *lui-même/elle-même*, he shows that the adverbial exclusive use predates the adverbial inclusive use in the history of French, and he claims that the exclusive meaning was extended to an inclusive meaning on the conceptual basis of metonymy. Waltereit's examples are presented below for illustration.

(28) *Et samedi, j'ai une connaissance qui vient voir la maison avec nous; il est électricien et il a construit lui-même sa maison, donc je pense qu'il saura nous conseiller.*

'On Saturday a friend will view the house with us; he is an electrician and he built his house himself, so I think he can advise us properly.'

(Waltereit 2016: 58)

(29) *Je suis cheminot moi-même.*

I am railway.man me-MÊME

'I am a railway worker myself.'

(Waltereit 2016: 56)

The intensifier *lui-même* in (28) appears in the sentence *il a construit lui-même* 'he has built him-MÊME his house = he built his house by himself'. Here it expresses an exclusive meaning, adding the truth condition of "performing the event on one's own" to the sentence. As the person denoted completed the housing-building event on his own, this person could be inferred to be quite knowledgeable and capable and be deemed as an expert in such matters. Waltereit suggests that such an inference may dominate the meaning of an adverbial intensifier in some cases, thereby establishing the inclusive use of the intensifier. In other words, in this inclusive use, the intensifier implies that its associate is an experienced, knowledgeable person for the predicate described, as in (29), but the addition of the intensifier does not affect the truth condition of the sentence.

Though Waltereit's (2016) proposal is interesting, there are shortcomings. First, it is not clearly demonstrated nor discussed in detail how the cognitive mechanism operates for metonymy in this case. No other evidence is provided to show that the sort of metonymy operating for intensifiers exists in natural language. Furthermore, it is unclear why the adverb has to locate in a higher position in the extended meaning. Can this adverb not stay in the original vP-internal or VP-internal position with the new extended meaning? Even though Waltereit uses the term "context-level meaning" in his paper to explain the syntactic effect, the

vagueness in the explanation makes this analysis questionable. Lastly, the variety of implications conveyed by adverbial intensifiers is a big challenge to Waltereit's (2016) analysis. Waltereit uses (28) and (29) as examples to argue for the meaning extension of adverbial intensifiers. However, there are numerous examples where exclusive and inclusive intensifiers do not carry any implications about experience, knowledge, or capacity. Take (30)–(31) for instance.

(30) *Xiaoming ziji zai he-tang.*

Xiaoming ZIJI PROG drink-soup

'Xiaoming is drinking soup alone.'

(31) *Bu-yong gei Zhangsan bi, ta ziji ye you bi.*

Not-use give Zhangsan pen, he ZIJI also have pen

'There is no need to give Zhangsan pens. He himself has pens.'

The exclusive *ziji* in (30) simply conveys that Xiaoming is drinking soup alone. It is doubtful that this example makes us infer anything about Xiaoming's experience with or capacity for soup-drinking. As for (31), a very typical example of inclusive intensifiers, the use of *ziji* does not suggest anything about Zhangsan's knowledge or experience. So, even though adverbial intensifiers may carry implications about the experience or capacity of their associates, they do not always do so. As a result, Waltereit's analysis is not convincing, unless it can be shown that an overwhelming majority of sentences with adverbial intensifiers has experience/knowledge-related implications.⁷

To sum up, it is unclear how the two uses of adverbial intensifiers are related semantically, especially in light of the syntax-semantic correlation of the meaning switch. If this is a case of lexical ambiguity, why do the two items appear to be in complementary distribution? So, contra the polysemous approach adopted in works like Siemund (2000) and Waltereit's (2016), this paper aims to improve upon Gast's (2006) analysis and provide a clear mechanism to derive the two surface meanings from a single semantics of adverbial intensifiers. The next section will introduce Gast's proposal and discuss why it needs to be revised.

2.3 Gast's (2006) analysis

In Gast's (2006) analysis, exclusive and inclusive intensifiers seem to be the same lexical item. In terms of syntax, the so-called adverbial intensifiers behave like

7. As has been pointed out in Liao (2017), the semantics of inclusive intensifiers proposed in Constantinou's (2014) faces the same problem, because in the analysis, inclusive intensifiers are also claimed to require their associates to be more knowledgeable or take a more prototypical role with respect to the events/states described by their VPs.

adnominal intensifiers in base-generating as sisters of DPs in [Spec, vP]. However, on the surface they are usually distant from the head DPs because the DPs move upwards in the syntactic derivation. Exclusive intensifiers differ from inclusive intensifiers only in that the former remain inside vP, while the latter move upward from [Spec, vP] to [Spec, TP] along with their head DPs. This difference is claimed to result in the syntax-semantics correlation of adverbial intensifiers discussed in the previous section.

To derive the semantics of sentences with adverbial intensifiers, Gast assumes that the movement of the subject NP results in a semantic representation with an antecedent-variable relation. An example is given in (32). The structure in (32a) has the semantic representation shown in (32b), where an antecedent-variable relation is established between *John* and the variable *x*.

- (32) a. John_i $[[x_i \text{ himself}]_F]$ will mow the lawn
 b. for $x = \text{John}$: $\text{ID}_F(x)$ will mow the lawn (Gast 2006: 128)

As (32b) shows, adverbial intensifiers are identical functions (i.e. ID_F) from the domain of individuals to the domain of individuals, an idea inspired by Eckardt's (2001) analysis for adnominal intensifiers. As intensifiers are focused, they also trigger alternatives, which are "generalized alterity functions", namely functions that take some *x* and return "someone other than *x*". A more complete representation for the semantics of adverbial intensifiers is as shown in (33a). In this case, the ID function derives the proposition in (33b), and a set of alterity functions result in a set of alternative propositions with the proposition content as in (33c). Lastly, the holding of (33b) under the consideration of (33c) results in the final exclusive meaning that John, rather than any other person, has mown the lawn.

- (33) a. for $x = \text{John}$: $\left\| \begin{array}{c} \text{ID} \\ \text{OTH} \end{array} \right\| (x)$ has mown the lawn
 b. As far as John is concerned, the individual identical to him has mown the lawn.
 c. As far as John is concerned, someone other than him has mown the lawn. (Gast 2006: 128)

The above example illustrates the use of the so-called exclusive intensifier. As for inclusive intensifiers, they should be located in a higher position. To understand Gast's analysis for inclusive intensifiers, the following crucial difference between exclusive and inclusive intensifiers should be discussed first. Consider (34).

- (34) a. Ruth has posted the letter herself. (exclusive)
 b. Ruth has posted a letter herself. (inclusive)
 (Siemund 2000: 116)

The intensifier *herself* has an exclusive meaning in (34a) but an inclusive meaning in (34b). The use of the intensifier in (34a) prompts us to consider alternative propositions where someone other than Ruth has posted the letter. The consideration is toward one particular event token, an event realized at some particular time and space with a particular letter as the patient. And (34a) conveys that Ruth rather than some other person was the agent for this particular event token. In contrast, for (34b), different event tokens of the same event type, the type of a letter-posting event, should be considered. For example, suppose if “Daniel has posted a letter” is an alternative proposition triggered for (34b), this proposition refers to an event spatiotemporally different from the one referred to by the proposition “Ruth has posted a letter”.

The above contrast illustrates a generalization made in Siemund (2000): an exclusive intensifier must modify a “transferable” event, because it invites us to consider a single event token whose agent is at issue; but an inclusive intensifier must modify a “repeatable” event, evoking the consideration of different event tokens of the same event type.

Gast (2006) accounts for the above difference between exclusive and inclusive intensifiers through their syntactic positions relative to the T node. This node is crucially assumed to be an existential quantifier binding the event variable in its scope. With an exclusive intensifier remaining in its base-generated position [Spec, vP], (35) is a more refined version of (33a), where the ID function and the evoked alternative functions are within the scope of the existential event quantifier.

$$(35) \quad \text{for } x = \text{John: } \exists e[\text{MOW}(\text{the lawn})(\left\| \begin{array}{c} \text{ID} \\ \text{OTH} \end{array} \right\| (x))(e)]$$

(Gast 2006: 129)

In contrast, an inclusive intensifier is assumed to move to [Spec, TP], as shown in (36b). After the movement, the ID function denoted by the intensifier and its evoked OTH functions all take scope over T, as in (36c).

- (36) a. John is himself a drinker.
 b. $\text{John}_i \left[[t_i \text{ himself}]_j T^0 [t_i \text{ is a drinker}] \right]$
 c. $\text{for } x = \text{John: for } y = \left\| \begin{array}{c} \text{ID} \\ \text{OTH} \end{array} \right\| (x): \exists e[\text{DRINKER}(y)(e)]$

(Gast 2006: 138)

The proposition content “as far as John is concerned, someone identical to John is a drinker” is derived via the ID function; and the alternative propositions describing that some other people are drinkers are derived via the OTH functions. Crucially, as illustrated in (36c), an inclusive intensifier triggers alternatives which refer to their own existentially bound events. So by considering these alternatives,

different event tokens are considered. This is in contrast with the use of the exclusive intensifier. An exclusive intensifier triggers alternatives at a point where the event denoted by the predicate is not yet existentially bound, and so the alternatives are considered for the same event token.

Gast's (2006) analysis provides us with a clearer picture of the syntax-semantics interaction in the uses of adverbial intensifiers. Under his analysis, the exclusive and inclusive interpretations seem to be two uses of one single lexical item realized at two different syntactic positions. Such an analysis accounts for the fact that adverbial intensifiers cross-linguistically often have the two uses and show the same syntax-semantics correlation. However, though his analysis seems to be on the right track, it needs to be revised for the following reasons.

First of all, it is doubtful that Gast's analysis of exclusive intensifiers derives the desired exclusive meaning. Gast suggests that the exclusive sense is gotten within the scope of the existential event binder, and he uses (37) as an example to illustrate what is to be derived under this analysis.

- (37) a. I have read that book myself.
 b. There is an action e of reading the book, and e was carried out by myself, not by anyone else. (Gast 2006: 136)

But this treatment does not derive the desired exclusive meaning. Take (38) as an example. The semantic representation of (38a) is in (38b), where the temporal trace function τ is applied to the event e to get the running time of e , which is some past time t_1 .

- (38) a. John swam himself.
 b. for $x = \text{John}$: $\exists e[\text{SWIM}(\left\| \begin{array}{c} \text{ID} \\ \text{OTH} \end{array} \right\| (x))(e) \wedge \tau(e) = t_1]$
 c. $\exists e[\text{Agent}(e, \text{John}) \wedge \text{swam}(e) \wedge \neg \text{Agent}(e, \text{Bill}) \wedge \tau(e) = t_1]$
 d. $\exists e[\text{Agent}(e, \text{Bill}) \wedge \text{swam}(e) \wedge \tau(e) = t_1]$

Suppose that Bill is the only relevant alternative. In this case, it follows that (38b) expresses that there was a swimming event at some past time t_1 , and John rather than Bill was the agent of this event. This propositional content is presented in (38c), and it emphasizes the swimming of John at t_1 . However, (38c) is compatible with (38d), since there can be a scenario where John and Bill swam at the same time, and this scenario will make both (38c) and (38d) true. As a result, (38c) does not give us the intended exclusive meaning that John, but not some other person, swam.

Another critical problem of Gast's (2006) analysis is his claim that alternative propositions evoked at a position higher than T refer to different event tokens.

This claim is questioned by Constantinou (2014) with a counterexample presented in (39).

(39) A: John went to the cinema.

B: No, [_{TP} MARY [_T [_{VP} went to the cinema]]]. (Constantinou 2014: 46)

In (39B), the subject NP *Mary* is in focus at the position [Spec, TP]. The focus evokes alternative propositions, all of which describe the same cinema-going event token. So it is not true that focused NPs at higher positions are tied with considerations of different event tokens.

In addition to the issues identified by Constantinou (2014), the current paper points out another problem revealed by (39). (39B) conveys that Mary, rather than John, went to the cinema. This is an exclusive reading rather than an inclusive reading. In fact, hearing the sentence *MARY went to the cinema* out of the blue usually makes us infer that only Mary went to the cinema. So, focusing a subject NP, which is widely assumed to locate at [Spec, TP], does not lead to an inclusive reading. It is puzzling, then, why adverbial intensifiers must get inclusive readings at [Spec, TP].

One might argue that focusing on a regular NP like *Mary* in (39B) works differently from the alternative-evoking of an adverbial intensifier. But Chinese clearly shows that an adverbial intensifier can get an exclusive reading at a position higher than negation. Consider (40)–(41).

(40) *Bie-ren dou juan-le qian, Zhangsan que ziji meiyou juan.*

Other-man all donate-PFV money, Zhangsan QUE ZIJI not donate

‘Other people all donated money, but Zhangsan himself didn’t donate money.’

(Context: Zhangsan was the one to ask the people to donate money.)⁸

(41) *Rang dajia dou pa-xia de Zhangsan que ziji mei pa-xia.*

Make everyone all lie-down of Zhangsan QUE ZIJI not lie-down

‘Zhangsan, who asked everyone to lie prone on the ground, didn’t do it himself.’

The first clause in (40) expresses that all the other people donated money. In such a context, adverbial *ziji* in the second clause clearly does not function as an inclusive intensifier, as Zhangsan was the only person who did not donate money. Likewise, (41) conveys that Zhangsan was the only one who did not lie prone on the ground. In the two examples, adverbial *ziji* with an exclusive reading scopes over negation. Thus, (40) and (41) are counterexamples of Gast’s (2006) analysis, in

8. In many cases, some contextual information is necessary for the use of adverbial *ziji*. This will be accounted for by a presupposition of adverbial *ziji* in § 3.4.

which adverbial intensifiers are predicted to get inclusive meanings in higher syntactic positions.

It is important to remember that, as demonstrated by the Chinese data in (25)–(27) in § 2.2, Chinese adverbial *ziji* must convey an exclusive reading in a lower syntactic position. So taken together, the data reveal that Chinese adverbial *ziji* does not necessarily express an inclusive construal in a higher syntactic position; but when it does, it must occupy a high syntactic position. Since Gast's analysis cannot provide a complete account for this, an alternative analysis must be pursued.⁹

To sum up, despite its strengths, Gast's analysis has several shortcomings. First, in cases where an exclusive reading should be derived, the mechanism in the current shape does not derive the intended exclusive reading, much less explain some cases where Chinese adverbial *ziji* can derive an exclusive reading at a higher position. Second, it remains unclear why an inclusive reading in general is preferred for intensifiers at a higher position. Third, it does not seem to hold that a higher syntactic position should be tied with multiple event tokens in the consideration of focus-evoked alternatives. In light of these problems, the paper will propose a revised analysis of Gast's, using Chinese as an example to demonstrate how one adverbial intensifier with the same semantics can show different surface meanings in different positions after the global application of an exhaustivity operator *O*, an operator used in Chierchia (2004; 2006; 2013), Chierchia et al. (2012), and many other recent works.

3. The proposal

3.1 Liao's (2018) mechanism for Chinese exclusive intensifier *ziji*

For ease of exposition, before going into the details of my proposal, I shall introduce Liao's (2018) mechanism for deriving the various exclusive uses of Chinese adverbial *ziji*, and then show how Liao's proposal can be extended to the disguised inclusive use of *ziji*.

9. Storoshenko (2011) has examined in more detail the interpretations of English adverbial intensifiers in different positions, and compared adverbial intensifiers with other adverbial phrases for their distribution. Storoshenko then revises Gast's (2006) analysis to better catch the English facts. In particular, it argues for the adverbial status of adverbial intensifiers, and it proposes that the English inclusive intensifier originates at a position higher than *T*, which, however, is not [Spec, TP]. Storoshenko's proposal will not be discussed further in the current paper, because it shares some weaknesses with Gast's analysis. For example, it also cannot explain the mysterious linking between a higher position and an inclusive reading.

Tsai (2015; 2019) identifies three different exclusive readings of Chinese adverbial *ziji*. These readings are exemplified by the three-way ambiguity of (42) in Liao (2018).

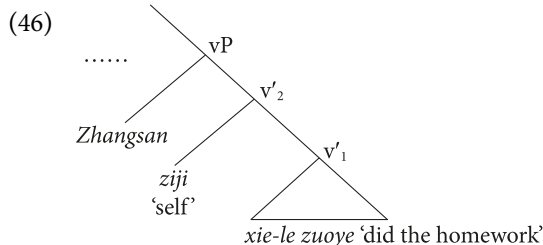
- (42) *Zhangsan ziji xie-le zuoye.*
 Zhangsan ZIJI write-PFV homework
 a. ‘Zhangsan, rather than some other person, did the homework.’
 b. ‘Zhangsan did the homework alone.’
 c. ‘Zhangsan did the homework of his own accord.’
- (43) a. Did Lisi do the homework for Zhangsan?
 b. He didn’t do it with Lisi.
 c. He was not forced by his mom. ((42–43) from Liao 2018: 30–31)

The readings of (42a–c) are dubbed the non-delegation, the anti-group, and the internal causation reading, respectively. Among them, context plays a crucial role in determining which reading is being expressed. For instance, as an answer to the question in (43a), (42) will receive the reading in (42a) to express that Zhangsan – but not Lisi – was the agent of the homework-doing event. If (42) is followed by (43b), it is inferred that the anti-group reading in (42b) is expressed. Finally, if (42) is followed by (43c), it expresses the internal causation reading in (42c) that Zhangsan did the homework out of his own volition, and was not forced by his mother.

Liao (2018) argues that the above three readings all have some sense of exclusion. For example, (42a) excludes Lisi from being an agent of the homework-doing event; (42b) excludes some plural entities from being involved in the event; and (42c) excludes external force from being the cause of Zhangsan’s homework-doing action. As alternatives to the associate of adverbial *ziji* are considered and excluded, Liao adopts the focus analysis for intensifiers proposed by Eckardt (2001) and Hole (2002; 2008), and argues that Chinese adverbial *ziji* is a focused item with the ordinary semantics shown in (44) and evokes alternatives as in (45), where $[[ziji_F]]^o$ denotes its ordinary semantics and $[[ziji_F]]^f$ denotes its focus semantics value (cf. the focus theory in Rooth (1985; 1992)).

- (44) $[[ziji_F]]^o = \lambda P: P \in D_{\langle e, \langle e, t \rangle \rangle}$. P
 (ϵ is the type for event entities)
- (45) $[[ziji_F]]^f = \{\lambda P: P \in D_{\langle e, \langle e, t \rangle \rangle} \cdot \lambda x [P(y)]: y \in D_{e/c}\}^{10}$
 where c stands for context, and $D_{e/c}$ is a domain for entities which are of type $\langle e \rangle$ and which are contextually relevant
 ((44–45) from Liao 2018: 22)

To understand Liao's analysis, let us discuss how the above semantics of *ziji* results in the non-delegation reading for (42). To derive this reading, it is assumed that *ziji* adjoins to v' , as in (46).



The ordinary semantic value of *ziji* shown in (44) is an identity function. By this definition, *ziji* taking the function denoted by v'_1 should return the same thing, namely a function to take an entity and make it the agent of the event described by the VP, as shown in (47).

$$\begin{aligned}
 (47) \quad & ||[{}_{v'_2} ziji_F v'_1]||^o = ||ziji_F||^o(||v'_1||^o) \\
 & = [\lambda P: P \in D_{\langle e, \langle e, t \rangle \rangle}. P](||v'_1||^o) \\
 & = ||v'_1||^o \\
 & = \lambda x \lambda e [Agent(e, x) \wedge ||VP||^o(e)]
 \end{aligned}$$

10. Liao (2018) makes use of a tricky operation here to make the alternative-triggering of an adverb able to affect the value of a NP, without attaching to the NP directly. That is, she assumes that *ziji* in its focus semantic value introduces a free variable y in $P(y)$, and the referent of this variable is determined by context. This design has the effect that when the constituent with *ziji* goes on to take the subject NP, the entity denoted by the subject NP will not be the only entity to work as the argument of the predicate P in the focus semantic value of the sentence.

As the focus semantic value in (45) is tricky, it is worth clarifying why *ziji* is not attached to the subject NP directly in Liao's (2018) analysis. In fact, a reviewer of the current paper does suggest such a modification for Liao's analysis. However, Liao (2018: 21) in Footnote 8 has proposed evidence to argue that even though Chinese modifier *ziji* may be able to work as an adnominal modifier, it must be able to work as an adverb, too. The evidence provided is the adding of the adverb *zuihou* 'at last' in sentences like (i) below to separate *ziji* from the subject NP. Notice that the current paper in Footnote 3 has also discussed the adding of a modifier for sentence (8) to argue for the adverbial use of *ziji*.

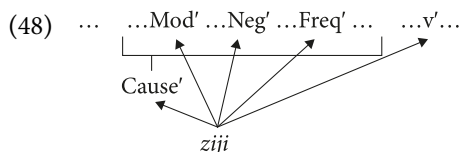
- (i) *Meiyou, John zuihou ziji ji-le xin.*
 No John at.last ZIJI send-PFV letter
 'No, John sent the letter himself at last.'

Likewise for the other exclusive uses, *ziji* does not need to be adjacent to the subject NP. So it can function as an adverb when expressing these various exclusive meanings. This empirical fact supports Liao's proposal for the semantics of *ziji* in (44)–(45), at least in its adverbial uses.

Through the identity function of *ziji*, the subsequent semantic composition will simply derive the meaning that Zhangsan did the homework. Nothing is added by the function. What *ziji* really contributes to the sentence is the evoking of alternatives via its focus semantics value in (45). By (45), after *ziji* takes v'_1 as its argument, it evokes a set of alternative functions, each of which takes the subject NP as its argument but returns to us the proposition that some y , i.e. some contextually relevant person, is the agent of the homework-doing action. For instance, when $D_{e/c} = \{\text{Zhangsan, Bill, Tim}\}$, the alternative propositions evoked are $\{\text{Zhangsan did the homework, Bill did the homework, Tim did the homework}\}$. Then the exhaustivity operator O , i.e. a covert *only*-like operator proposed in Chierchia (2004; 2006; 2013), will target the set of alternative propositions and derive the *only*-like meaning that Zhangsan, rather than Bill or Tim, did the homework. Thus, a non-delegation reading is derived.

Note further that by the use of $D_{e/c}$ in (45), the alternatives to be considered vary by domains. The evoked alternatives may be single entities, as in the above example, or they may be group entities. The domain variation is claimed to affect whether a non-delegation reading or an anti-group reading is expressed by *ziji*. However, further details about domain variation will not be discussed; instead, the current paper would like to emphasize the other factor claimed to affect the readings of *ziji*, namely the syntactic position of *ziji*, an empirical fact first pointed out in Tsai (2015; 2019).

Among the two representative approaches to the syntax of adverbs, namely the “adjunction theory” of adverbs (cf. Ernst 2001; Haider 2004; Nilsen 2004) and the cartographic theory (advocated in Rizzi (1997) and Cinque (1999), and supported by Tsai (2019)), Liao (2018) provides empirical data to argue for an adjunction-based structure for adverbial *ziji*. In the adjunction analysis, adverbial *ziji* is versatile in the sense that it has the ability to adjoin to various X' nodes, including Cause', Mod', Neg', Freq', and v' , as shown in (48), where CauseP may be projected in a higher or lower position. In other words, no syntactic restriction is assumed for the adjunction of this adverb, but semantics may play a role in ruling out some adjunction options, a common view of the adjunction approach.



(Liao 2018: 15)

Among the different adjunction options, two nodes are discussed in detail in Liao's paper to demonstrate how different adjoining positions affect the interpre-

consideration of different alternative causers. So, it is concluded that the syntactic position of adverbial *ziji* determines its final interpretation.¹¹

It is interesting to note that Liao's analysis captures a syntax-semantics correlation of adverbial *ziji* for its various exclusive uses. This reminds us of the

11. As mentioned in the main text, Tsai (2015; 2019) is the first one clearly pointing out the correlation between the reading of adverbial *ziji* and its syntactic position. Rich data can be found in Tsai's papers, including cases where adverbial *ziji* changes its meanings by its syntactic position relative to other lexical items such as *dou*, modal words, negation, etc. Interested readers are thus referred to Tsai's paper for more empirical details.

Interestingly, the progressive aspect maker *zai*, which is not discussed in Tsai's papers, is considered by a reviewer, who wonders why *ziji* in a position higher than *zai* shows an *alone*-like reading (as in (i)) but it in a position lower than *zai* expresses an anti-assistance reading (as in (ii)).

- (i) *Xiaoming ziji zai he-tang.*
 Xiaoming ZIJI PROG drink-soup
 'Xiaoming is drinking soup alone.'
- (ii) *Xiaoming zai ziji he-tang.*
 Xiaoming PROG ZIJI drink-soup
 'Xiaoming is drinking soup on his own.' (possible contexts: Xiaoming is a patient or a little child)

As this issue is linked to a detailed analysis of progressive *zai*, I cannot provide a complete analysis here. However, I would like to consider a very rough possible account for the meaning difference between (i) and (ii) under Liao's (2018) proposal. Liao (2018) mentions that lexical properties of predicates can affect what sorts of alternatives can be plausibly considered. This might be the key to the meaning difference in (i)–(ii). Consider the uses of *zai*. Cross-linguistically many languages use identical words for the progressive aspect and for spatial/temporal adpositions (cf. Comrie 1976; Bybee et al. 1994). Chinese is one of the languages. For example, in addition to its use in (i)–(ii) above, *zai* can be used for locative phrases like *zai fangjian* 'in the room'. Suppose that *zai* has the same or very similar semantics in the different uses (cf. Williams 2016 working in this direction in her analysis of Chinese *zai*), and in all the uses, it describes an individual property. Consider for instance the locative use in the sentence *John han Mary zai fangjian* 'John and Mary are in the room'. For this sentence to be true, each member of the plural subject has to be in the room. It does not make sense to have an assistance-related interpretation for the predication of being in a room. Likewise, for the predication of *zai he-tang* 'be in the stage of soup-drinking', it is predicated of individuals and is not compatible with an assistance-related group reading, which then leads to the lack of an anti-assistance reading in the use of *ziji* in sentence (i). In contrast, for the predication of *he-tang* 'soup-drinking', one individual can be true for this event description by the aid of others. For example, a patient may drink soup with the aid of a nurse. So *ziji* can come in to derive an anti-assistance reading in (ii).

The above account is not complete, neither is it precise. However, it shows that reading restriction of *ziji* might be accounted for under Liao's mechanism when the semantics of other phrases in *ziji*-sentences are understood better.

syntax-semantic correlation between the exclusive and inclusive uses of intensifiers emphasized in § 2.2. It then follows to consider whether Liao's mechanism along with her proposed semantics of adverbial *ziji* can be extended to cases where *ziji* seemingly expresses an inclusive meaning. As to be shown in the section below, this is indeed the case.

3.2 A unifying analysis of Chinese adverbial *ziji* for its exclusive and disguised inclusive uses

The paper proposes that there is only one adverbial *ziji* for all its uses, and this adverb always brings in an exclusive meaning via the application of the exhaustivity operator O. That means, adverbial *ziji* never functions to derive an additive meaning; to reflect such a claim, the so-called inclusive use of *ziji* will be termed "the disguised inclusive use". It will become clear below how to derive this use under Liao's mechanism introduced in the previous section.

The first step in extending Liao's (2018) mechanism to the disguised inclusive use is to consider which syntactic position adverbial *ziji* should occupy for this use. The most promising choice is to adjoin it to Topic', based on previous findings about English and German intensifiers, as explained below.

Even though it does not play a critical role in Gast's formal treatment of intensifiers introduced in § 2.3, one property of inclusive intensifiers is explicitly argued for in Gast (2006): inclusive intensifiers must associate with NPs of a topical status. The association is supported as follows. First, while an inclusive intensifier mostly associates with a subject in English, the German inclusive intensifier is more flexible in its association. For example, a dative NP and an accusative NP, *mir* in (51) and *mich* (52), respectively, both can associate with inclusive *selbst*.

- (51) *Mir gefällt die Situation selbst nicht.*
 Me pleases the situation self not
 'I don't like the situation myself.' (Siemund 2000: 115)
- (52) *Seine Antwort hat mich selbst nicht besonders überzeugt.*
 His answer has me self not particularly convinced
 'His answer didn't strike me as particularly convincing myself.'
 (Siemund 2000: 117)

Based on such data, König & Siemund (1996) claim an inclusive intensifier seeks an element with a higher rank on the thematic role hierarchy (agent > experiencer/beneficiary > patient > theme). In (51) and (52), both of the associates take the experiencer role, and so the association in either case is good. But the above generalization becomes problematic when passive sentences like (53) are considered:

(53) *Ich bin selbst von Hans betrogen worden.*

I am self by Hans cheated been

'I have been cheated by Hans myself.'

(Gast 2006: 113)

In light of these data, Gast infers that the real requirement for the associate of an inclusive intensifier is the topic. The impression that an inclusive intensifier looks for a subject or something higher in the thematic hierarchy simply reflects the fact that a topic is often the subject of a sentence and the thematic role of a subject often ranks higher in the thematic hierarchy. And the contrast between German and English with respect to the associates of inclusive intensifiers can be accounted for by an independent fact that "in English, the correlation between the semantic role, the syntactic relation, and the information-structural status of a DP is stronger than in German" (Gast 2006: 113).

The other evidence provided by Gast (2006) to support the topic association of inclusive intensifiers is the difference in the acceptance of an indefinite associate between inclusive and exclusive intensifiers, pointed out in Siemund (2000). (54)–(55) illustrate the difference. The associates of the exclusive intensifiers in (54a) and (54b) are the indefinite *anyone* and the QNP *many presidents*, both of which do not refer to specific identifiable referents. Thus, exclusive intensifiers can associate with indefinite NPs.

(54) a. Anyone would do such a thing himself.

(Siemund 2000: 101)

b. Many presidents came themselves.

(Siemund 2000: 233)

In contrast with exclusive intensifiers, inclusive intensifiers do not associate with indefinite NPs, as shown in (55). The non-specific and indefinite NP *a president* in (55a) fails to be the associate of the inclusive intensifier *himself*, unless it receives a specific interpretation under some context. Moreover, when a specific reading is made more salient, as in (55b), the association becomes good.

(55) a. ??A president was worried himself.

b. A certain president/one of the presidents was worried himself.

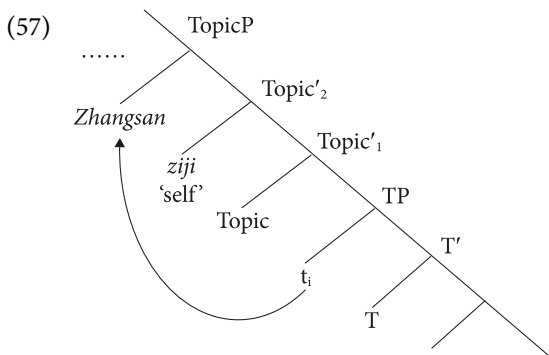
The definiteness restriction of inclusive intensifiers can be accounted for by associating inclusive intensifiers with topics. As is widely held, NPs should be background and given information in order to work as topics (cf. Hockett 1958; Kuno 1972; Gundel 1988; Portner & Yabushita 1998, among others). So, if inclusive intensifiers must associate with topics, they must associate with definite or at least specific NPs.

Based on the above empirical support as well as the data pointing to a higher syntactic position for an inclusive intensifier in § 2.2, it is plausible to assume that in the disguised inclusive use, Chinese adverbial *ziji* associates with a subject NP which occupies the Specifier position of TopicP and works as the topic of the sen-

tence.¹² Further, under Liao's (2018) mechanism, to associate with a topic structurally is to make adverbial *ziji* adjoin to Topic'. Let us assume this, and discuss the resulting semantics.

For purposes of illustration, sentence (9B), repeated below as (56), is taken as an example. The structure of (56) is presented in (57), where *ziji* adjoins to Topic', and its associate NP *Zhangsan* moves from [Spec, TP] to [Spec, TopicP] to work as the topic of the sentence.

- (56) *Zhangsan ziji you bi.* (= (9B))
 Zhangsan *ZIJI* have pen
 'Zhangsan himself has pens.'



Before discussing the semantic composition of (57), it is important to know the semantics of topics. In the literature, the topic of a sentence is commonly viewed as its center of interest and what the sentence is about (cf. Strawson 1964; Reinhart 1981). To express a sentence with a topic is to involve two speech acts: the speech act of establishing some constituent as the topic and the speech act of making the rest of the sentence the comment on the topic (cf. Searle 1969; Jacob 1984; Ebert 2009). On a technical level, Ebert & Hinterwimmer (2010) argue that formally the two speech acts involved can be done by the Topic head, which plays

12. Chinese adverbial *ziji* always associates with a subject NP. The restrictive association could be made as some sort of feature matching or feature checking between adverbial *ziji* and its associate. With the restriction, when adverbial *ziji* associates with a NP in [Spec, TopicP], the NP must be a subject moving from [Spec, TP] all the way to [Spec, TopicP] to work as the topic of the sentence. As adverbial *ziji* does not associate with other sorts of NPs located in [Spec, TopicP], sentences like in (i) below are ungrammatical.

- (i) *Bu zhi Wangwu de nu-pengyou, Wangwu, (*ziji) Zhangsan ye sha-le.*
 Not only Wangwu of girl-friend, Wangwu, *ZIJI* Zhangsan also kill-*PFV*
 'It's not only Wangwu's girlfriend. Wangwu, Zhangsan also killed (*himself).'

a critical role in projecting the whole TopicP. The semantics of this Topic head is in (58).

$$(58) \lambda P \lambda X. \exists \alpha [\alpha = X \ \& \ \text{ASSERT}[P(\alpha)]] \quad (\text{Ebert \& Hinterwimmer 2010: 11})$$

Let us use the structure in (57) as an example, and temporarily ignore intensifier *ziji*. With the semantics in (58), the Topic head will take TP as its argument, and then the resulting function will take the constituent in [Spec, TopicP], namely *Zhangsan* in this case, as its argument. It is then derived that $\exists \alpha [\alpha = \text{Zhangsan} \ \& \ \text{ASSERT}[|\text{TP}|(\alpha)]]$, where the first clause identifies *Zhangsan* as the topic, and the second clause asserts that the comment denoted by $|\text{TP}|$ holds for the topic.

Based on the above semantics of topics, let us examine what adverbial *ziji* contributes to (56). I follow Gast (2006) in assuming that the T head is the place to existentially quantify the event variable (or the state variable in some cases) in its scope. Therefore, the T head in the structure of (57) should have the semantics in (59). With the semantics, it will take some entity x and then derive the meaning that there is a state where this entity has pens at the speech time t_0 .

$$(59) \ ||T| = \lambda x. \exists s [x \ \text{has pens in } s \ \text{at } t_0]$$

Then after the NP *Zhangsan* moves from [Spec, TP] to [Spec, TopicP], I assume that lambda abstraction is done to introduce a λ -term binding the trace left in [Spec, TP], as schematized in (60a). Then, the argument of the Topic head should have the semantics shown as in (60b), and the Topic'₁ node gets the semantics shown in (61c), where the Topic head has taken its argument.

$$(60) \ \begin{array}{l} \text{a. } [_{\text{TopicP}} \text{Zhangsan}_i [_{\text{Topic}'_2} \text{ziji} [_{\text{Topic}'_1} \text{Topic } \lambda x_i [_{\text{TP}} t_i [\dots]]]]]] \\ \text{b. } \lambda x_i. |\text{TP}| = \lambda x_i. \exists s [x_i \ \text{has pens in } s \ \text{at } t_0] \\ \text{c. } ||\text{Topic}'_1|| = \lambda X. \exists \alpha [\alpha = X \ \& \ \text{ASSERT}[\lambda x_i. \exists s [x_i \ \text{has pens in } s \ \text{at } t_0] (\alpha)]] \\ \quad = \lambda X. \exists \alpha [\alpha = X \ \& \ \text{ASSERT}[\exists s [\alpha \ \text{has pens in } s \ \text{at } t_0]]] \end{array}$$

In the next step, *ziji* comes into the structure. As in (44)–(45), intensifier *ziji* works as an identity function in its ordinary semantics, and it evokes alternatives for consideration by its focus semantic value. Therefore, p_1 shown in (61) will eventually be derived as the ordinary semantics of the whole sentence, and p_1 , p_2 , and p_3 are alternatives evoked when $D_{e/c} = \{\text{Zhangsan}, \text{Lisi}, \text{Wangwu}\}$.

$$(61) \ \begin{array}{l} D_{e/c} = \{\text{Zhangsan}, \text{Lisi}, \text{Wangwu}\} \\ p_1: \exists \alpha [\alpha = \text{Zhangsan} \ \wedge \ \text{ASSERT}[\exists s [\alpha \ \text{has pens in } s \ \text{at } t_0]]] \\ p_2: \exists \alpha [\alpha = \text{Lisi} \ \wedge \ \text{ASSERT}[\exists s [\alpha \ \text{has pens in } s \ \text{at } t_0]]] \\ p_3: \exists \alpha [\alpha = \text{Wangwu} \ \wedge \ \text{ASSERT}[\exists s [\alpha \ \text{has pens in } s \ \text{at } t_0]]] \end{array}$$

The last step is to apply the exhaustivity operator *O* to use up the alternatives. With an *only*-like meaning, the application of *O* will make p_1 true, but p_2 and p_3 false. This is the final meaning of (56).

Note that from the exclusion of p_2 and p_3 , it is not necessary that Lisi and Wangwu have no pens. What is excluded is taking Lisi or Wangwu as the topic to assert the comment “having pens”. Lisi or Wangwu could have pens in the context. This is the reason why (56) (=9B) is acceptable to be uttered in the dialogue in (9), where it is explicitly conveyed that Lisi has pens. This example illustrates how adverbial *ziji* conveys a disguised inclusive reading. It is an identity function and as such never contributes an additive meaning to its sentence. However, when it targets Topic’ for adjunction, the resulting truth conditions for its sentence are compatible with scenarios where the predicate in question has already held for some individual in the context. In such contexts, this results in the illusion that it switches its exclusive meaning to an inclusive one. But this is simply an illusion.¹³ For example, (56) with adverbial *ziji* does not have to be interpreted inclusively. To see this, consider a scenario where (62) is asserted in a classroom by someone, say speaker A, who knows that only Zhangsan has pens in that room. As a response to (62), (63a) is a proper statement, but (63b) is not, unless one shifts to a wider contextual domain to consider people outside of that room. It is evident that (63b) is bad in this scenario because of the additive meaning of the particle *ye* ‘also’. So the possibility of asserting (63a) in this context shows that *ziji* does not contribute an additive meaning to (63a).

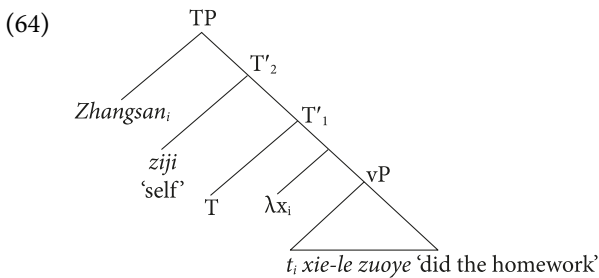
- (62) *Lisi shi meiyou bi. Ruguo ta you bi, ta hui jie Zhangsan bi.*
 Lisi be not pen. If he have pen, he will lend Zhangsan pen
 ‘Lisi doesn’t have pens. If he had pens, he would lend Zhangsan a pen.’

13. Admittedly, it can be difficult to get an exclusive reading for some sentences with adverbial *ziji*. At least two independent factors result in the restriction of its interpretation. First, as already noted in Liao (2018), adverbial *ziji* needs to evoke alternative individuals for consideration, and it can be odd to evoke alternative individuals for some VPs. For example, for a snoring action, which usually is not planned or controlled, it is rare that various alternative people will be evoked for consideration for its agent role. In addition, a presupposition carried by adverbial *ziji* may also affect its use and reading in sentences. The presupposition will be discussed in more detail in § 3.4.

- (63) a. *Bu-yong, Zhangsan ziji you bi.*
 Not-use, Zhangsan ZIJI have pen
 ‘There is no need. Zhangsan has pens himself.’
 b. *Bu-yong, Zhangsan ziji ye you bi.*
 Not-use, Zhangsan ZIJI also have pen

The claim that the so-called inclusive intensifier gives no additive meaning to its sentence is a critical difference between the current analysis and all the previous studies of inclusive intensifiers. In the current proposal, an inclusive sense is inferred from the context, not from the topic association of *ziji*. The advantage of the current analysis is that it does not force an inclusive reading in the topic association, as attested by the fact that an exclusive case is also compatible with the topic association. Examples (40) and (41) show that adverbial *ziji* scoping over negation can occur in cases where the predication of its sentences holds for its associates only. For instance, in (40) the predication of “not donating money” holds for Zhangsan, the associate of *ziji*, but not for any other person in the context. Just like the inclusive cases, this sort of exclusion is contributed by context, instead of by *ziji*. What *ziji* really contributes to (40) is the exclusion of the topic-comment relation for any other people. And by doing so, it emphasizes that the predication is about Zhangsan.

To clarify how a higher or lower adjunction position affects the final meanings of *ziji*-sentences, let us look at the lower adjunction case in (46) again. The structure in (46) has to be slightly revised, because it is crucial for T, the event binder, present in the structure. As shown in the revised structure in (64), let us assume that *ziji* adjoins to T', instead of v', in deriving the exclusive non-delegation meaning “Zhangsan, rather than some other person, did the homework”.



In the refined structure, *ziji* should take the function shown in (65) as its argument, where t_1 refers to some salient past time. Then by the identity function denoted by *ziji* and its evoked alternatives, the propositions in (66) will be considered when $D_{e/c} = \{\text{Zhangsan, Lisi, Wangwu}\}$. Lastly, p_1 becomes the only true

proposition among the alternative propositions in (66) by the application of the exhaustivity operator *O*.

(65) $\|T'_1\| = \lambda x_i. \exists e[x_i \text{ did the homework in } e \text{ at } t_1]$

(66) $D_{e/c} = \{\text{Zhangsan, Lisi, Wangwu}\}$

$p_1: \exists e[\text{Zhangsan did the homework in } e \text{ at } t_1]$

$p_2: \exists e[\text{Lisi did the homework in } e \text{ at } t_1]$

$p_3: \exists e[\text{Wangwu did the homework in } e \text{ at } t_1]$

Different from the case of topic association, the exclusion in this case negates the existence of an event of Lisi's doing homework at t_1 , as it does for Wangwu. Therefore, at t_1 Zhangsan was the only one among the alternatives to perform the event described. A typical exclusive reading is thus derived.¹⁴

14. One reviewer wonders whether the various exclusive readings and the inclusive reading discussed in the paper rely on the presence of the adverb *ziji*. This is a valid question, since Liao's (2018) mechanism mainly makes use of alternative triggering and the covert exhaustivity operator *O* to derive the various readings discussed. As pointed out by the reviewer, it is reasonable to expect that other strategies such as focus or contrastive topic, which have been proposed to introduce alternatives in the literature, have similar semantic effect as the use of adverb *ziji*.

This question is definitely worthy of future exploration. For now, I would like to mention two points here. First, it is indeed possible to use other strategies to derive some of the readings discussed in the paper. For example, the second clause in both (i) and (ii) below can convey an anti-group reading and an anti-assistance reading respectively, via the use of a contrast construction.

(i) *Bushi na-yi-zu xie-le zuoye, (shi) Zhangsan xie-le zuoye.*

Not that-one-group write-PFV assignment, (be) Zhangsan write-PFV assignment
'It is not that that group has done the assignment. It is that Zhangsan has done the assignment.'

(ii) *Bushi Xiaoming gen mama banghao-le xiedai, shi Xiaoming banghao-le xiedai.*

Not Xiaoming with mother tie-PFV shoelace be Xiaoming tie-PFV shoelace
'It is not that Xiaoming tied the shoelaces with his mom. It is that Xiaoming tied the shoelaces (by himself).'

However, I doubt that other strategies for alternative triggering can be as powerful as adverbial *ziji* in deriving the various readings shown by the use of *ziji*. To prefer one strategy over another strategy is something commonly found in cross-linguistic studies of focus. This is clearly discussed in Zimmermann & Onea (2011). Their paper proposes that the common core of focus is the triggering of alternatives; however, to signal the existence of focus, languages can make use of different strategies, including prosodic, syntactic, and morphological ways, and different languages may use different strategies for focus marking. For example, while English uses accenting to signal focus, Chinese does not do so often. Even when Chinese *zhi* 'only' appears to associate with some item in its clause, the associated item often is not accented. Thus, if Liao (2018) and this paper are working in the right direction to link *ziji* to the triggering of various

The above process of deriving the exclusive reading of an intensifier is advantageous. Recall that in § 2.3, I argue that Gast's (2006) proposal, which derives the exclusion meaning from within the scope of the event quantifier, cannot derive the intended exclusive reading. Different from Gast's analysis, the current analysis applies the exhaustivity operator *O* at the highest position, hence scoping over the existential event quantifier in the above example. This is a crucial difference between the current analysis and Gast's analysis for exclusive intensifiers. And the paper shows that an intended exclusive meaning is derived where *O* applies at the highest position.

As for the relationship between inclusive and exclusive uses of intensifiers, the current analysis follows Gast (2006) to make the disguised inclusive use and the exclusive use of intensifiers correlate with the relative positions of intensifiers and the event binder *T*. Though similar to Gast's analysis in this respect, the current analysis as a revised model of Gast's is arguably more advantageous for the following reasons.

First, it is explicitly shown in this mechanism how an intensifier with the same underlying semantics derives an exclusive meaning and a seemingly inclusive meaning on the surface.

Second, the mechanism is also more consistent than Gast's, because *O* is applied to use up the evoked alternatives and to derive some sense of exclusion in all cases.

Finally, in the current analysis, a disguised inclusive reading is tied with the higher Topic' adjunction position of *ziji*. The key is that *ziji* in the Topic' adjunction position along with the *O* operator exclude other individuals from functioning as the topic of the sentence, instead of excluding them from performing the event described by the VP. So the syntax-semantics correlation of adverbial intensifiers emphasized in § 2.2 has a genuine explanation under the current mechanism. This is a major advantage of the proposal, especially when Gast's analysis does not seem to account for the relationship between the topic association and the so-called inclusive use of intensifiers.¹⁵

sorts of alternatives, further research could be done to compare this strategy with other possible strategies in Chinese, and to examine how Chinese is different from other languages in the uses of different focus strategies.

15. To my knowledge, only one previous study, namely Constantinou (2014), attempts to connect the topic association identified by Gast (2006) to the semantics of inclusive intensifiers in a substantial way. Constantinou claims that the property of topic association is to reflect one important semantic function of inclusive intensifiers: to signal a topic switch. One example is presented in (i), where the topic is switched from Bill to John in the dialogue, and inclusive *himself* is used in speaker B's utterance to signal the topic switch.

3.3 Two factors affecting the readings of Chinese adverbial *ziji*

The paper claims that the 'Topic' adjunction of *ziji* along with the application of the exhaustivity operator O derives an exclusive meaning over alternative topics for the comment asserted, and it is context which determines whether the event described holds exclusively or inclusively for the associate of *ziji*. Under such an analysis, one may wonder why the predication in sentence (42), namely the sentence *Zhangsan ziji xie-le zuoye* 'Zhangsan did the homework on his own/alone/of his own free will', holds exclusively but not inclusively for Zhangsan. To put it in another way, the question is: why does (42) not mean that Zhangsan himself also did the homework? As to be discussed below, the meaning restriction shown here is related to a property of additive particles, rather than intensifier *ziji*.

An additive particle like English *too* or Chinese *ye* 'also' does not simply trigger an existential presupposition that some entity distinct from the particle's associate holds for the predication in the context. In many cases, it is even required to be present when its presupposition is met in the context, which is first noted in Green (1968) for English, and illustrated in (67)–(69) below.

- (67) a. Jo had fish, and Mo did too.
 b. #Jo had fish, and Mo did. (Kaplan 1984: 510)

- (68) A: *Xiaomei kao-le dangao, yao-bu-yao gei Xiaohui yixie dangao?*
 Xiaomei bake-*PFV* cake, want-not-want give Xiaohui some cake
 'Xiaomei has baked a cake. Should we give Xiaohui some cake?'

-
- (i) A: Bill has raised three kids.
 B: John has himself raised three kids, and he said that it was hard.
 (Constantinou 2014: 109)

But there are two shortcomings in Constantinou's analysis. First, the signaling of a topic switch is assumed to be the function of inclusive intensifiers but not of exclusive intensifiers. Such an account obscures the relationship between inclusive and exclusive intensifiers. It is more like a polysemous analysis, which has been argued against by the current paper. Second, there are counterexamples fatal to Constantinou's claim, as pointed out in Liao (2017). (ii) is an example. In this dialogue, Zhangsan is the topic, and there is no topic switch. But speaker B's sentence still can take inclusive *ziji*. Constantinou's claim fails to account for the use of inclusive intensifiers in such cases.

- (ii) A: *Zhangsan keyi lai bangmang zhaogu Lisi de xiaohai ma?*
 Zhangsan can come help take.care Lisi of kid Q
 'Can Zhangsan come to help take care of Lisi's kids?'
 B: *Zhangsan ziji you xiaohai, ta mei banfa.*
 Zhangsan *ZIJI* have kid, he not way
 'Zhangsan has kids himself. He cannot.'

B: *Buyong, Xiaohui *(ye) kao-le dangao.*
 No.need, Xiaohui also bake-PFV cake
 ‘There is no need. Xiaohui has baked a cake *(, too).’

- (69) A: *Lisi juan-le qian.*
 Lisi donate-PFV money
 ‘Lisi donated money.’
 B: *Zhangsan ye juan-le qian.*
 Zhangsan also donate-PFV money
 ‘Zhangsan also donated money.’

Take (68) and (69) as examples. In (68), *ye* is required in B’s utterance, based on the contextual information that someone other than Xiaohua has baked a cake in the context. Likewise, in (69) *ye* must be present to convey an additive meaning. If *ye* is omitted in B’s utterance in (69), this utterance will change its meaning, meaning instead that Zhangsan – but not Lisi – donated money.¹⁶

16. Various proposals have attempted to account for the obligatory additivity effect, including Heim’s (1991) “Maximize Presupposition” principle (cf. Percus 2006), an implicature-related account (cf. Krifka 1999; Sæbø 2004; Bade 2016; Aravind & Hackl 2017), and an account related to a discourse similarity function (cf. Kaplan 1984; Amsili & Beyssade 2010; Winterstein 2011; Winterstein & Zeevat 2012; Amsili et al. 2016). Even, the obligatoriness of additivity seems to be a matter of degree (cf. Amsili et al. 2016), and multiple factors, including lexical properties, syntactic structure, and discourse status, come together to influence this effect. The complexity of this issue is illustrated below.

As observed by a reviewer, at first sight, the obligatoriness of Mandarin *ye* seems to link to a contrast between stative predicates (as in (63) and (71–72)) and non-stative predicates (as in (10–12) and (73–74)). These examples show that dynamic predicates require *ye* in an additive context, but stative ones do not. But dynamicity is not the only factor. It is pointed out in Amsili et al. (2016) that the presence of an English additive particle becomes more optional in a listing. Interestingly, Chinese *ye* behaves similarly with English additive particles, shown in sentence (i) below, where the predicate is dynamic.

- (i) *Lisi juan-le qian, Wangwu juan-le qian, haiyou Zhangsan (ye) juan-le*
 Lisi donate-PFV money, Wangwu donate-PFV money, still Zhangsan also donate-PFV
qian.
 money
 ‘Lisi donated money, Wangwu did it, and Zhangsan did it too.’

This shows that at least dynamicity and something linked to listing interact with each other in some mysterious way for the obligatory additivity effect in Chinese. Since this is a complicated issue awaiting further research and is a phenomenon independent of the study of intensifiers, the paper will not go into any further details, but interested readers are referred to the aforementioned papers.

For some mysterious reason, the use of *ye* can be optional in some other cases, as in (70), asserted in a context where someone has pens and might give pens to Zhangsan. The existential presupposition of *ye* is met in the context, which nevertheless does not require the presence of *ye*.

- (70) *Bu-yong gei Zhangsan bi, ta (ye) you bi.*
 Not-use give Zhangsan pen, he (also) have pen
 ‘There is no need to give Zhangsan pens. He (also) has pens.’

The property of *ye* discussed above is expected to affect the meanings of *ziji*-sentences. When *ziji* targets Topic’ for adjunction, it evokes the consideration of various possible topics, instead of various possible agents. Therefore the subsequent exhaustification will not rule out an inclusive scenario that the event described has held for someone in the context. However in such a context, the presence of *ye* is an issue. As revealed above, *ye* is required in some cases but optional in others. The behavior of *ye* revealed in (68)–(70) appears again when sentences take intensifier *ziji*, as displayed below.

First, to put emphasis on Zhangsan in an inclusive context, *ziji* can be used for (70), as presented in (71), regardless of whether *ye* appears. Another example is displayed in (72). Since *ye* is optional in (72a), the addition of *ziji* to the second clause, presented in (72b), does not require the presence of *ye* either.

- (71) *Bu-yong gei Zhangsan bi, ta ziji (ye) you bi.*
 Not-use give Zhangsan pen, he ZIJI (also) have pen
- (72) a. *Xiaohui mei kong zhaogu bie-ren de xiaohai ta (ye) you xiaohai.*
 Xiaohui not time take.care other-people of children, she (also) have children
 ‘Xiaohui doesn’t have time to take care of other people’s children. She (also) has children.’
- b. *...ta ziji (ye) you xiaohai.*
 she ZIJI (also) have children

The opposite holds when *ziji* is added to (68B) and (69B), displayed below in (73) and (74), respectively. In these cases, the presence of *ye* is obligatory for the inclusive contexts.

- (73) B: *Bu-yong, Xiaohui ziji *(ye) kao-le dangao.*
 Not-use, Xiaohui ZIJI also bake-PFV cake
 ‘There is no need. Xiaohui has *(also) baked a cake himself.’

- (74) B': *Zhangsan ziji ye juan-le qian.*
 Zhangsan ZIJI also donate-PFV money
 'Zhangsan also donated money himself.'

(Context: Zhangsan was the person in charge of the donation event.)

One crucial consequence of the additivity effect is this: when a *ziji*-sentence is heard out of the blue, the absence of *ye* can lead to an exclusive interpretation for some VPs. This can be seen in the contrast between (75) and (76). Out of the blue, (75) may sound a bit odd with the addition of the adverb *ziji*. The oddness will be accounted for later. Despite the oddness, (75) is fine for an inclusive construal. In contrast with (75), (76) has various exclusive interpretations but not an inclusive one. The reason for the lack of an inclusive construal by (76) is the following: if the money-donating predication holds for someone else in the context, *ye* must be added to this sentence, as discussed for (69). So the absence of *ye* results in (76) having only an exclusive meaning.

- (75) *Zhangsan ziji you xiaohai.*
 Zhangsan ZIJI have children
 'Zhangsan has children himself.'

- (76) *Zhangsan ziji juan-le qian.*
 Zhangsan ZIJI donate-PFV money
 'Zhangsan donated money himself/alone/in person/of his own free will.'

So, it should be clear that the contrast shown in (75)–(76) is not related to how *ziji* is used in the two sentences. Rather, the contrast is linked to the property of the additive particle *ye*. As shown in (72a) and (69), the VP *you xiaohai* 'have children' is able to tolerate the absence of an additive particle in inclusive situations, but the VP *juan qian* 'donate money' is not. In other words, this lexical difference results in the different readings of *ziji* in (75) and (76). And a similar account shall explain why sentence (42), *Zhangsan ziji xie-le zuoye* 'Zhangsan did the homework on his own/alone/of his own free will', without the presence of *ye*, cannot possibly mean that Zhangsan himself also did the homework.

After discussing how the presence of the additive particle *ye* may affect the surface meanings of *ziji*-sentences, this paper should also clarify how the current analysis deals with the affecting factor emphasized in Gast's (2006) analysis, namely the (non)-existence of multiple event tokens.

To get an inclusive reading is to make the event described hold for the intensifier's associate and at least one other person in the context. However for some VP descriptions, there can be only one event token. In Siemund's (2000) terminology, the VP then describes a "non-repeatable" event. *Eat up the hamburger* and *burn down this house*, for instance, clearly describe such events. The event

described by *post the letter* is also done only once in normal circumstances. If sentences take such predicates, it is unlikely for them to get an inclusive construal. The discussion of the examples in (77)–(78) below illustrates this idea. With the definite object NP *zhe-kuai dangao* ‘this cake’, the VP in (77) describes an event which is not repeatable. That is, when it holds that Xiaoming ate up a particular cake, the cake no longer existed after the consumption and could not be eaten up by another person. The impossibility in repeatability is confirmed by the problematic use of the additive particle *ye* in (78a). In contrast, when instead an indefinite object NP is used, as in (78b), the event described may hold inclusively for Xiaoming, and an inclusive construal becomes possible for the sentence.

- (77) *Xiaoming ziji chi-diao-le zhe-kuai dangao.*
 Xiaoming ZIJI eat-complete-PFV this-CLF cake
 ‘Xiaoming ate up this cake himself.’
- (78) a. **Xiaoming ziji ye chi-diao-le zhe-kuai dangao.*¹⁷
 Xiaoming ZIJI also eat-complete-PFV this-CLF cake
 b. *Xiaoming ziji ye chi-diao-le yi-kuai dangao.*
 Xiaoming ZIJI also eat-complete-PFV one-CLF cake

The above discussion tells us that in this matter, pragmatics plays a bigger role than syntax in determining the final readings of sentences with adverbial intensifiers. So, contrary to Gast’s (2006) treatment, the repeatability factor, i.e. the consideration of single or multiple event tokens, is not incorporated anywhere in the current syntax-semantics mechanism of intensifiers.

By discussing some influential factors, this section dispels some potential problems with the current proposal, clarifies how adverbial *ziji* interacts with other elements in its sentence, and shows that the one adverbial *ziji* analysis fits well with the empirical facts. Next, before reaching a conclusion, I provide further evidence in support of the one adverbial *ziji* analysis by arguing that adverbial *ziji* always carries the same presupposition, no matter which reading it conveys.

17. As noticed by a reviewer, in addition to the definiteness of object NPs, predicate types also play a role in determining the repeatability of VPs. For example, if the verbal predicate *chi-diao* ‘eat-complete’ in (78a) is replaced with *chi* ‘eat’, it becomes possible for this sentence to take *ye* ‘also’. The reason is that in Mandarin an activity verb such as *chi* and a definite object NP form a [–telic] VP, rather than a [+telic] VP (cf. Soh & Kuo 2005, among others). As the VP is [–telic], the cake denoted is not necessarily consumed completely when it holds that someone in the context has eaten some part of the cake, which make it possible for Xiaoming to eat a piece of the cake too.

3.4 Further evidence for the one adverbial *ziji* analysis: The presupposition of Chinese adverbial *ziji*

It should be noted that, cross-linguistically, intensifiers are used restrictively. For example, contra the traditional view that inclusive intensifiers have the same semantics with additive particles, Siemund (2000) presents examples like (79) to show that English inclusive intensifier *x-self* is used more restrictively than English additive particle *too*. He speculates that the intensifier *x-self* carries an additional meaning, which causes the problematic use of *himself* in (79b) on the one hand and affects the (un)acceptance of *himself* in (80) on the other.

- (79) a. Paul owns a house and Max owns a house too.
 b. ?Paul owns a house and Max owns a house himself.
- (80) a. *John was taller than Mary himself.
 b. John knows what it means to be taller than Mary, for he is taller than Mary himself. ((79–80) from Siemund 2000: 206)

In Gast (2006), the additional meaning is claimed to be a relevance presupposition about the alternatives evoked by the intensifier. Specifically, after an inclusive intensifier evokes a set of individuals as alternatives to its associate, a set of alternative propositions should be derived for consideration. For the propositions, the intensifier imposes a presupposition that its associate must hold some relationship to each of them. The idea is illustrated by (81).

- (81) a. Max snores himself.
 b. It is not TRUE that Max snores himself (but he hates it when others snore).
 (Gast 2006: 135)

(81a), standing alone, is an odd sentence. The way to improve it is to put it in a context where Max holds some relationship to the alternative propositions evoked, namely the snoring of other people. In (81b), as it is understood that the snoring of others is annoying for Max and makes him upset, the relevance presupposition is satisfied and thus the inclusive intensifier is used properly.

Interestingly, similar behavior is observed for the disguised inclusive use of Chinese adverbial *ziji*. For example, in the dialogue in (82), the use of *ziji* in speaker B's utterance is odd.

- (82) A: Lisi has pens.
 B: ??*Zhangsan ziji (ye) you bi.*
 Zhangsan *ZIJI* (also) have pen
 'Zhangsan has pens himself.'

Compare this example with (71). The context in (71) includes the information that “Zhangsan does not have to get pens from other people in the context”. In this context, the use of *ziji* is perfect. This example supports Gast’s (2006) proposal of the relevance presupposition for inclusive intensifiers. As Zhangsan may get pens from other people in the context, he is relevant to the propositions describing these people’s possession of pens.

By similar reasoning, the oddness of (75) can be accounted for as well. (75) by itself is an odd sentence. But it is perfectly fine if it is asserted in a context where Zhangsan is affected by someone’s having children. For example in (72), the *ziji*-sentence was uttered under the context that *ziji*’s associate was expected to take care of someone’s children. This satisfies the relevance presupposition of *ziji*. Therefore, *ziji* is added to (72b) with no problem.

In addition to the above cases, two other examples discussed in the previous section, namely the cake-baking example in (73) and the money-donating example in (74), all support the relevant presupposition proposal. The person Xiaohui in (73) is relevant to the cake-baking event of some other person in the context, as she might get some cake from that person. Likewise, Zhangsan in (74) is relevant to other people’s donating actions, because he is the person in charge of the donation event. If instead the contextual information were not provided, (73) and (74) would be odd with the addition of *ziji*.¹⁸

The discussion of the relevance presupposition not only explains the restrictive uses of *ziji* in the inclusive cases, it is also significant because the same presupposition is identified in Liao (2018) for exclusive *ziji*. Even though framed in different ways, the relevance presupposition given by Liao for exclusive *ziji* is exactly the same presupposition given by Gast for inclusive intensifiers. For example, Liao accounts for (83) by the relevance presupposition that the associate of

18. The relevance presupposition can also explain Siemund’s (2000) generalization for the uses of inclusive *ziji*. In Siemund (2000: 221), Siemund concludes that a sentence with an inclusive intensifier often has the following functions: to work as “a premise, reason, or explanation” for some proposition in the discourse context, “to decline an offer/request or to reject criticism”, to show empathy for something, or to make its associate appear knowledgeable in some sense. Note that the wide range of functions reflects the various ways the associate of an intensifier can be relevant to the alternative propositions. For example, the pen-giving case in (71) and the cake-baking case in (73) relate the associate of the intensifier with alternative propositions by the possibility that the associate may receive something from someone in the context. The assertion of (71) and (73) then expresses the declination of such an offer. As for (80b), the propositions of other people’s being taller than Mary seem to relate to John by making him a person with no empathy in this matter. Subsequently by emphasizing that John has the property, (80b) conveys some sort of empathy. Due to limitations of space, I shall not go further into other possible ways of establishing relevance and its effect on the various surface meanings of inclusive intensifiers.

exclusive *ziji* must hold some relationship to every alternative proposition evoked by *ziji*.

(83) a. [?]*Zhangsan ziji bei sha le.*

Zhangsan ZIJI BEI kill PRF
‘Zhangsan was killed himself.’

b. *Zhangsan de cisha jihua shibai, zuihou daozi Zhangsan ziji bei sha.*
Zhangsan of assassination plan fail, at.last cause Zhangsan ZIJI BEI
kill

kill
‘Zhangsan’s assassination plan failed, and therefore at last Zhangsan was killed himself.’ (Liao 2018: 37)

(83a) shows that it is not good to associate *ziji* with the subject NP of a passive sentence. But once the associate of *ziji* takes a causer role for the event, as suggested by the first clause of (83b), the use of *ziji* becomes acceptable. (83) is an example created based on Gast’s finding that an additional causer role helps an exclusive intensifier to associate with a non-agent associate. Liao argues that a causer role is helpful because a causer associate is relevant to the alternative propositions evoked, which describe various possible caused events. The satisfaction of the relevance presuppositions makes the use of adverbial *ziji* possible.

The above discussion shows that the relevance presupposition accounts for the restrictive uses of *ziji* in its disguised inclusive use and its exclusive use. With the same presupposition advanced, the one adverbial *ziji* analysis in the paper is further supported.

4. Conclusion

The paper claims that there is only one *ziji* for all its adverbial uses in Chinese. As adverbial *ziji* can adjoin to different X’ positions in the structure, it may get different surface meanings. Despite the surface differences, adverbial *ziji* always has the following semantics: it works as an identity function, evokes alternatives for consideration, and receives an exclusive meaning after the application of the covert exhaustivity operator O. Crucially in the disguised inclusive cases, *ziji* is claimed to adjoin to Topic’. By making the exclusion done to a set of alternative topics, this Topic’ adjunction analysis has the advantage of keeping a consistent exclusive meaning for adverbial *ziji*, without excluding the alternatives from having the property described by the VP in question. Thus, the Topic’ adjunction analysis makes a simple, unified account of *ziji* possible, and it explains why cross-linguistically intensifiers often develop these various uses.

While it is clear how syntax and semantics go hand in hand to derive the various surface readings of Chinese adverbial *ziji*, the whole story is far from complete. For example, English additive particles seem to co-occur with inclusive *x-self* in a more restrictive way. Furthermore, with the exception of French, adverbial intensifiers in the Romance languages have exclusive but not inclusive uses (Siemund 2000). What causes this restriction? Why is French different from the other Romance languages? These issues require further research to resolve these issues.

Abbreviations

CLF	classifier	PROG	progressive aspect
DP	Determiner Phrase	Q	question particle
Freq'	Frequency'	QNP	Quantificational Noun Phrase
Mod'	Modal'	Spec	Specifier
Neg'	Negation'	TopicP	Topic Phrase
NP	Noun Phrase	TP	Tense Phrase
PFV	perfective aspect	v'	verb'
PRF	perfect aspect	VP, vP	Verb Phrase

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