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# Topic-Comment Structure and the Interpretation of Null Subjects in Modern Chinese

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*Thank you to my parents and to my sister, who taught me how to leave the nest and fly.*

*Thank you to my friends, the best flock I could ever fly with.*

*Thank you to my two advisors – Chiara and Mara – for teaching me to fly higher and higher.*

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## Introduction

The present work stems and takes inspiration from the proposal put forth in recent works for the interpretation of null subjects (NSs) in consistent and partial NS languages, according to which the interpretation of a NS depends on a linking relation with a specific type of Topic, namely the Aboutness-Shift Topic (A-Topic), heading a Topic chain (cf. Frascarelli 2007 for Italian, Frascarelli 2017 for Romanian, Frascarelli 2018 for Finnish and Frascarelli & Jiménez-Fernández 2019 for certain varieties of Spanish).

Based on this cross-linguistic analysis, this work intends to verify whether it can be applied to a radical NS language, like Mandarin Chinese. In particular, the present investigation is aimed to check whether (and to what extent): (i) NSs in Chinese are interpreted as part of a topical chain headed by an A-Topic and (ii) different types of Topics are located in different positions in the left periphery of the sentence and are characterized by specific prosodic features, despite the fact that Chinese is a tone language.

The most influential proposals put forth in the literature will be illustrated in detail in Chapter 1, together with a comprehensive overview of the literature on the licensing and interpretation of NSs in Mandarin Chinese<sup>1</sup> and counterexamples will be considered, if relevant for the current discussion.

In particular, the first part of Chapter 1 is dedicated to the notion of Topic and the illustration of the taxonomy proposed in Frascarelli & Hinterhölzl (2007), so as to show the syntactic, prosodic and semantic properties of the three types of Topics assumed for analysis, namely, A-Topic, C(ontrastive)-Topic and G(iven)-Topic).

Subsequently, the results of the abovementioned works, will be compared with those regarding Mandarin Chinese and, when appropriate, the strengths and the limits of traditional analyses will be illustrated, in order to motivate and substantiate the need for a novel analysis, to be discussed in the Chapters 2 and 3.

In Chapter 2, the methodological approach for data analysis will be presented and the experimental test specifically designed will be illustrated. Information about informants and relevant results will be then analyzed. Through data and statistical analyses, it will be shown that NSs are interpreted as co-referent of the current A-Topic also in a radical NS language like Chinese. Moreover, it will be shown that the interpretation (and sentential acceptability) of NSs in Chinese cannot depend merely on a contextual analysis (*contra* Zheng 2001; Xu 2005; Song 2009; Yuan 2014), as specific structural constraints rule interpretive phenomena.

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<sup>1</sup> It should be noticed that in the present work the terms “Mandarin Chinese” and “Chinese” are used indistinctly.

Furthermore, in Chapter 2, the analysis of different types of adverbial clauses (namely, central and peripheral) will serve as a tool to investigate on the nature of (A-)Topics in Chinese.

In Chapter 3 it will be shown that a distinction between A-, C- and G-Topics must be assumed in Chinese as well, based on a prosodic and contextual analysis of 852 tokens, collected through an oral production experiment, originally designed for the present work, and from the analysis of two interviews streamed on the YouKu platform (the former to Ma Yun and the latter to Yue Yunpeng).

Furthermore, it will be shown that these three types of Topics are realized with different prosodic contours, according to their discourse function, despite Mandarin Chinese being a tone language. Specifically, the F0 contour of A- and G- Topics presents specificities independent of the tone of the relevant syllable of the Topic constituent, while that of C-Topics seems to strongly depend on the phonological properties of the rightmost syllable of the Topic under investigation. Also in this case, the results will be supported by statistical analyses.

In the second part of Chapter 3, the data collected will be analyzed in order to show the existence of a Topic hierarchy in Chinese, which is very similar (though not equal) to the one proposed for languages like Italian and English in Frascarelli (2018).

In the last chapter (Chapter 4), a linear recap of the data analyzed in Chapter 2 and 3 will be provided, so as to outline a clear-cut connection between the results of the acceptability experiment and those of the oral production experiment, integrated with those regarding the analysis of the two interviews to Ma Yun and Yue Yunpeng.

Finally, a comprehensive Acceptability Hierarchy will be proposed for NSs in Chinese, based on the outcome of the present work.

## 1. Topic and null subjects: an overview

In this chapter the notion of Information Structure (IS) will be shortly introduced, followed by different proposals put forth on the concept of Topic, presenting different examples and a specific hierarchy showing the existence of distinct types of Topics located in dedicated positions in the left periphery of the sentence.

In the second part of the present chapter, an analysis of the works dealing with the interpretation of Null Subjects (NSs) for different languages will be presented. Furthermore, when appropriate, the limits of the existing hypotheses will be shown, in order to account for the novel analysis that will be conducted in the present thesis.

### 1.1. Topic and Information Structure

Topic is one of the basic categories that makes up the so-called IS, together with Focus and Givenness (cf. Féry & Ishihara 2016). The notion of IS refers to the manner in which the speaker accommodates the information to be sent to the addressee, based on their (assumed) shared knowledge (cf. Chafe 1976), also known as Common Ground (CG) (cf. Stalnaker 1974, 2002).

Indeed, CG can be described as the knowledge shared between speaker and listener, which is constantly modified during communication and updated by the information provided by the speakers' utterances (Stalnaker 1974, Karttunen 1974, Lewis 1979). Nevertheless, as Krifka (2008) points out, the notion of IS is only restricted to a temporary state of mind of the addressee (cf. Chafe 1976) and does not include "reference to long-term background knowledge, choice of language style or level of politeness" (Krifka 2008: 244).

In addition, in Krifka (2008) it is also argued for a distinction between CG content and CG management. The former refers to the content of the current CG, while the latter refers to the way this content is developed in terms of the relevance to the discourse. For instance, a question can be considered a device used for CG management, since it does not typically add any factual information (hence it is not part of the CG content), but it rather indicates "information needs on the side of one participant that should be satisfied by a conversational move of the other" (cf. Krifka 2008: 246).

As said above, Topic is one of the basic notions of IS. Nevertheless, different definitions and approaches can be found in the relevant literature. For instance, Lambrecht (1994: 118) defines it as "the thing which the proposition expressed by the sentence is about". However, Lambrecht himself acknowledges that this definition might seem too narrow, insofar as it relates to the description of the grammatical subject which, as the scholar argues, "is not necessarily the Topic" and *vice-versa*, as the following examples show:

(1) Topic ≠ subject

a. [That kind of thing]<sub>Topic</sub>, [I]<sub>subject</sub> don't think I'll ever do. (Akaruese 2015: 153)

b. [Marco]<sub>Topic</sub>, [Anna]<sub>Subject</sub> *l'* *ha visto ieri.*  
Marco Anna 3SG.CL AUX.3SG see.PP yesterday  
'Marco, Anna saw him yesterday.'

c. [Na *yi ge dianying*]<sub>Topic</sub>, [wo *pengyou*]<sub>Subject</sub> *bu xihuan.*  
That one CLASS movie 1SG friend NEG like  
'That movie, my friend doesn't like.' (Abbiati 2008: 54)

(2) Topic = subject

a. [The children]<sub>Topic/Subject</sub> went to school. (Lambrecht 1994: 121)

b. [Marco]<sub>Topic/Subject</sub> *è andato al mare.*  
Marco AUX.3SG go.PP to-the see  
'Marco went to the beach.'

c. [Hao *xuesheng*]<sub>Topic</sub> *changchang zai tushuguan xuexi.*  
Good student often in library study  
'Good students often study in the library.' (Abbiati 2008: 54)

The examples above show that Topic and subject do not necessarily coincide: the sentential Topics in (1a-c) can be identified as the direct objects (DOs) of the relevant verbs, whereas in (2a-c) the topical constituents happen to be interpreted as the subjects of the following sentence.

Furthermore, from a semantic point of view, these Topics are connected with the argument structure of the verb with which they are related and, based on general assumptions, they should be co-indexed with a gap in the sentence (at least for languages like English and Chinese)<sup>2</sup>:

(1a') [That kind of thing,]<sub>Topic</sub> I don't think I'll ever do \_\_\_\_\_  
|\_\_\_\_\_|

---

<sup>2</sup> As for languages like Italian, the presence of clitic resumption (the clitic DP 'lo' in (1b)) excludes the presence of a DP in the same argument position. A syntactic analysis dealing with this issue will be offered in section §1.2.

(1c') [*Na yi ge dianying,*]<sub>Topic</sub> *wo pengyou bu xihuan* \_\_\_\_\_

However, not any Topic seems to behave the same way. According to Chafe (1976), in fact, there are certain types of Topics that are not part of the predicate-argument clause with which they are associated. These Topics are *scene-setting* expressions that provide a spatial, temporal or individual framework for the main predication to hold, defined by Chafe as Chinese style Topics.<sup>3</sup> As an illustration, consider the following examples:

(3) a. [The typical family today,]<sub>Topic</sub> the husband and the wife both work. (Deulofeu 2008: 218)

b. [*Al Carrefour*]<sub>Topic</sub> *i prezzi sono bassi.*  
 At-the Carrefour the prices COP low  
 Lit: 'At Carrefour, prices are low.'<sup>4</sup>

c. [*Shuiguo*]<sub>Topic</sub> *wo zui xihuan chi xiangjiao.*  
 Fruit 1SG most like eat banana  
 Lit: 'Fruit, I like eating most bananas.' (Chen 1996: 395)

None of the Topics illustrated in (3a-c) is part of the verb argument structure, and their role is, in fact, to set a framework for the main clause to hold (cf. Chafe 1976). For instance, (3a) implies that not any 'husbands and wives both works', but only those belonging to 'the typical family today'. Similarly, the meaning that the speaker intends to convey when uttering a sentence like the one in (3b) is that 'prices are low', but only 'at Carrefour'. Finally, in sentence (3c) the speaker introduces the framework 'fruit' to provide a setting for the associated clause to be interpreted.

Based on the various examples proposed above, we can thus argue that the use of the plural term Topics seems more appropriate than singular Topic when talking about this discourse category.

Indeed, many scholars consider more adequate to distinguish the aboutness type, shown in examples (1a-c) and (2a-c), from the frame-setting categories presented in (3a-c). For instance, in Lambrecht (1994) and Dik (1980) the authors use the term Topic for the former, whereas Chafe (1976)

<sup>3</sup>This type of Topic has several definition in the literature, such as Hanging non-clausal Topic (Deulofeu 2008), Dangling Topics (Shi 2000) and, Limiting Topic (Carella 2015), among others.

<sup>4</sup> Italian examples where the source is not cited are samples taken from Italian informants personally contacted to collaborate in the present analysis.

refers to it as English style Topic. As for the frame-setters, Lambrecht, Chafe and Dik use the terms Topic expression, Chinese style Topic and Theme, respectively.

However, according to the definition given in Krifka (2008: 265), a Topic is “an entity or set of entities under which the information expressed in the Comment constituent should be stored in the CG content”. This definition implies that a frame-setter cannot be considered a ‘proper’ Topic since it is not an ‘entity’. Assuming Krifka’s perspective the term frame-setter (FS) will be used in the present analysis in order to account for this crucial difference.

With regards to their position within the sentence, scholars agree that Topics (and FS expressions), usually appear in the left periphery, followed by a clause that predicates something about them, which can be called Comment (cf. Li and Thompson 1976, Abbiati 1998, Shi 2000, Krifka 2007, Badan 2020). Consequently, according to an IS terminology, this type of structure is called Topic-Comment Structure.

Hence, each sentence proposed in the examples above can be divided into two separate parts, namely the Topic and the Comment:

(1’’) a. [That kind of thing]<sub>Topic</sub> [I don’t think I’ll ever do.]<sub>Comment</sub>

b. [*Marco*]<sub>Topic</sub> [*Anna l’ha visto ieri.*]<sub>Comment</sub>

c. [*Na yi ge dianying*]<sub>Topic</sub> [*wo pengyou bu xihuan.*]<sub>Comment</sub>

(2’’) a. [The children]<sub>Topic</sub> [went to school.]<sub>Comment</sub>

b. [*Marco*]<sub>Topic</sub> [*è andato al mare.*]<sub>Comment</sub>

c. [*Hao xuesheng*]<sub>Topic</sub> [*changchang zai tushuguan xuexi.*]<sub>Comment</sub>

(3’) a. [The typical family today,]<sub>Frame</sub> [the husband and the wife both work.]<sub>Comment</sub>

b. [*Alla Carefour*]<sub>Frame</sub> [*i prezzi sono bassi.*]<sub>Comment</sub>

c. [*Shuigo,*]<sub>Frame</sub> [*wo zui xihuan chi xiangjiao.*]<sub>Comment</sub><sup>5</sup>

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<sup>5</sup> As examples (3a-c) show, the Comment does not provide information about the FS. This is the reason why we have decided not to call them Topics, differently from scholars like Chafe and Lambrecht. According to the framework assumed,

Nevertheless, a Topic can also follow the Comment it is associated with. Consider the following examples:

(4) a. [He is real smart,]<sub>Comment</sub> [John.]<sub>Topic</sub> (Kamada 2015: 221)

b. [*L' ho già preso,*]<sub>Comment</sub> [*il caffè,*]<sub>Topic</sub> *grazie.*  
 3SG.CL AUX.1SG already take.PP the coffee thanks  
 LIT: 'I have already had it, the coffee, thanks.'

c. [*zhe bu shi zuo cao,*]<sub>Comment</sub> [*zhe yinyue.*]<sub>Topic</sub>  
 this NEG be do exercise this music  
 LIT: 'This is not (for) doing exercise, this music.' (Adapted from Guo, 1999: 1111)

The syntactic analysis of right-dislocated Topics will be resumed in §1.2.2.

### 1.1.1 Topic and Topics

As for the number of Topics allowed in a sentence, Reinhart (1982) claims that a single Topic can only be realized in a sentence. However, many criticisms have been raised in this regard, since this proposal cannot account for the acceptability of sentences like (5) below, in which more than one Topic is realized within the same clause:

(5) [*Marco,*]<sub>Topic1</sub> [*la carne,*]<sub>Topic2</sub> [*non l' ha mica mangiata,*]<sub>Comment</sub>  
 Marco the meat NEG 3SG.CL AUX.3SG by chance eat.PP  
 [*la scorsa settimana*]<sub>Frame</sub> eh!  
 the previous week huh  
 Lit: 'Marco, the meat, he hasn't ate it, last week, huh!'

As is clear, in languages like Italian we can find different Topics in the left periphery (*Marco* and *la carne* in (5) above), both referring to the relevant Comment. In this respect, Lambrecht (1994) has suggested that what Reinhart might have referred to in her work is the pragmatic salience of a Topic over another one, rather than Topic vs. non-Topic expressions.

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a FS provides a 'scene/frame' for the Comment to hold, whereas information only refers to the Aboutness type Topic (cf. §1.1.2 below). If an overt Topic is not realized, the Comment refers to a phonetically null Topic (the possibility of silent Topics will be treated in §1.5.1).

To have a clearer understanding of this phenomenon, let us first consider the following excerpt from a conversation (Corpus Bonvino 2003, used in Frascarelli & Hinterözl 2007; hereafter, F&H), showing the possibility of multiple Topics within the same clause:

- (6) 1. *Era tutto molto nuovo nel senso che comunque [la lingua inglese]<sub>Topic1</sub> attraverso i programmi sul computer diciamo [...]*  
2. *comunque [l'inglese]<sub>Topic1</sub> risultava anche facendolo da solo più interessante [...]*  
3. *[io]<sub>Topic2</sub>, [inglese]<sub>Topic1</sub> non- premetto non l'avevo mai fatto.*
1. Everything was very new to me in the sense that I had never studied English through computer programs [...]
  2. and through self-learning English appeared more interesting to me [...]
  3. I must say that I had never studied English before.

According to the analysis proposed in F&H (2007), all the clauses in lines 1 and 2 can be assumed to be Comments of the Topic 'la lingua inglese' introduced in line 1 and proposed again in line 2 for Topic continuity. On the other hand, the Comment in line 3 refers to the newly introduced (shifting) Topic 'io', even though 'inglese' is still present in the sentence as background information. Therefore, we can say that what changes here is Topics salience, and not their 'value', in line with Lambrecht (1994).

In conclusion, the examples proposed provide evidence that it is possible to realize more than one Topic within the same sentence, and this possibility is plausibly explained by the fact that different Topics have different discourse-related roles and, as such, they can coexist in the same structure. As a matter of fact, the examples in the next paragraphs will show that different types of Topics exist (i.e., Aboutness-Shift Topic, Contrastive Topic, and Familiar/Given Topic). Evidence for the existence of a fine hierarchy of Topic constituents in the left periphery will be also presented, based on their discourse-related properties.

The first type of Topic we will deal with is the Aboutness-Shift-Topic (henceforth, A-Topic), a category proposed in F&H (2007) that can be associated to Givón's (1983: 8) definition as the "newly introduced, newly changed or newly returned to" entity, to which the Comment predicates something about (cf. Lambrecht 1994).

In this respect, consider (7) below. In this sentence two Topics are realized, but only the leftmost Topic (which is the A-Topic) is what the Comment is about and, using Lambrecht words, it might be considered as the most salient entity, whereas Topic<sub>2</sub> introduces a second background Topic, used to give further information to the interlocutors and favour the interpretation of the following Comment:

- (7) [*Anna*,]<sub>A-Topic</sub> [*la carne*,]<sub>Topic2</sub> [*la compra solo al Carrefour*.]<sub>Comment</sub>  
 Anna the meat 3SG.CL buy.3SG only at-the Carrefour  
 Lit: ‘As for Anna, the meat, (she) only buys it at the Carrefour.’

Nevertheless, the A-Topic is just one of the different types of Topics we can find in a sentence. Let us consider example (8) below, in which a case of Contrastive Topics (henceforth, C-Topic) is illustrated:

- (8) [*La carne*]<sub>C-Topic1</sub> *l’ ha cucinata Marco*,  
 The meat 3SG.CL AUX.3SG cook.PP Marco  
 [*il pesce*]<sub>C-Topic2</sub> *l’ ha cucinato Gianni*.  
 the fish 3SG.CL AUX.3SG cook.PP Gianni  
 ‘Marco cooked the meat, Gianni cooked the fish.’

As is shown, a C-Topic is an element that creates oppositional pairs with respect to other Topics (Kuno 1976, Büring 1999, F&H 2007), each of which can be followed by a relevant Comment. Furthermore, within the framework of alternative semantics (Büring 2003, Rooth 2016) sentences with C-Topics can be defined as answers to a question that is itself part of a set of alternative questions. Specifically, in Büring (2003) it is argued that a sentence like the one in (8) can be the answer to “Who cooked the meat?” and “Who cooked the fish?”, which both are a set of sub-questions derived from the super-question “Who cooked what?”.

As previously illustrated for A-Topics, a C-Topic can also combine with other types of Topics or with other constituents in the left periphery (like FSs). Consider sentence (9) below for evidence:

- (9) [*Anna*,]<sub>A-Topic</sub> [*all’ università*,]<sub>Frame</sub> [*l’ esame di storia*]<sub>C-Topic</sub>  
 Anna at-the university the exam of history  
*l’ ha passato brillantemente, [quello di arte],*<sub>C-Topic</sub> *invece,*  
 3SG.CL AUX.3SG pass.PP brilliantly that of art instead  
*non l’ ha proprio passato.*  
 NEG 3SG.CL AUX.3SG really pass.PP

Lit: ‘Anna, at university, the History exam, she passed it brilliantly, the one of art, instead, she didn’t pass it at all.’

In (9), we have an A-Topic, *Anna*, which is the entity about which something is predicated in the following Comments. Indeed, we can argue that who ‘passed the history exam, but did not pass the one of art’ is *Anna*, introduced at the beginning of the sentence. Moreover, the speaker sets the frame for the following Comments to hold: namely, *all’università*. Eventually, the speaker organizes the information structure using two C-Topics, namely *l’esame di storia* and *quello di arte*. Therefore, this example shows once again the possibility, for a language like Italian, to have more than one type of Topic and a frame-setter in the same sentence.<sup>6</sup>

So far, we have seen that the possible combinations include (i) A-Topic, (ii) C-Topic and (iii) FSs. In addition, in a sentence it is also possible to find what F&H (2007) call Familiar/Given Topic (henceforth, G-Topic). A G-Topic is a D(iscourse)-linked constituent used for Topic continuation, or for background information (cf. F&H 2007, Givón 1983, Pesetsky 1987), as the following example shows (from F&H 2007):

- (10) *La situazione è questa: l'insegnante come ho detto ai ragazzi è in maternità ha una gravidanza difficile e sta usufruendo di quella legge particolare della maternità anticipata per ora ha avuto un mese io penso che non tornerà però lei m'ha detto ah di non dirlo ancora ai ragazzi perché per motivi suoi-comunque io signora penso di chiudere l'anno [...] questo comunque io ai ragazzi non l'ho detto direttamente.*

‘This is the situation: the teacher, as I told students, is pregnant, she’s having a difficult pregnancy and she is now having benefit from a specific law that allows for an early maternity-leave. So far, I was given one month of teaching supply. I don’t think she is coming back this year, however she told me not to tell students, because- well, she has her reasons. However, I think I will keep the class till the end of the year [...] anyway I did not tell this fact to students directly.’

(F&H 2007: 88)

As is argued in F&H (2007) based on interface (syntax-prosody) evidence, in the sentence underlined in example (10) three types of Topics are combined, namely the A-Topic *questo*, the C-Topic *io* and the G-Topic *ai ragazzi*:

- (10’) [*questo*]<sub>A-Topic</sub> *comunque* [*io*]<sub>C-Topic</sub> [*ai ragazzi*]<sub>G-Topic</sub> *non l’ho detto direttamente.*

---

<sup>6</sup> The possibility of realizing multiple Topics is attested cross-linguistically. For instance, consider the following example from English:

(i) [My son,]<sub>A-Topic</sub> [beans]<sub>C-Topic</sub> he likes, but [peas]<sub>C-Topic</sub> he hates.

Hence, similar to example (9), the English speaker organizes the information-structure proposing an initial A-Topic for two Comments, each of which is preceded by a specific C-Topic.

The indirect object (IO) *ai ragazzi* is the background Topic of the conversation. As we can see, it is mentioned at the beginning of the text, but it is not proposed as ‘what the sentence is about’. Nevertheless, it is repeated at the end as a familiar element. As for the A-Topic *questo*, we can plausibly argue that it is a newly introduced (shifted) Topic, to which the following Comment *non l’ho mai detto* refers. Finally, the subject *io* represents a C-Topic, insofar as the speaker wants to specify that s/he is the person who ‘never said it to the students’, whereas this is clearly not the case of any other member of the salient set (cf. Bianchi & Frascarelli 2010, henceforth, B&F), that is to say any other person in that context who could have said *questo* (‘this fact’) to ‘the students’.

Having said that, consider again example (6, line 3), repeated below for convenience:

(6, line 3) [*io*,]<sub>Topic2</sub> [*inglese*,]<sub>Topic1</sub> *premetto non l’avevo mai fatto.*

‘I must say that I had never studied English before.’

According to the literature presented in this section, the Topic *inglese* in (6, line 3), is also a case of G-Topic, and specifically a background G-Topic. As a matter of fact, it is a D-Linked constituent, previously mentioned in the discourse.

To sum up, different types of Topics have been presented so far, which can co-occur since they play different discourse-related roles.

Furthermore, it should be underlined that more than one G-Topic can be present in the same sentence despite having the same discourse-related role, contrary to A- and C-Topics:

(11) a. \**[Marco]*<sub>A-Topic</sub> *[Antonio]*<sub>A-Topic</sub> [*non mangiano carne.*]<sub>Comment</sub>  
 Marco Antonio NEG eat-1SG.PR meat

‘Marco, Antonio, he does not eat meat.’

b. [*A dice: “Marco mi ha detto che ha preparato sia la carne che il pesce, ma in cucina non riesco a trovarli. Mi chiedo dove li abbia messi”.* B risponde:]

[A say: “Marco told me he cooked both meat and fish, but I can’t find them in the kitchen. I’m wondering where he put them”. B replies:]

\**[Marco]*<sub>A-Topic</sub> [*la carne*]<sub>C-Topic</sub> [*nel forno*]<sub>C-Topic</sub> [*l’ ha messa*]<sub>Comment</sub>  
 Marco the meat in-the oven 3SG.CL AUX.3SG put.PP

[*il pesce*]<sub>C-Topic</sub> [*nel frigo*]<sub>C-Topic</sub> [*l’ ha messo*]<sub>Comment</sub>  
 the fish in-the fridge 3SG.CL AUX.3SG put.PP

‘As for Marco, the meat, in the oven, he put; the fish, in the fridge, he put.’

- c. [*A e B stanno discutendo del fatto che Marco non viaggia mai, ma si vanta di sapere molte lingue, come l'inglese e il cinese. A chiede a B se Marco è fluente in inglese e cinese. B risponde:*]

[A and B are talking about the fact that Marco never travels, however he boasts of knowing many languages, like English and Chinese. A asks B whether Marco is fluent in English and Chinese. B replies:]

Diciamo	che	[ <i>Marco</i> ,] <sub>A-Topic</sub>	[ <i>di cinese</i> ,] <sub>G-Topic</sub>	[ <i>inglese</i> ,] <sub>G-Topic</sub>	<i>in generale</i>
say-1PL	that	Marco	of Chinese	English	in general
[ <i>di lingue straniere</i> ,] <sub>G-Topic</sub>	[ <i>non ne sa niente</i> ] <sub>Comment</sub>				
of languages foreign	NEG 3PL.CL	know.1SG.PR	nothing		

‘Let’s say that as for Chinese, English, generally speaking, as for foreign languages, Marco does not know anything about.’

As we can see, two A-Topics (11a) or two C-Topics (11b) cannot be realized in the left periphery of the same sentence, and this is consistent with their discourse-semantic import. Indeed, the A-Topic is what the Comment is about, hence it is coherent for one Comment to be the predicate of a single entity, thus excluding the possibility of multiple A-Topics (see F&H 2007).

As for the C-Topic, as previously stated, it is an element that creates oppositional pairs with respect to other Topics. This means that each C-Topic must be paired with a specific Comment (or the contrast would be nullified), independently of the number of C-Topics to be contrasted (cf. F&H 2007). Hence, a proper re-elaboration of sentence (11b) would be the one in (12), in which only one C-Topic is realized in each C-Domain:<sup>7</sup>

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<sup>7</sup> According to Generative tenets (from Chomsky 1981 onwards), the clause universally consists of three major phrases, namely, the Verb Phrase (VP), the Inflectional Phrase (IP), usually referred to as TP in the English literature, from Tense Phrase), and the Complementizer Phrase (CP), hierarchically organized as follows:

(i) [CP [TP [VP ]]]

According to standard assumptions, the VP is the layer in which *theta* assignment takes place; the IP/TP layer is responsible for the licensing of formal features such as case and agreement; the CP is the layer where illocutionary Force is encoded and discourse-related categories are hosted, as well as different Operator-like elements (*wh*-constituents, relative pronouns, quantifiers, etc.; cf. Rizzi 1997). The CP layer thus defines the C-Domain.

- (12) [*Marco*,]<sub>A-Topic</sub> [*la carne*]<sub>C-Topic</sub> [*l' ha messa nel forno*]<sub>Comment</sub>  
 Marco the meat 3SG.CL AUX.3SG put.PP in-the oven  
 [*il pesce*]<sub>C-Topic</sub> [*l' ha messo nel frigo.*]<sub>Comment</sub>  
 the fish 3SG.CL AUX.3SG put.PP in-the fridge  
 ‘As for Marco, the meat, he put in the oven; the fish, he put in the fridge.’

On the other hand, the possibility of having more than one G-Topic associated with the same Comment is consistent with the fact that “different elements can be part of the background information” or serve as continuing Topics (cf. F&H 2007: 97).

Similarly, also FS expressions can be iterated in the same sentence, as the following example shows:

- (13) [*L' anno scorso*,]<sub>Frame1</sub> [*a scuola*,]<sub>Frame2</sub> [*abbiamo studiato i romani.*]<sub>Comment</sub>  
 The year last at school AUX-3PL study-PP the Romans  
 ‘Last year, at school, we studied the (Ancient) Romans.’

Specifically, in (13) we have a time setter, *l'anno scorso*, and a space setter, *a scuola*. Since they set two different frameworks for the Comment to hold, they are not incompatible, or mutually exclusive, from a discourse-semantic viewpoint.

### 1.1.2. Hanging Topic and Left Dislocated Topic

In the literature treating IS categories, another relevant distinction concerns left-dislocated Topics (LD-Topic) and Hanging Topics (H-Topic).

According to many scholars (cf., among others, Benincà *et. al* 1988, Benincà 2001, Benincà & Poletto 2004, henceforth, B&P, Lopez 2016, Poletto & Bocci 2016, henceforth, P&B), an H-Topic is a bare DP that corresponds to a copy of a PP argument or adjunct in the sentence<sup>8</sup>, as the following example shows:

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<sup>8</sup> It should be noticed that an H-Topic does not always corresponds to an argument or an adjunct of the relevant predicate. As a matter of fact, it can even be only pragmatically related to the following clause, as it is shown in the following example from Italian (Adapted from P&B 2016: 643):

- (i) *Fiori, mi piacciono le camelie.*  
 Flowers, 1.SG.CL like.3PL the camelias  
 ‘As for flowers, I like camelias.’

- (14a) [**Mario**]<sub>H-Topic-j</sub>, *non darò più soldi [a quell' imbecille]<sub>j</sub>.*  
 Mario NEG give.FUT.1SG anymore money to that idiot  
 'Mario, I won't give more money to that idiot.' (Adapted from B&P 2004: 18)

Despite apparent similarities, LD-Topics and H-Topics have different syntactic and pragmatic properties. With regard to the former, H-Topics cannot be preceded by a preposition, as (14b) immediately shows, whereas prepositions can occur in front of an LD-Topic, as it shown in example (15) below:

- (14b). \**[a Mario]*<sub>H-Topic-j</sub>, *non darò più soldi [a quell' imbecille]<sub>j</sub>.*  
 to Mario NEG give.FUT.1SG anymore money to that idiot

- (15) [*Di Mario*]<sub>LD-Topic</sub>, *non ne parla mai nessuno.*  
 of Mario NEG (of)3SG.CL talk.3SG never nobody.  
 'Of Mario, nobody talks of him anymore.' (Adapted from B&P 2004: 17)

Furthermore, H-Topics can be resumed in the relevant clause either through a tonic pronoun or a full DP, as in the case of (14), in which the H-Topic 'Mario' is resumed by an epithet ('that idiot'), whereas the resumptive constituent of an LD-Topic can only be a clitic (like *ne* in (15); cf. B&P 2004, P&B 2016).

In addition, according to B&P (2004), there can be only a single H-Topic in each clause, while LD-Topics can be multiple and, when both an H-Topic and an LD-Topic are present, the former always precedes the latter. Evidence is provided in examples like (16) and (17) below. Specifically, (16a) is ungrammatical because *Gianni* and 'this book' are both H-Topics. On the contrary (16b) with two LD-Topics is perfectly fine. Similarly, the example in (17a) shows that when an H-Topic precedes an LD-Topic the sentence is grammatical, while an LD-Topic before an H-Topic is not acceptable:

- (16a) \**Gianni, questo libro, non ne hanno parlato a lui*  
 Gianni this book NEG (of)3SG.CL AUX.3PL speak.PP to him  
 LIT: 'Gianni, this book, they of-it haven't talked to him.'

(16b) *A Gianni, di questo libro, non glie-ne hanno mai parlato*  
 to Gianni of this book NEG 3SG.CL-(of)3SG.CL AUX.3PL never talk  
 LIT: ‘To Gianni, of this book, they to him of it haven’t ever talked.’

(Adapted from B&P 2004: 17)

(17°) *Giorgio, ai nostri amici, non parlo mai di lui.*  
 Giorgio to the 1PL friends NEG talk.1SG never of him  
 LIT: ‘Giorgio, to our friends, I never talk of him.’

(17b) *\*Ai nostri amici, Giorgio, non parlo mai di lui.*  
 To the 1PL friends Giorgio NEG talk.1SG never of him  
 LIT: ‘To our friends, Giorgio, I never talk of him.’

(Adapted from B&P 2004: 18)

Interestingly in Badan & Del Gobbo (2011) (henceforth, B&DG 2011), it is shown that a single H-Topic can be located in the left periphery of the sentence in Chinese as well, while multiple LD-Topics are allowed. Furthermore, H-Topics must precede LD-Topics, similar to Italian.

Considering that Chinese is a clitic-less language, in B&DG (2011) evidence is provided showing that H-Topics are always matched by a resumptive pronoun, whereas LD-Topics leave a gap. However, while in P&B (2016) constituents that are not grammatically connected with the following sentence are also considered H-Topics (see note 7 above), in B&DG (2011) H-Topics must have a grammatical connection to the rest of the sentence (as in (14) above), whereas Topics that are not connected with the following predicate are called Aboutness Topic (which should not be confused with F&H’s 2007 A-Topic). It is thus interesting to notice that B&DG’s Aboutness Topics are hierarchically higher than H-Topic and LD-Topics in Chinese.

As for their pragmatic properties, in P&B (2016) evidence is provided showing that there is no one-to-one correspondence between syntax and pragmatics. In fact, in the same work it is argued that (clitic) LD-Topics can be aboutness (in Reinhart’s 1981 terms) or given Topics. Nevertheless, H-Topics can only be aboutness Topics.

From this perspective, H-Topics seem to show similarities with F&H’s (2007) and Frascarelli’s (2007) A-Topic, since both H- and A- Topics are subject to an “only one” restriction; in addition, they both precedes G-Topics (since, according to the literature illustrated, G-Topics can be considered as a case of given LD-Topic; cf. Frascarelli 2007).

Nevertheless, according to Frascarelli's (2007) analysis, H- and A-Topics are two different entities that should not be confused. As a matter of fact, the corpus-based analysis conducted in Frascarelli (2007) shows that H-Topics (i) precede any other Topics (including A-Topics) "providing a sort of title", (ii) do not have a shifting function and thus (iii) cannot start a Topic chain, contrary to A-Topics (cf. Frascarelli 2007: 698).

In conclusion, in line with B&P (2004), in Frascarelli (2007) it is argued that H-Topics have distinct formal and discourse properties with respect to the A-Topic and are located in a higher position than A-Topics in the C-Domain (also in line with Rizzi 1997 and Benincà 2001).

## 1.2 The syntax of Topics in the left periphery

After exploring the literature illustrating the different types of Topics identified so far, let us focus on their syntactic properties, namely, their derivation and their position in the C-Domain.

Within the Generative Framework two main theories on Topics exist: Merge and Move (using a minimalist terminology, cf. Chomsky 1995). According to a movement approach, the Topic is base-generated in its argument position, and then moved to a node higher than the TP. In this respect, Rochemont (1989) proposes an adjunction to TP for Topic constituents:

(18)  $[_{CP} [C' [_{TP} \text{Topic}_i [_{TP} t_i]]]]$

Culicover (1991) proposes two possible landing sites based on the presence/absence of a focused constituent. Since a Topic must precede the Focus, it is argued that the former is moved to Spec,CP (19a). Nevertheless, the Topic is adjoined to TP when no focused constituents are present (19b):<sup>9</sup>

(19) a.  $[_{CP} [C' [_{TP} \text{Topic}_i [_{TP} t_i]]]]$   
 b.  $[_{CP} \text{Topic}_i [C' [_{PolP} \text{Focus} [_{Pol'} [_{TP} t_i]]]]]]$

However, some scholars exclude adjunction and propose movement to the Spec of a Topic Phrase projection (TopP) dominating the Focus Phrase (FocP) (cf. Kiss 1996):

(20)  $[_{\text{TopP}} \text{Topic}_i [_{\text{Top}'} [_{\text{FocP}} \text{Focus} [_{\text{Foc}'} [_{TP} t_i]]]]]]$

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<sup>9</sup> Specifically, Culicover (1991) locates the Focus in Polarity Phrase, a maximal projection immediately dominating TP.

On the contrary, other scholars argue that the Topic is merged in the Spec of a recursive CP node, and that it receives Case- and *phi*-features through coindexing with a resumptive pronoun or an empty category in argument position (cf. Svolacchia *et al.* 1995, Cinque 1999):

(21)  $[_{CP} \text{Topic}_i [_{C'} [_{CP} [_{C'} [_{TP} [_{T'} [_{VP} \text{cl}_i/[e]_i ]]]]]]]]$

As for Italian, in Rizzi's (1997) seminal work it is argued that the Topic is merged in argument position and then moved to the Spec of specific TopP projections in the left periphery of the sentence. Specifically, two Topic fields in the C-Domain of the sentence are proposed, one before and one after the FocP:

(22)  $[_{\text{TopP}} \text{Topic}^*_k [_{\text{FocP}} [_{\text{TopP}} \text{Topic}^*_k [_{TP} [_{VP} \text{tk}]]]]]$

The asterisks in (22) indicate that each TopP can be iterated. Indeed, in the co-occurrence of multiple Topics, free iteration of the TopP is assumed (cf. Rizzi, 1997).

According to this movement hypothesis, sentence (1c) repeated below, can be represented with the structure given in Figure 1.1<sup>10</sup>:

(1c)  $[Na\ yi\ ge\ dianying,]_{\text{Topic}}\ wo\ pengyou\ bu\ xihuan.$

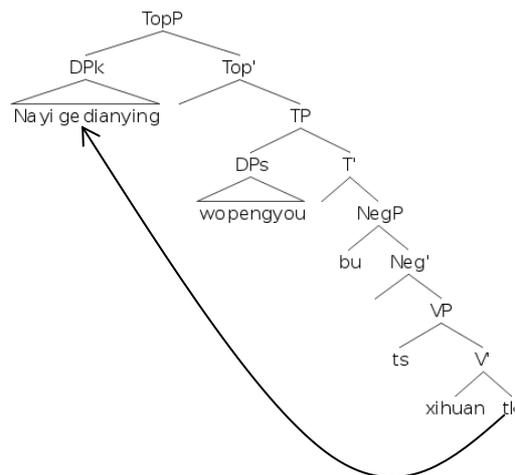


Figure 1.1: *Derivation of Topic*

<sup>10</sup> According to the Split-TP hypothesis (Pollock 1989), Negation Phrase (NegP) is one of the many functional categories between TP and VP that have been postulated (cf., among others, Ernst 1992, Zanuttini 2001). According to Ernst (1992), two available positions have been put forth for negative markers/adverbs: one in the head of Neg° and one in Spec,NegP. As for the negative marker *bu*, merged in Spec,NegP, I adopt Zhuang & Liu (2011)'s proposal.

According to a movement analysis, the Topic under exam in (1c) is merged in Compl,VP, as it is the <theme> of the verb *xihuan* ('to like'), and moved to the Spec,TopP in the C-Domain of the sentence.<sup>11</sup>

Nevertheless, this proposal cannot be adopted for Clitic Left Dislocation (CLLD) languages like Italian, in which clitic resumption is a major feature of Topicalization. In example (1b), proposed again below for convenience, the clitic *la* is the <patient> of the verb *vedere* ('to see') and, as it is a DO, it must be present and co-indexed with the Topic *Marco*:

(1b) [Marco]<sub>Topic</sub>, Anna *l'ha visto ieri*.

(1b') \**Marco, Anna ha visto ieri*.

As it is clear, if we adopt a movement approach to Topics in Italian, a violation of the *theta-criterion*. Indeed the-*theta* criterion enshrines what is specified in (23) below:

(23) THETA-CRITERION (Chomsky 1981: 35):

Each argument bears one and only one *theta*-role, and each *theta*-role is assigned to one and only one argument.

In other words, two DPs cannot share the same argument role (and structural position, namely, Compl,VP in this case). To keep a movement hypothesis valid, however, some scholars have proposed the so-called Big DP Hypothesis, according to which a Big DP can host both the clitic (in D°) and its associate DP (Torrego 1995, Uriagereka 1995, 2005, Belletti 1999, 2005, Cecchetto 2000, Papangeli 2000, among others). In this respect, two structures have been proposed: (a) with the *associate DP* in the Spec of the big DP (Figure 1.2), and (b) with the associate DP in the Compl of the big DP (Figure 1.3):

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<sup>11</sup> In this work we will use the VP notation, without entering the details of a vP-shell analysis (Larson 1988) since it is immaterial for the purposes of the present analysis, focused on the derivation and interpretation of Topics.

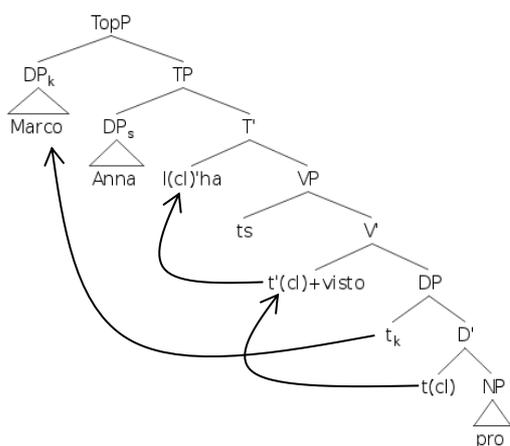


Figure 1.2: *DP in Spec, bigDP*

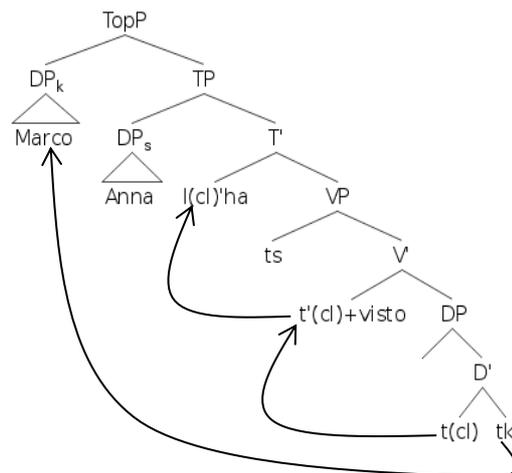


Figure 1.3: *DP in Compl, bigDP*

In either case, the clitic is the D head of the big DP, undergoing local head-to-head movement to its spell-out position incorporated in  $T^\circ$ .<sup>12</sup> As for the associate DP, it moves either from the Spec or from the Compl of the big DP to Spec, TopP.

However, in Frascarelli (2002) substantial evidence is provided showing that this hypothesis cannot hold for Italian. In this work, the author argues that, contrary to *wh*-constituents, Topic constituents do not show any of the typical Operator-variable effects, such as Weak Crossover (WCO) effects. Consider the following contrast:

<sup>12</sup> According to the Locality Principle, movement is cyclic. Hence, any movement operation must be restricted to the first available position (consistent with the type of the movement; cf. Frascarelli et al. 2012). Evidence for cyclic movement can be immediately provided in Italian by sentences showing participle agreement with clitics, but not with referential DPs:

- (i) *Marco ha mangiat-o la mel-a.*  
 Marco AUX.3SG eat-PP-M the apple-SG.F  
 ‘Marco ate the apple’
- (ii) *Marco l’ ha mangiat-a.*  
 Marco 3SG.CL AUX.3SG eat-PP-F  
 ‘Marco ate it’

When *la mela* is realized as a (feminine) referential DP sitting in Compl, VP, the participial verb is realized in the default masculine form *mangiat-o*. However, when the same referent is realized as a clitic pronoun, moving from  $D^\circ$  to  $V^\circ$ , it checks its [+feminine] gender feature with the verb, which, in turn, is realized in the feminine form *mangiat-a*.

(24) a. [*Gianni*<sub>k</sub>]<sub>A-Topic</sub> *sua*<sub>k</sub> *madre* *l'*<sub>k</sub> *ha* *sempre apprezzato*.  
 Gianni his mother 3SG.CL AUX.3SG always appreciated.PP  
 ‘(As for) Gianni, his mother always appreciated him.’ (Frascarelli 2002: 101)

b. [*GIANNI*]<sub>k</sub><sub>Focus</sub> *sua*<sub>i/\*k</sub> *madre* *ha* *sempre apprezzato*.  
 Gianni 3.SG.POSS mother AUX always appreciated.PP  
 ‘It’s Gianni that his/her mother has always appreciated.’

As is known, the WCO effect refers to the fact that when an Operator is fronted over a position containing a pronoun, the latter cannot be interpreted as a variable linked to the crossing Operator (cf. Postal, 1971). Since a sentence like (24b) shows that the focused DP *Gianni* cannot be co-referent with the possessive *sua*, we can conclude that Foci are subject to A'-movement in Italian and, as such, they are subject to WCO effects.

On the other hand, in (24a) the Topic DP *Gianni*, the DO clitic (*lo*) and the pronoun *sua* can be interpreted as co-referent by Italian speakers. As a consequence, the Topic *Gianni* cannot be considered a fronted constituent.

Additional evidence against a movement analysis is that a Topic constituent does not license Parasitic Gaps.<sup>13</sup> Consider the contrast between (25) and (26):

(25) [Which T-shirt]<sub>k</sub> did you buy <sub>t<sub>k</sub></sub>, [without even try <sub>e<sub>k</sub></sub>]?

(26) \*[*Quel libro*]<sub>k</sub> *l'* *ho* *cercato* <sub>t<sub>k</sub></sub>, [*senza trovare* <sub>e<sub>k</sub></sub>]  
 That book 3SG.CL AUX.1SG look for-PP without find  
 Lit: ‘That book, I looked for it, without finding.’ (Frascarelli 2002: 102)

In (25) the gap in the adjoined sentence ‘without finding’ is parasitic on the gap left by the wh-movement of ‘which T-shirt’, which A'-moves from its TP internal position to Spec,FocP in the left periphery of the sentence. On the contrary, in (26) the gap in the adjoined sentence cannot be interpreted and, consequently (26) is ungrammatical. This shows that the Topic *quel libro* is not subject to A'-movement. Since there are no variable-traces for the parasitic gap to depend on, the relevant sentence is not accepted by Italian speakers.

<sup>13</sup> A parasitic gap is an empty category whose interpretation depends on another empty category originated by Operator-movement (hence, by a variable-trace).

According to Frascarelli (2002), these results provide sound evidence that Topics are merged in Spec,Top in Italian, *contra* the big DP Hypothesis.<sup>14</sup>

Nevertheless, from a syntactic point of view, languages show different behaviors with regards to the derivation of Topics. As a matter of fact, the possibility to have a ‘mixed system’ has been proposed for languages like English (cf. B&F 2010)<sup>15</sup> and Chinese (cf. Huang et al 2009, B&DG 2011). In other words, variations can be present within the same language: some Topics move and some are merged in Spec,TopP, depending on their discourse-semantic properties. Consider the following contrast in (27) from Chinese:

(27) a. [*ziji de baba*]<sub>Topic</sub> *Zhang xiaojie hen zunzhong* <sub>t<sub>Topic</sub></sub>  
 self DE father Zhang Miss very respect  
 Lit: ‘Self’s father, Miss Zhang respect (him).’

b. \**[ziji de baba]*<sub>Topic</sub> *Zhang xiaojie hen zunzhong ta*<sub>=Topic</sub>  
 self DE father Zhang Miss very respect 3SG  
 Lit: ‘Self’s father, Miss Zhang respect him.’

According to Condition A of the Binding Theory (Chomsky, 1980), the anaphora *ziji* (‘self’) must be A-bounded (c-commanded<sup>16</sup>) in its Control Domain.<sup>17</sup> If the Topic *ziji de baba* in (27a) were merged in Topic position, it would not be c-commanded by any possible antecedent. However, this sentence shows reconstruction effects: the fronted constituent returns to its extraction site in Logic Form (LF) and this allows for the interpretation of the anaphora. In other words, even though *ziji* in Topic

<sup>14</sup> It should be noticed that in Frascarelli (2002) WCO effects and Parasitic Gap are not the only two tests used to investigate the nature of Topic in Italian. Additional diagnostics to distinguish between Merge and Move in Topic constructions are Reconstruction, Binding relations and Scope properties. These tests will be used in the following paragraphs in relation to the analysis of Chinese Topics.

<sup>15</sup> Based on scope and interpretive properties, in B&F (2010) it is shown that A-Topics in English are merged in Topic position (LD-Topics), whereas C-Topics are subject to A’-movement (Topicalization).

<sup>16</sup> C(ostituent)-command can be defined as follow (cf. Reinhart 1981: 605):

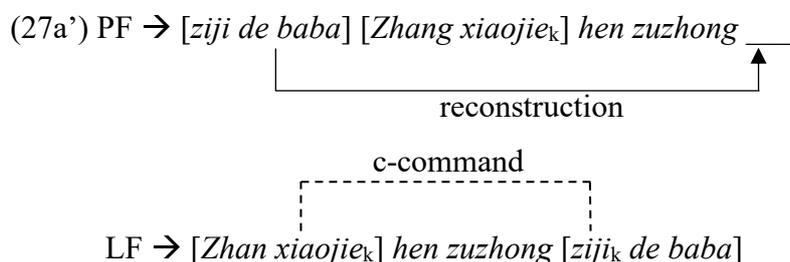
(i) A node A commands a node B if neither A nor B dominates the other and the S node most immediately dominating A also dominates B.

<sup>17</sup> As for the *Control Domain*, it can be defined as in (i) (cf. Manzini 1983, Nishigauchi 1984 (cited in Huang 1989: 193)):

(i)  $\alpha$  is the control domain for  $\beta$  iff it is the minimal category that satisfies both (a) and (b):

a.  $\alpha$  is the lowest S(entence) or NP that contains (i)  $\beta$  or (ii) the minimal maximal category containing  $\beta$ .  
 b.  $\alpha$  contains a subject accessible to  $\beta$ .

position (in Phonetic Form (PF)) is not c-commanded by the DP *Zhang xiaojie*, in LF “it can be placed back in the gap and interpreted accordingly” (cf. Huang *et al.*, 2009: 206):



On the other hand, the presence of a low-toned pronoun in DO position in (27b) indicates that the Topics must be merged in the left periphery, or a violation of the *Theta-Criterion* (23) would arise. As expected, since the Topic in (27b) is merged in Spec,TopP, the anaphora *ziji* cannot be c-commanded by the DP *Zhang xiaojie* (or any other referential DP) and the sentence is ungrammatical.

In conclusion, the analysis presented above shows that it is not possible to provide a uniform structural analysis for Topic constructions, both intra- and cross-linguistically. In CLLD languages Topics are merged in the C-Domain and associated with a clitic or null pronouns (*pro*) in the TP area. On the other hand, languages like English and Chinese present a ‘mixed system’ for different types of Topics. In other words, some Topics are derived by movement whereas others are merged in Topic position.

### 1.2.1 A hierarchy of the Topics in the left periphery of the sentence

If we consider the Topic types presented in §1.2, namely A-Topic, C-Topic and G-Topic, we could argue that the hierarchy in (22), proposed again below for convenience, is not specific since a generic TopP node cannot account for such substantial differences:

$$(22) \quad [_{\text{TopP}} \text{Topic}^*_k [_{\text{FocP}} [_{\text{TopP}} \text{Topic}^*_k [_{\text{TP}} [_{\text{VP}} t_k]]]]]]$$

Indeed, not only are Topics different for their discourse-related properties, they are also located in different positions in the C-Domain. To provide evidence for this claim, let us analyze a few examples adapted from F&H (2007: 96) in which Italian speakers realize multiple Topics in a sentence:

- (28) a. [*Io,*]<sub>A-Topic</sub> [*una cosa che ho trovato positiva,*]<sub>C-Topic</sub>  
 1SG one thing that AUX.3SG find.PP positive  
*è stata la comprensione.*  
 AUX.3SG be.PP the comprehension  
 ‘As for me, something that I found very positive was the comprehension part.’
- b. [*Io,*]<sub>A-Topic</sub> [*inglese,*]<sub>G-Topic</sub> *premetto non l’ avevo mai fatto.*  
 1SG English premise NEG 3SG.CL AUX.1SG never do.PP  
 ‘I must say that I never studied English before.’
- c. [*Io,*]<sub>C-Topic</sub> [*questa attività in particolare,*]<sub>G-Topic</sub> *non me la ricordo.*  
 1SG this activity in particular NEG 1SG.CL 3SG.CL remember.1SG  
 ‘I don’t remember that particular activity.’

As we can see from (28a-c), the A-Topic precedes both C- and G-Topics, and the C-Topic precedes the G-Topic. A novel and more inclusive hierarchy should thus be proposed:

- (29) A-Topic > C-Topic > G-Topic > TP

As for FS expression, Frascarelli (2017) argues that they are located below the A-Topic and above the C-Topic, based on evidence like the following contrast:

- (30) a. [*le voleur,*]<sub>A-Topic</sub> [*quand il est arrivé, ton chien*]<sub>Frame</sub>  
 the thief when 3SG AUX.3SG arrive.PP 3SG.POSS dog  
*eh bien il n’ a pas bronché.*  
 well 3SG NEG AUX.3SG not stumble.PP  
 ‘The thief, when your dog arrived, he didn’t budge.’

- b. <sup>??</sup>[When he is hungry]<sub>Frame</sub> [beans]<sub>C-Topic</sub> he can eat, but [peas]<sub>C-Topic</sub> he always rejects.

The hierarchy in (29) has been thus integrated as follows:

- (31) A-Topic > FS > C-Topic > G-Topic > TP

Nevertheless, it should be noticed that this hierarchy refers to FS and LD Topics (cf. Frascarelli 2007). Therefore, according to the literature illustrated above, regarding H-Topics, (in Benincà's 2001 and Poletto & Benincà's 2004 terms), the hierarchy in (31) should be further integrated as in (32), with H-Topic preceding all other Topics, following Frascarelli (2007) and in line with Rizzi (1997), Benincà (2001) and Poletto & Benincà (2004):

(32) H-Topic > A-Topic > FS > C-Topic > G-Topic > TP

### 1.2.2 Topics in the right periphery of the sentence: a comprehensive hierarchy

So far, we have analyzed different types of Topics, defining their syntactic properties when located in the left periphery of the sentence. Nevertheless, it is possible to have a Topic that follows its Comment, as illustrated in example (4a) above (reproposed below for convenience):

(4a) [He is real smart,]<sub>Comment</sub> [John]<sub>Topic</sub>

To account for right-hand Topics, some scholars have proposed an internal TopP above the VP node (cf. among others, Cecchetto 1999, Belletti 2001):

(33) [TP [TopP Topic\*<sub>k</sub> [VP t<sub>k</sub>]]]

Paul (2015) argues that an internal Topic position below the TP node should be also posited for Chinese, and she proposes the following example (here adapted) to support this claim:

(34) *Shei* [*bai mi dieyong*]<sub>Topic</sub> *you-le* *ge* *di-yi* ?  
 who 100 meters butterfly swim-PERF CLASS first  
 'Who won the first place in the 100 meters butterfly?'

Since Chinese is a *wh in situ* language, according to her analysis the interrogative pronoun *shei* ('who') is located in Spec,TP, serving as the subject of the sentence. Therefore, the Topic *bai mi dieyong* is in a TP internal position.

However, since the verb in Chinese does not move to T° (cf. Badan, 2020), to posit an internal Topic phrase above the VP node could not account for a sentence like the one in (4c) above, repeated below, in which the relevant Topic follows the verb and its object:

- (4c) *Zhe bu shi zuo cao, [zhe yinyue.]<sub>Topic</sub>*  
 this NEG be do exercise this music  
 LIT: ‘This is not (for) doing exercise, this music.’

The same condition applies for Italian with a sentence like the one in (35):

- (35) *Io te l'ho dato, [il tempo.]<sub>Topic</sub>*  
 1SG 2SG.CL 3SG.CL AUX.1SG give.PP the time  
 Lit: ‘I gave it to you, time’. (adapted from F&H, 2007: 101)

F&H (2007) propose that an additional low-Topic field should be rejected and that Topics are all merged/moved in the C-Domain. Hence it is argued that the right-hand G-Topic *il tempo* in (35) is merged in the left periphery, in the default position for G-Topics, and that its right-peripheral position is derived through TP-Inversion to Spec of the Ground Phrase (GP) (cf. Poletto & Pollock 2004).<sup>18</sup> As an illustration, consider the structure in Figure 1.4:

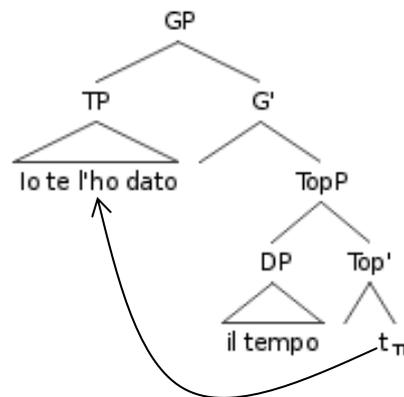


Figure 1.4: *right-peripheral Topic*

Based on this analysis, the same derivation can be proposed for sentence (4c) above:

- (4c) [<sub>GP</sub> [<sub>TP</sub> *zhe bu shi zuo cao*] [<sub>TopP</sub> [<sub>DP</sub> *zhe yinyue*] [<sub>Top' Top°</sub> [<sub>t<sub>TP</sub></sub>]]]]

In line with F&H (2007), the Topics in examples (4c) and (35) are both G-Topics. According to this data, the GP should be therefore located higher than the G-Topic but lower than the A-Topic.

<sup>18</sup> Notice that, after TP movement to Spec,GP, the Comment has scope over (c-command) the Topic, thus assuming a prominent informative role (cf. Frascarelli et al 2012).



### 1.3.1 Prosody of Topics in Italian and German

#### 1.3.1.1 The prosody of A-Topics in Italian and German

Based on the analysis of naturalistic data, in F&H (2007) it is shown that Italian and German realize A-Topics in different ways. Specifically, in Italian they are associated with an L\*+H contour, whereas in German with a L+H\* contour. As an illustration, let us consider the following PRAAT<sup>19</sup> images in Figure 1.5, for Italian, and Figure 1.6, for German:<sup>20</sup>

- (39) *L' ultima unit la sto facendo.*  
 The last unit 3SG.CL AUX.1.SG do.GER  
 'I'm working on the **last unit.**'

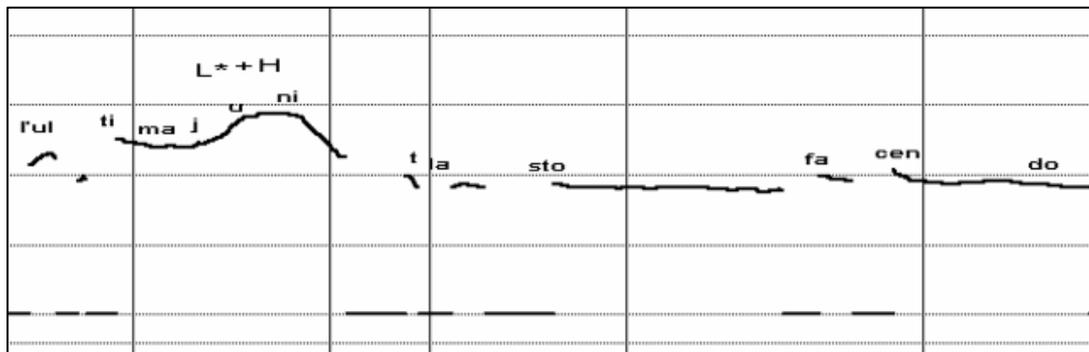


Figure 1.5: A-Topic in Italian

- (40) *Putin hat gemerkt...*  
 Putin AUX notice.PP  
 'Putin has realized...'

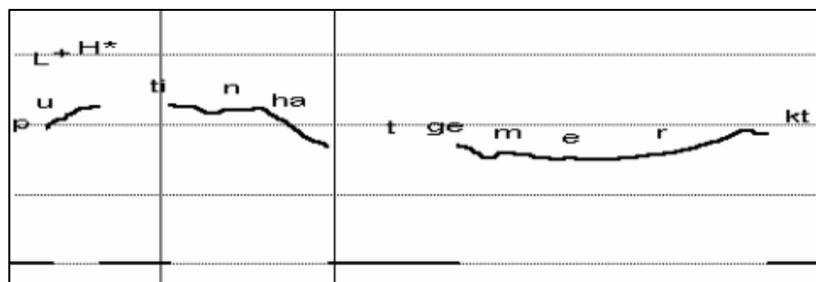


Figure 1.6: A-Topic in German

<sup>19</sup> PRAAT is a computer software for speech analysis in phonetics developed by Boersma and Weenik (2001).

<sup>20</sup> The PRAAT images presented in these sections for A-, C- and G-Topics in Italian and German are taken from F&H (2007).

As we can see, an A-Topic is signaled by a rise in the Fundamental Frequency (F0)<sup>21</sup> contour that is aligned with the tonic vowel in its full extension in both languages (even though differences with respect to the L part of the contour are attested).

### 1.3.1.2 The prosody of C-Topics in Italian and German

Similar to what we have observed for A-Topics in the previous section, C-Topics also have a different realization in Italian and German. Specifically, C-Topics in Italian are associated with an H\* contour (Figure 1.7), while in German with an L\*+H contour (Figure 1.8).

- (41) *In inglese ho avuto sempre problemi coi professori.*  
 in English AUX.1SG have.PP always problems with-the professors  
 ‘In English, I always had problems with professors.’

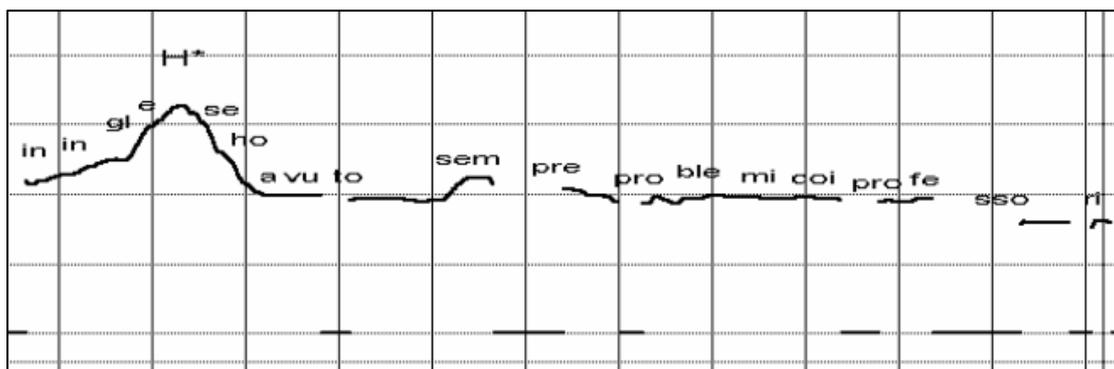


Figure 1.7: C-Topic in Italian

- (42) *ja hat Putin einen Fehler gemacht.*  
 Yes AUX Putin one.ACC mistake make.PP  
 ‘Yes, **Putin** has made a mistake.’

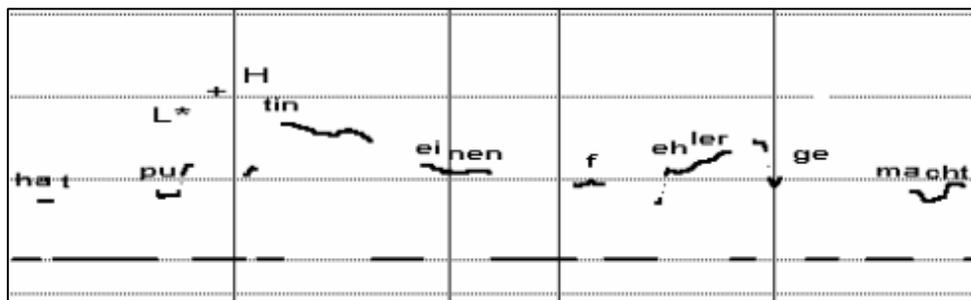


Figure 1.8: C-Topic in German

<sup>21</sup> The F0 is the frequency at which vocal chords vibrate in voiced sounds (cf. Li & Jain 2009).

### 1.3.1.3 The prosody of G-Topics in Italian and German

In both Italian and German, G-Topics are associated with an L\* contour aligned with the tonic vowel. As an illustration, consider Figure 1.9, for Italian, and Figure 1.10, for German:

- (43) *Non riesco a dar-me-la da sola la conferma.*  
 NEG can to give-1SG.CL-3SG-CL alone the check  
 ‘I cannot make **this check** on my own.’



Figure 1.9: *G-Topic in Italian*

- (44) *auch wenn die Norweger jetzt was anderes sagen.*  
 even if the Norwegians now something else say  
 ‘Even if **the Norwegians** say something different now.’

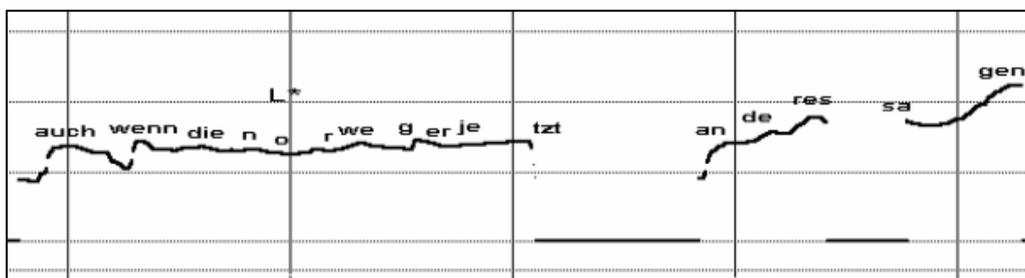


Figure 1.10: *G-Topic in German*

### 1.3.1.4 The prosody of *frame-setters* in Italian

As for FSs in Italian, Carella (2015) identifies two different prosodic contours, depending on their position in the sentence. When the FS precedes the Comment, it presents a H\* contour (like C-Topics), whereas it is associated with an L\* contour when it follows its Comment, like G-Topics. As an illustration, consider Figures 1.11 and 1.12 below:<sup>22</sup>

<sup>22</sup> All the examples and Figures regarding the prosody of FS expressions are taken from Carella, 2015 (glosses are mine).

- (45) *La settimana prima* avevamo avuto un' intervista con uno.  
 the week before AUX.1PL.IMPERF have.PP one interview with one  
 'The week before, we've had an interview with a guy.'

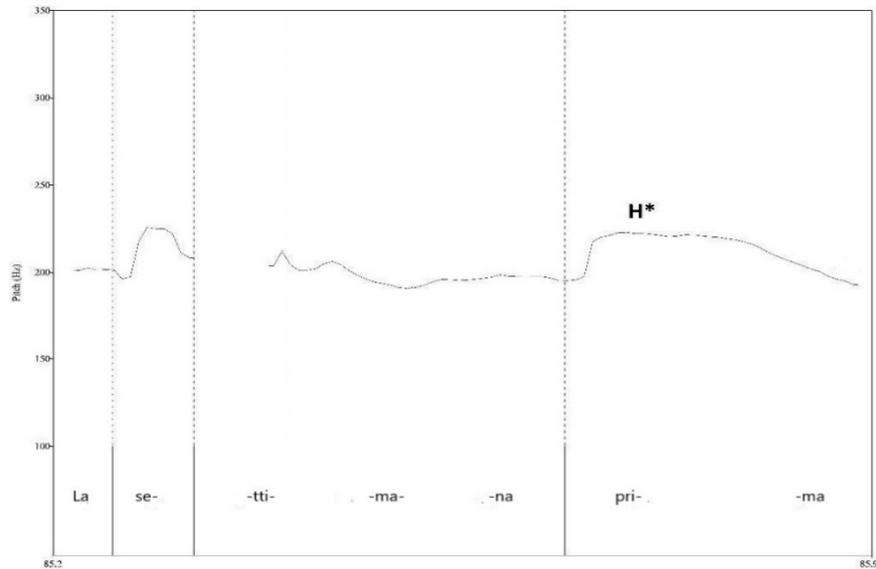


Figure 1.11: *Left dislocated FS*

- (46) *M'era* presa un po' paura **quella sera**.  
 1SG.CL AUX.3SG.IMPERF take.PP a bit fear that night  
 'I was a little bit scared **that night**.'

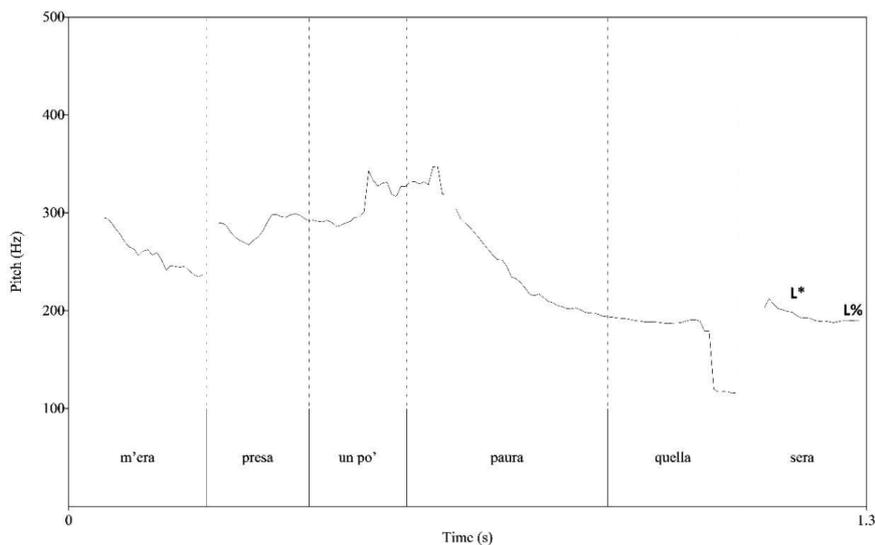


Figure 1.12: *Right dislocated FS*

Prosodic data thus seem to confirm that a right-hand FS is realized (and interpreted) as background G-Topic and, as such, it presents its typical low-toned contour (cf. Pierrehumbert 1980)

### 1.3.2 The prosody of Topic(s) in Chinese

Differently from Italian and German, Chinese is a tone language; hence the pitch accent is used to distinguish lexical or grammatical meaning.

According to Chao (1968) notation, the four tones of Chinese can be represented as follows:

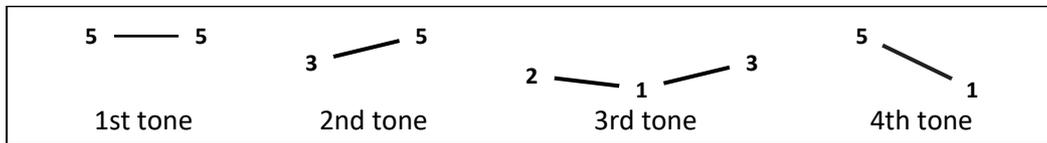


Figure 1.13: *Tones of Mandarin Chinese*

As illustrated in Figure 1.13, each tone has its specific prosodic contour. Namely, the first is a high tone, the second is a high-raising tone, the third is low falling-raising and the fourth tone has a falling contour (cf. Lee 2002).

According to its pitch, each syllable conveys a different meaning. As evidence, consider the following examples:

- (47) mā (1<sup>st</sup> tone)    ≠    má (2<sup>nd</sup> tone)    ≠    mǎ (3<sup>rd</sup> tone)    ≠    mà (4<sup>th</sup> tone)  
          mother                    hemp                    horse                    scold

As we can see, when the syllable *ma* is realized with a high pitch tone, it means ‘mother’. On the other hand, when it exhibits a raising contour, it means ‘hemp’, and so on.

In addition to the four tones above mentioned, Chinese is also equipped with a “neutral” tone which, like the others, can affect the meaning of a syllable/word. For instance, *dōngxī* means ‘East-West’, whereas *dōngxī* (with the second syllable realized with a neutral contour) means ‘thing’.<sup>23</sup>

Nevertheless, different scholars (cf. among others, Levow 2004) claim that intonational cues in Chinese also provide significant contrasts for an intonation-based analysis, despite the fact that pitch contour is used to establish lexical meaning (cf. Levow 2004). As a matter of fact, the results of Wang & Xu’s (2011) experiment show that Topics (and Foci), in Chinese, specify global pitch ranges rather than local F0 contours.<sup>24</sup> In this regard, a sentence initial Topic raises the initial pitch register,

<sup>23</sup> Considering this peculiarity of Mandarin Chinese, many prosodic studies have focused on Topic duration and boundaries. For instance, in Zhang (2013) and Chen (2009) it is argued that the Topic in Chinese is realized as an independent unit, signaled by a pause before its Comment.

<sup>24</sup> In their experiment, the authors asked 6 CNSs to read short and simple dialogical texts, aimed to identify the prosodic properties of Topic and Focus constituents in initial position.

whereas the pitch of the following words drops gradually. As an illustration, consider the images in the following Figure:

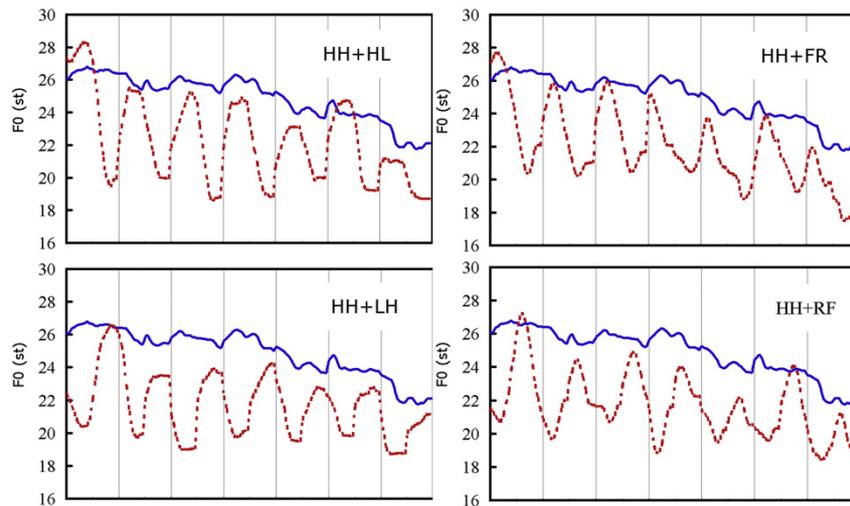


Figure 1.14: *Initial-sentence Topic in Chinese* (Wang & Xu 2010: 604)

As we can see, different tonal combinations have been analyzed, and in all cases the sentence-initial Topics present a higher pitch than the words it precedes.<sup>25</sup> In addition, Wang & Xu (2011) showed that neither contrastiveness nor newness seem to exhibit clear F0 manifestations.

Nevertheless, Pan (2015) argues that a Topic must be stressed when syntax fails to mark contrastiveness. Consider the following contrast between (48) and (49) (adapted from Pan 2015: 203):

(48) [Hali Bote]<sub>A-Topic</sub> wo kan guo.  
 Harry Potter 1SG read EXP  
 ‘As for Harry Potter, I have read it.’

(49) [**Hali Bote**]<sub>C-Topic</sub> wo kan guo.  
 Harry Potter 1SG watch EXP  
 ‘**Harry Potter**, I have read, (The Lord of the Rings, I have not read yet.)’

<sup>25</sup> As for the tone letters used in Wang & Xu (2010), H corresponds to 1<sup>st</sup> tone; R to 2<sup>nd</sup> tone; L to 3<sup>rd</sup> tone; F to 4<sup>th</sup> tone. In their experiment they tested disyllabic tonal constituents, depending on 5 tones combinations, namely: HH (1<sup>st</sup> tone + 1<sup>st</sup> tone); HL (1<sup>st</sup> tone + 3<sup>rd</sup> tone); LH (3<sup>rd</sup> tone + 1<sup>st</sup> tone); FR (4<sup>th</sup> tone + 2<sup>nd</sup> tone); RF (2<sup>nd</sup> tone + 4<sup>th</sup> tone).

In such cases, syntax seems to fail in marking contrastiveness, since both the A-Topic and the ‘orphan’ C-Topic<sup>26</sup> sit in sentence-initial position and no marker is realized. Therefore, according to Pan (2015), the relevant Topic must be stressed in a specific way to be interpreted as a C-Topic. However, the notion of ‘stress’ is not specified in Pan’s work, hence its phonetic properties remain unclear for Chinese (for instance, no details on volume or duration are provided).

In addition, one of the main problems of the analyses illustrated above is that no distinction has been made between different types of Topics, apart from contrastive and non-contrastive ones, which, however, do not exhaust the different Topic categories illustrated in §1.1.1.

Furthermore, it should be noticed that Lenow’s (2004) work only seems to take into consideration right-hand Topics. In particular, based on an automatic prosody-based Topic segmentation of texts from Chinese broadcast news, Lenow (2004) noticed that a final-sentence Topic exhibits highly significant decrease in pitch and intensity, independent of the lexical tones.

To sum up, the prosodic analyses conducted on Chinese so far treat the Topic as an ‘entity’ that is different from the Comment, and a distinction is sometimes assumed between contrastive vs. non-contrastive Topical constituents. Hence, it can be concluded that a fine-grained information-structural prosodic analysis has been not conducted yet on Chinese.

#### **1.4 The licensing of null subjects: a general overview**

After exploring the literature regarding the discourse-related role, and the formal features of Topics, the licensing and interpretation of null subjects (NSs) in Italian and Chinese will be treated in this section, since it will serve as a starting point for the proposal to be put forth in §2.

The original formulation of the NS parameter (Perlmutter 1971) captured the empirical observation that some languages (like Italian and Spanish) could leave definite, referential, pronominal subject unexpressed, whereas other could not (like English). The study of NSs is a major issue for linguistic research since the 80’s, when evidence was provided for their correlations with a number of other syntactic phenomena. In particular, in Rizzi (1982) it has been shown that NSs can be correlated with the following properties (cf. also Chomsky & Lasnik 1977, Taraldsen 1978, Kayne 1980, Jaeggli 1982, Safir 1985, Jaeggli & Safir 1989, Roberts & Holmberg 2010):

- (i) free subject inversion;
- (ii) apparent absence of that-trace effects;

---

<sup>26</sup> Like in (10’) above, an ‘orphan’ C-Topics is a type of contrastive constituent which is not realized in pair with other C-Topics. However, according to Büring (2003) and B&F (2010) such an ‘orphan’ C-Topic implies that the predicate holds only for the entity denoted by the relevant C-Topic and not for any other member of the salient set.

(iii) rich agreement inflection on finite verbs.

The property given in (iii) has been in fact outlined in many traditional grammars, in which it is often claimed that the possibility for a given language to license pronominal NSs is tightly linked to the presence of a distinction between verb persons (other than on pronouns) (cf. Alexiadou & Anagnostopoulou 1998, Biberauer et al. 2010). Consider for instance the following examples from Italian, in which the present indicative of the Italian verb *bere* ('to drink') is presented:

- |                       |              |                    |                  |
|-----------------------|--------------|--------------------|------------------|
| (50) a. ( <i>Io</i> ) | <i>bev-o</i> | d. ( <i>Noi</i> )  | <i>bev-iamo</i>  |
| 1SG                   | drink-1SG    | 3PL                | drink-3PL        |
| 'I drink'             |              | 'We drink'         |                  |
|                       |              |                    |                  |
| b. ( <i>Tu</i> )      | <i>bev-i</i> | e. ( <i>Voi</i> )  | <i>bev-ete</i>   |
| 2SG                   | drink-2SG    | 2PL                | drink-2PL        |
| 'You drink'           |              | 'You drink'        |                  |
|                       |              |                    |                  |
| c. ( <i>Egli</i> )    | <i>bev-e</i> | f. ( <i>Essi</i> ) | <i>bev-ovono</i> |
| 3SG                   | drink-3SG    | 3PL                | drink-3PL        |
| 'He/she drinks'       |              | 'They drink'       |                  |

According to Roberts & Holmberg (2010), cases like (50) are acceptable (and interpretable) either with or without an overt pronoun because the person *phi*-features are marked on both the subject and the verb. Therefore, it is not surprising that the possibility of realizing NSs in a given language has been generally attributed to the pronominal character of its agreement morphology and its 'rich' inflectional system (see, among others, Chomsky 1981; Rizzi 1982).

In this regard, Rizzi (1986: 519-520) proposes the Licensing Conditions given in (51):

(51) **pro LICENSING CONDITION**

a. FORMAL LICENSING

pro is governed by X°

b. INTERPRETATION

let X° be the licensing Head of an occurrence of pro: then pro has the grammatical specification of the features on X° co-indexed with it.

According to this condition, the formal and the content licensers coincide and, specifically, it is generally assumed to be the inflectional AgrS° node.<sup>27</sup> Consider Figure 1.15 for a graphic representation:

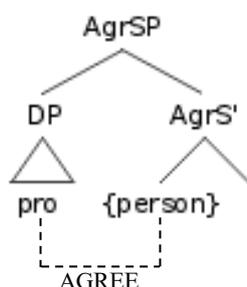


Figure 1.15: *pro* licensing condition

However, this proposal cannot explain, on the one hand, the lack of NS properties in languages with rich agreement (like German) and, on the other, the possibility of licensing NSs in languages like Chinese, which does not realize either inflection (Agr) or tense (cf. among others, Huang 1989; Griffin 2003; Badan 2020). As an illustration, consider the following examples:

- |  |  |
|--|--|
| <p>(52) a. (Wo) <i>he</i><br/>1SG drink<br/>'I drink'</p>  | <p>d. (Women) <i>he</i><br/>3PL drink<br/>'We drink'</p>   |
| <p>b. (Ni) <i>he</i><br/>2SG drink<br/>'You drink'</p>     | <p>e. (Nimen) <i>he</i><br/>2PL drink<br/>'You drink'</p>  |
| <p>c. (Ta) <i>he</i><br/>3SG drink<br/>'He/she drinks'</p> | <p>f. (Tamen) <i>he</i><br/>3PL drink<br/>'They drink'</p> |

---

<sup>27</sup> According to the Split-TP hypothesis, Cinque (1999) assumes AgrSP as the functional projection in which subject agreement is encoded in tensed sentences (cf. also Chomsky 1991, 1993, Belletti & Rizzi 1996; Cinque, 2002, Pollock 1989). In languages with a 'poor' inflectional system, the subject position is instead assumed to be Spec,TP in the literature, in line with Chomsky (2004, 2005).

As the glosses show, the verb *he* ('drink') does not realize any [+ pronominal] feature. Nevertheless, Chinese allows subjects (and objects) to be silent (cf. Huang 1989; Zheng 2001; Xu 2005; Neeleman & Szendrői 2007, 2008; Song 2009; Biberauer et al 2010; Yuan 2014):

- (52) a. (Wo) *he*  
           1SG   drink  
           'I drink'

According to Rizzi (1986), a language with no Agr or, more in general, which does not overtly realize *phi*-features, can freely license referential *pro*. This proposal is accepted by many scholars, (among others, Biberauer 2010, Saito 2007), who argue that the absence of overt agreement plays a crucial role in licensing of null arguments in radical NSLs. Specifically, Saito (2007) proposes an implicit grammatical mechanism that allows for the realization of null copies of discourse-related entities in argument position. This mechanism relies on the absence of morphological triggers that do not compel a pronoun to be overtly realized. In other words, since in a language without Agr there are no means to show the AGREE relation between a verb and the relevant pronoun, pronouns can be left unexpressed.

Tomioka (2003: 336), proposes that NSs in radical NSLs are “simply the result of NP-Deletion/NP- Ellipsis without determiner stranding”. Similarly, Neeleman & Szendrői (2007, 2008; henceforth N&S) propose a contextual free KP-deletion<sup>28</sup> based on pronouns’ morphology. According to their work, every radical NSL presents a pronominal system with agglutinative morphology for case, number or other specific features;<sup>29</sup> when a KP is [+pronominal] and [-anaphoric] it can be null (as is shown in examples (47a-f) above). This rule can be formulated as in (53):

- (53) KP [+p; -a] = Ø

---

<sup>28</sup> In N&S’ (2007, 2008) proposal an NP is dominated by a DP which, in turn, is dominated by a KP (Case Phrase).

<sup>29</sup> Indeed, Chinese’s pronominal system is agglutinative for number:

- (i) *Ta*       → *ta-men*  
       3.SG       3-PL  
       He/she → They

As a matter of fact, according to N&S (2008), it is not possible to drop a [+anaphoric] pronoun without ‘loosing’ a reflexive reading. Indeed, the following example from Japanese (adapted from N&S 2008: 17) shows that the reflexive interpretation would not be possible without *zibuno*.<sup>30</sup>:

- (54) *Taroo-ga<sub>i</sub>        \*(zibun-o<sub>i</sub>)    semeta.*  
 Taro-NOM        self-ACC        blamed  
 ‘Taro blamed himself.’

However, this proposal does not account for the possibility of a silent anaphoric subject in Chinese, even though it keeps its reflexive interpretation. As an evidence, consider the example below:

- (55) *Zhangsan<sub>i</sub>    shuo    pro/ziji<sub>i</sub>    yao    qu    jie        ta        qizi.*  
 Zhangsan    say    pro/self<sub>i</sub>    have    go    pick up    3SG    wife  
 ‘Zhangsan said he has to go himself<sub>i</sub> and pick up his wife.’

According to the Chinese native speakers (CNSs) contacted as informants, this sentence would be acceptable independently of the overt/covert status of the anaphoric embedded DP (*pro/ziji*) and, in both cases the person ‘who has to go and pick his wife’ is *Zhangsan*.<sup>31</sup> Hence, N&S (2008) proposal is apparently challenged by examples like (55) above.

To sum up, despite differences, several scholars seem to agree that the possibility of licensing NSs in a given language is connected with its inflectional verb system. That is to say, NSs are allowed in languages with either ‘rich’ or ‘no’ inflection. As a matter of fact, a language with a poor agreement system like English does not license NSs in tensed sentences (cf. Holmberg 2010), as the following examples show:

- (56) \*speaks English.

---

<sup>30</sup> As a matter of fact, according to a few Japanese informants (p.c.), this sentence can be considered grammatical without *zibuno* and acceptable in certain contexts, even though the person ‘blamed’ would be crucially different from the subject *Taroo* (thus, in line with N&S 2008).

<sup>31</sup> However, notice that an embedded NS in this structural context can be also interpreted as ‘somebody else’ (see section §2.2.2 for details).

## 1.5 Interpretation of null subjects in consistent and radical null subject languages

As we have seen, the proposals illustrated so far focus on the licensing of NSs, without offering any detail regarding their interpretation. This issue will be treated in the following sections, through a review of the different hypotheses put forth in this respect.

Thereafter, different theories on the interpretation of referential NSs in Chinese will be illustrated and, when appropriate, counterexamples will be considered. In particular, Frascarelli's (2007) proposal will be discussed, in which the concepts of Topic and Topic chains is introduced for the interpretation of NSs.

### 1.5.1 Interpretation of null subjects in Italian

According to the Licensing Condition expressed in (51) above, the interpretation of an NS in a language like Italian, endowed with a rich agreement system, depends on the *phi*-features encoded in the head of the AgrSP node. However, the limits of such an approach have been shown by many authors (among others, Huang 2000, Frascarelli 2007), who have put forth alternative proposals for the licensing and interpretation on NSs in Chinese and Italian, respectively.

From a formal viewpoint, overt pronouns and *pro* are generally treated on a par, since they are both pronouns. Nevertheless, crucial differences exist. For instance, in Carminati (2002) evidence is provided that in Italian a *pro* prefers to link to a prominent antecedent. Specifically, a Position of Antecedent Hypothesis (PAH) is proposed:

- (57) PAH: (in intra-sentential contexts) NS pronouns prefer to retrieve an antecedent in the (highest) Spec(IP), whereas Overt Subject Pronouns prefer an antecedent in a lower syntactic position.<sup>32</sup>

In line with the abovementioned PAH, the following sentences are interpreted differently accordingly to the overt/covert status of the relevant subject (cf. Mayol 2010):

---

<sup>32</sup> It should be noticed that the PAH can be subject to language variation. In fact, in Sorace & Filiaci (2006) evidence is provided showing that English L1 speakers that have a near-native proficiency in Italian had a significantly higher preferences for the matrix subject as a possible antecedent of the embedded overt subject pronoun, contrary to Italian native speakers. Similar differences have been also found in other NS languages, and relevant works argue that such "representational deficit" (in Sullivan's 2014 terms) might be due to residual influence of English L1 (cf. Serratrice, Sorace, & Paoli, 2004; Sorace & Filiaci, 2006). Furthermore, anaphora resolution has been also investigated in heritage speakers which, however, will not be treated in this work that is only focused on (Chinese) native speakers. For further discussion see Montrul 2004, 2008, Montrul & Polinsky 2011, Keating et al 2011, Dubinina & Polinsky 2012.

- (58) *Marta<sub>k</sub> scriveva frequentemente a Piera<sub>j</sub>*  
 Marta write.PST.3SG frequently to Piera  
 quando pro<sub>k</sub>/lei<sub>j</sub> era negli Stati Uniti.  
 when pro/3SG is.PSST.3SG in-the United States  
 ‘Marta<sub>k</sub> frequently wrote to Piera, when she was in the United States’

(Adapted from Mayol 2010: 127)

In this regard, Frascarelli (2007: 694) proposes that:

- (59) a thematic NS is a pronominal variable, the features of which are valued (i.e., ‘copied through matching’) by the local Aboutness-shift Topic.

This assumption is supported by evidence like the following (from Frascarelli 2007: 710):

- (60) [*La prima parte<sub>j</sub>*]<sub>A-Topic</sub>, *fortunatamente*, pro<sub>j</sub> è *più facile*. pro<sub>j</sub> è *scritta*.  
 the first part luckily pro COP more easy pro COP written  
 ‘Its first part, luckily, is easier. It is written.’

As we can see in (60), *la prima parte* is an A-Topic of the sentence<sup>33</sup> and, as such, it serves as an antecedent for both NSs. This can thus seem to challenge Frascarelli’s (2007) proposal in (59), since the AGREE relation is strictly local (Chomsky 2008) and the second NS could not select *la prima parte* as its antecedent. In this regards, Frascarelli (2007) proposes that this possibility is explained by the existence of *Topic chains*: an A-Topic can enter an AGREE relation with all the pronominal elements included in its chain through the mediation of silent copies in the subsequent C-Domains. Hence, a structure like the one in (61) is proposed:

- (61) [<sub>ShiftP</sub> *la prima parte<sub>i</sub>* [<sub>FrameP</sub> *fortunatamente* [<sub>FamP</sub> [<sub>TP</sub> pro<sub>i</sub> è *più facile*]]]]  
 [<sub>ShiftP</sub> <*la prima parte*><sub>i</sub> [<sub>TP</sub> pro<sub>i</sub> è *scritta*]]]

Supporting evidence for the existence of silent Topics can be provided by examples like the following (from Frascarelli 2007: 724):

<sup>33</sup> As a matter of fact, according to Frascarelli’s (2007) analysis, it presents an L\*+H contour, that is to say, the prosodic contour of A-Topics in Italian (cf. F&H 2007 and § 1.1.1 above).

- (62) [*mentre* pro<sub>k</sub> *andava* *a* *scuola*]<sub>Frame</sub>  
 while pro go.3SG.IMPERF to school  
 [*Carla*<sub>k</sub>]<sub>G-Topic</sub> pro<sub>k</sub> *mangiava* *una* *mela*.  
 Carla pro eat.3SG.IMPERF one apple  
 ‘While (she<sub>k</sub> was) going to school, Carla<sub>k</sub> would eat an apple.’

In (62) *Carla* cannot be an A-Topic since it is located below the FS (which is in a lower projection, cf. (38) above). Hence, it must be considered a low copy merged in Spec,FamP (that is, a G-Topic). The sentence in (62) can thus be represented as in (63):

- (63) [<sub>ShiftP</sub> <*Carla*><sub>k</sub> [<sub>FrameP</sub> [<sub>TP</sub> *mentre* pro<sub>k</sub> *andava* *a* *scuola*] [<sub>FamP</sub> *Carla*<sub>j = k</sub> [<sub>TP</sub> pro<sub>j</sub> *mangiava* *una* *mela*]]]]]

This structure can account for the possibility to interpret the *pro* sitting in the subject position of the adverbial clause as co-referent with *Carla*. In other words, the matrix *pro* selects as its antecedent a silent A-Topic which matches with the overt G-Topic in the Spec,FamP of the adverbial clause.

Based on examples like this, the following Topic Criterion is proposed (cf. Frascarelli 2007: 721):

(64) TOPIC CRITERION

- a) [+aboutness] is connected with Extended Projection Principle (EPP) feature in the high Topic field that yields a specific discourse-related property, namely ‘Aboutness’.
- b) The [+aboutness] Topic matches with an argument in the main clause through AGREE.
- c) When continuous, the [+aboutness] Topic can be null (i.e., silent)

The Topic Criterion implies that every predicational sentence contains a position in its C-Domain endowed with the [+aboutness] feature, which enters an AGREE relation with the D° heading the DP of the overt/covert pronoun in the clause (cf. Frascarelli 2007). Consider Figure 1.16 for a graphic representation:

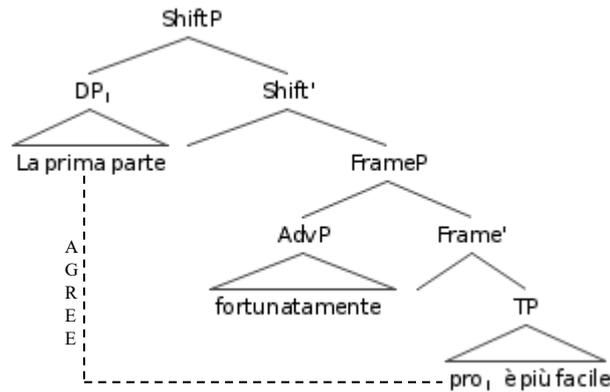


Figure 1.16: *AGREE relation of Topics*

The overt A-Topic *la prima parte* is merged in Spec,ShiftP, higher than the adverbial FS sitting in Spec,FrameP, and it enters an AGREE relation with the DP *pro* sitting in subject position within the TP layer.

Notice that A-Topics also implement a conversational move (cf. Krifka 2007), since they have an updating effect leading to a new context (cf. B&F 2010). As such, they can only be realized in a root or root-like C-Domain, endowed with illocutionary force. Consider the contrast between the following ‘out-of-the-blue’ sentences in Italian:

- (65) *Gianni<sub>i</sub> è dispiaciuto perché Leo<sub>k</sub> gli ha confermato che*  
 Gianni AUX.3SG sorry.PP because Leo 3SG.CL AUX.3SG confirm.PP that  
*pro<sub>i</sub> non potrà prender-si le ferie.*  
 pro NEG can.3SG.FUT take-self the vacation  
 Lit: ‘Gianni<sub>i</sub> is sorry because Leo<sub>k</sub> confirmed to him that (he<sub>i</sub>) cannot take vacation.’

- (66) *Gianni<sub>i</sub> ha detto che Leo<sub>k</sub> gli ha confermato che*  
 Gianni AUX.3SG say.PP that Leo 3SG.CL AUX.3SG confirm.PP that  
*pro<sub>i/k</sub> non potrà prender-si le ferie.*  
 pro NEG can.3SG.FUT take-self the vacation  
 ‘Gianni said that Leo confirmed to him that (he<sub>i/k</sub>) cannot take vacation.’

Without any specific context, an Italian speaker is inclined to select the matrix subject *Gianni* as an antecedent for the double embedded *pro* in (65). Indeed, according to Frascarelli’s (2007) and F&H’s (2007) analyses, *Gianni* should not be considered the grammatical subject of the matrix sentence: it

is an A-Topic starting a Topic chain which allows for the interpretation of NSs.<sup>34</sup> On the other hand, the DP *Leo* cannot be interpreted as an A-Topic since the complement of a factive verb is not endowed with illocutionary force and, as such, cannot host A-Topics (cf. B&F 2010). Accordingly, the DP *Leo* can only be interpreted as a G-Topic, which does not interfere in a Topic chain (cf. Frascarelli 2007). Hence the following structure can be proposed:

(65') [ShiftP Gianni<sub>i</sub> [FamP [TP pro<sub>1j</sub> è dispiaciuto [CP perché [FamP Leo<sub>k</sub> [TP pro<sub>2k</sub> gli ha confermato [CP che [FamP <Gianni><sub>j=i</sub> [TP pro<sub>3i</sub> non potrà prendersi le ferie]]]]]]]]]]]

As we can see, (i) pro<sub>1</sub> is interpreted as co-referent with the local A-Topic *Gianni*, (ii) pro<sub>2</sub> refers to the overt G-Topic in its C-Domain thus meeting locality constraints and, finally, (iii) pro<sub>3</sub> selects as its antecedent a silent (and local) low copy of the matrix A-Topic *Gianni*.

On the contrary, the complement of a bridge verb has root-like properties and, as such, it allows for the realization of embedded A-Topics (cf. B&F 2010). As a matter of fact, the Italian informants who collaborated in the present research agreed that, in a sentence like the one in (66), the person who 'cannot take vacation' could be either *Gianni* or *Leo*. Two different structures should be therefore provided to account for either interpretation:

(66') [ShiftP Gianni<sub>j</sub> [FamP [TP pro<sub>j</sub> ha detto [CP che [ShiftP Leo<sub>k</sub> [FamP [TP pro<sub>k</sub> gli ha confermato [CP che [FamP <Leo><sub>i=k</sub> [TP pro<sub>i</sub> non potrà prendersi le ferie]]]]]]]]]]]

(66'') [ShiftP Gianni<sub>j</sub> [FamP [TP pro<sub>j</sub> ha detto [CP che [ShiftP [FamP Leo<sub>k</sub> [TP pro<sub>k</sub> gli ha confermato [CP che [FamP <Gianni><sub>i=j</sub> [TP pro<sub>i</sub> non potrà prendersi le ferie]]]]]]]]]]]

In (66') the embedded DP *Leo* is realized as an overt A-Topic and, as such, it breaks the chain created by *Gianni* in the matrix clause and starts a new Topic chain which allows for the interpretation of the local pro and the double embedded pro through the mediation of a silent copy in the double embedded FamP.

On the other hand, if *Leo* is realized as a G-Topic in the embedded clause (as in (66'')), the double embedded pro is interpreted as referred to *Gianni*, through an AGREE relation with a local silent copy in Spec,FamP of the matrix A-Topic *Gianni*.

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<sup>34</sup> Frascarelli (2007) argues that a preverbal 'subject' is actually an A-Topic which is thus sitting in Spec,ShiftP. Therefore, according to the Merge analysis illustrated above, a pro must be assumed in Spec,TP, meeting EPP requirements (cf. Chomsky 1981).

According to the present analysis, the following condition must be added to the *Topic Criterion* in (64):

(67) TOPIC-CHAIN CONDITION (Frascarelli 2018: 19)

- a. An A-Topic chain can only be started from a root (or root-like) C-Domain.
- b. The A-Topic heading the Topic chain can be silent.

To sum up, Frascarelli's (2007) proposal and subsequent integrations (B&F 2010, Frascarelli 2018) seem to properly account for the interpretation of *pro* in a consistent NSL like Italian.

In the following section, we will therefore shift the focus on radical NSLs, so as to have an overview of the works dealing with the interpretation of NSs in Chinese.

### 1.5.2 Interpretation of null subjects in radical null subject languages: Chinese

As we have seen in section §1.4, the possibility for a radical NSL like Chinese to realize NSs has been attributed either to the absence of verb inflection or to the agglutinative properties of its pronominal system. Nevertheless, even though there seems to be a connection between verb inflection and the possibility for a given language of licensing NSs, this cannot provide a comprehensive explanation. Furthermore, the interpretative properties of the Null Subject Parameter have been considered only by few authors.

Huang (1989) can be considered one of the most influential work in this area or research. It is proposed that in a language without Agr like Chinese a *pro*<sup>35</sup> can be treated on a par with a PRO and, accordingly, the following Generalized Control Rule is postulated:

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<sup>35</sup> Despite the absence of Agr, Huang (1989: 192) argues that in Chinese the NS in a finite clause is a *pro* since it can be lexicalized. Consider the following contrast:

- (i) a. *Zhangsan zhunbei PRO gen ni qu*  
Zhangsan prepare PRO with 2SG go  
'Zhangsan plans to go with you.'
- b. \**Zhangsan zhunbei ta gen ni qu*  
Zhangsan prepare 3SG with 2SG go  
LIT: 'Zhangsan plans he goes with you.'
- (ii) a. *Zhangsan qi ma qi de pro hen lei*  
Zhangsan ride horse ride DE pro very tired  
'Zhangsan rode a horse till (he) got tired.'
- b. *Zhangsan qi ma qi de ma hen lei*  
Zhangsan ride horse ride DE horse very tired  
'Zhangsan rode a horse till the horse got tired.'

(68) GENERALIZED CONTROL RULE (GCR) (Huang 1989: 193)

An empty pronominal is controlled in its control domain (if it has one).

Therefore, according to the GCR in (68), both a *pro* and a *PRO* in Chinese must have a *local, unique, non-arbitrary antecedent*. However, when the empty pronominal is not controlled, it ‘may have a long-distance or split-antecedent, or its reference may be arbitrary or determined by pragmatic considerations’ (cf. Huang 1989: 194). Consider the following contrast (adapted from Huang 1989: 198):

(69) a. *Lisi, Zhangsan ku de [ta hen shangxin]*

Lisi Zhangsan cry DE 3SG very sad

‘As for Lisi, Zhangsan cried until he (Lisi) got very sad.’

b. \**Lisi, Zhangsan ku de [pro hen shangxin]*

Lisi Zhangsan cry DE 3SG very sad

‘As for Lisi, Zhangsan cried till *pro* got vey say.’

According to Huang, the overt pronoun in the resultative clause (69a) must refer to the Topic *Lisi* and the sentence is acceptable since the Comment *Zhangsan ku de ta hen shangxin* predicates something about the Topic *Lisi*. However, when the relevant subject is null, this sentence cannot be interpreted since in (69b) the control domain for *pro* is the matrix clause, and the latter only includes the matrix subject *Zhangsan*. Consequently, the embedded *pro* cannot take *Lisi* as its antecedent. In other words, the embedded *pro* cannot be interpreted as co-referent with the Topic and, consequently, the Comment does not predicate anything about it, yielding in an unacceptable sentence (cf. Huang 1989).

Further evidence for the validity of the GCR is given in Huang *et al* (2009), where it is shown that the GCR can account for the possibility to violate some restrictions, such as the Left Branch Condition (LBC)<sup>36</sup>. Consider the following example (adapted from Huang *et al* 2009: 208):

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While in (i) the NS (*PRO*) cannot be substituted with an overt pronoun, the NS (*pro*) in (ii) can be lexicalized without affecting the grammaticality of the sentence.

<sup>36</sup> The Left Branch Condition can be formulated as in (i) (cf. Ross 1967):

(i) No NP which is the leftmost constituent of a larger NP can be reordered out of this NP by a transformational rule.

- (70) a. \**Zhangsan<sub>i</sub> wo kanjian le t<sub>i</sub> baba.*  
           Zhangsan 1SG see PERF father  
           Lit: ‘Zhangsan<sub>i</sub>, I saw (t<sub>i</sub>)’s father.’

As we have seen above, Topicalization is a mixed system in Chinese and, as such, Topic can be derived either by Merge or Move. Assuming the LBC, we can consider that the Topic *Zhangsan* moves from its TP internal position to Spec,ShiftP obtaining an agrammatical sentence. However, in Huang *et al* (2009) it is proposed that the Topic is in fact merged in the C-Domain in this structural context, and the empty category is a pro. The ungrammaticality of (70) is thus explained by the GCR: the Topic is not in the control domain of the pro, which is controlled by the ‘closest’ DP *wo* (‘I’) instead, as is shown in (70):

- (70’) \*<sub>[ShiftP Zhangsan<sub>i</sub> [TP wok kanjian le [pro<sub>k</sub> baba]]]</sub>

The only possible interpretation of sentence (70’) is therefore nonsensical, namely, ‘as for Zhangsan, I saw my father’. Just like (69b), in which the embedded pro could not be controlled by the matrix Topic, the Comment in (70) does not predicate anything about the A-Topic *Zhangsan*. Hence, this sentence is unacceptable.

On the contrary, in a structural context in which the pro is controlled by the A-Topic *Zhangsan*, the latter has a function in the discourse and the relevant sentence is grammatical:

- (71) *Zhangsan<sub>i</sub>, pro baba hen you qian.*  
       Zhangsa pro father very have money  
       Lit: ‘Zhangsan<sub>i</sub>, pro<sub>i</sub>’s father is rich.’ (adapted from Huang *et al* 2009: 209)

Nevertheless, this proposal does not account for cases like the following, in which a pro refers to an extra-sentential antecedent (even though it is only a marginal option):<sup>37</sup>

- (72) [During the meeting, **Hongliang**<sub>i</sub> stood up abruptly and ran out of the room.]  
       ?*Zhangsan<sub>k</sub> shuo pro<sub>i</sub> yao qu jie ta qizi.*  
       Zhangsan say pro have go pick up 3SG wife  
       ‘Zhangsan said (**Hongliang**) has to go and pick up his wife.’

<sup>37</sup> The (low) acceptability is assessed by a specific test conducted for the present thesis. See section §2.2.2 for relevant analysis.

According to GCR this interpretation should be excluded since *pro* is in the control domain of the overt DP *Zhangsan*. Hence, examples like this challenge the validity of GCR.

To explain this interpretation, some scholars have proposed that a null pronoun can be correctly identified through a contextual analysis (cf. among others, Zheng 2001, Xu 2005, Song 2009, Yuan 2014). For instance, Zheng (2001) introduces the concept of ‘shared knowledge’, which allows for the identification of a *pro* which, according to the author, is present at LF but not realized at PF. In other words, a *pro* can be interpreted if its antecedent is clear in the minds of both the speaker and the interlocutor (cf. Zheng 2001). For instance, the following sentence can be interpreted, since the participants in the conversation know that the NS is *ni* (‘you’):

(73) [A greets B.]

A: *pro chi guo fan le?*  
       *pro eat EXP food LE*

‘A: Have (you) eaten?’<sup>38</sup>

(adapted from Zheng 2001: 24)

Similarly, Song (2009) proposes that the licensing of *pro* is subject to two restrictions in Chinese:

(74) SONG’S (2009) PROPOSAL

- a. *pro* must have an antecedent.
- b. The antecedent must be identifiable.

According to this proposal, the interpretation of a referential NS is based on context analysis in a radical NSL like Chinese. However, consider the contrast between (75) and (76) below:<sup>39</sup>

(75) *Sunli, suiran pro tongguo le gaokao,*  
       Sunli although *pro* pass PERF admission exam  
       *danshi pro hai shi bu gaoxing.*  
       but *pro* still be NEG happy

Lit: ‘Sunli, although (she) passed university’s admission exam, (she) is still not happy.’

<sup>38</sup> In the Chinese culture, this question is considered as a friendly greeting.

<sup>39</sup> These examples are taken from the original corpus of data collected for the present analysis. Like the ones given in (69), they will be discussed in section §2.2.1.2.

(76) [Sunli would like her daughter to study medicine at Nankai University. Sunli's daughter passed the admission exam at Tianjin University.]

\**Sunli, suiran pro tongguo le gaokao, danshi pro hai shi bu gaoxing.* (= 75)

According to informants, sentence (75) is fully acceptable, and both NSs are interpreted as referring to the overt Topic *Sunli*. On the contrary, if preceded by the context, in (76) the same sentence is rejected. Song's (2009) proposal (74) cannot account for this contrast, since it is clear from the context that the person who passed the exam is 'Sunli's daughter'. Sentence (76) should be thus accepted. On the contrary this is not the case.

We must conclude that a 'pure' contextual analysis cannot account for the unacceptability of sentences like this. In this respect, the validity of the following proposal is assumed and will be discussed in the following chapter:

(77) Topic Criterion (64) and Topic Chain Condition (67) can account for radical NSLs as well.

## 2. Analysis of data: the acceptability experiment

### 2.1 The experiment

In order to check whether the interpretation of NSs depends on the creation of (A-)Topic chains also in Chinese, an acceptability test has been specifically designed, which includes a total of 10 conditions aiming to investigate different phenomena and constraints related to NSs interpretation in Chinese, namely:

- a) NS in the matrix clause of a conditional adverbial clause;
- b) NS in a conditional adverbial clause;
- c) NS in the matrix clause of a concessive adverbial clause;
- d) NS in the concessive adverbial clause;
- e) NS embedded under a bridge verb;
- f) NS double embedded under a bridge verb, with a 3<sup>rd</sup> person pronoun intervener;
- g) NS double embedded under a bridge verb, with a 1<sup>st</sup> pronoun intervener;
- h) NS embedded under a factive verb;
- i) NS in a matrix sentence without an overt (A-)topic;
- j) NS in the absence of a c-commanding antecedent.

The test includes a total of 12 target sentences: five of them have been provided twice in the questionnaire, either as an out-of-the-blue sentence or with a context, and three of them have been provided three times, as an out-of-the-blue sentence, and with two different contexts. This device was necessary in order to check whether and to what extent a context might influence NS acceptability and interpretation in a radical pro-drop language like Chinese. All target sentences have been properly distanced and randomized, additionally, informants could not go back and change previously expressed judgments.

The test has been submitted on-line to a total of 168 Chinese native speakers, whose socio-demographic data are illustrated in Table 2.1 below<sup>40</sup>:

Gender		Age $\mu$	Education	Field (University)		“Have you ever studied linguistics?”
M	F		University	Human	Other	Yes
65%	35%	27	93%	68%	32%	67%

Table 2.1: *Demographic data*

After expressing their acceptability judgment on a given sentence, informants have been asked to rate, for the same sentence, the possibility for the proposed alternative referents to be interpreted as possible antecedents of the relevant NS. For single embedded, adverbials and simple (e.g., only matrix) sentences, two options have been given: one is the matrix subject, whereas the other is either *somebody else*, for out of the blue sentences, or the antecedent proposed in the context, when the latter is present. In the case of double embedded NSs, three options have been given for the out of the blue sentences (specifically, the matrix subject, the single embedded subject and *somebody else*), and two for sentences with a context (that is to say, either the matrix subject or the single embedded subject, since the context would propose either the former or the latter as the most feasible antecedent). Both acceptability and interpretation judgements have been expressed on a five-points Likert scale, and informants have been instructed, so as to be aware of the exact meaning of each point (0 = not acceptable; 1 = undecided; 2 = slightly acceptable; 3 = fair/acceptable; 4 = very acceptable).

Eventually, due to their non-parametric nature, the data collected have been standardized computing z-score and then statistically analyzed running paired t-tests in order to provide a scientific valid check for any eventual correlation (e.g., between the type of verb and the interpretation given).

## 2.2 Data analysis

Despite the logical order “simple before complex”, which might have been expected for this exposition, this section will begin with the analysis of complex sentences (e.g., adverbial clauses). This was a post-hoc decision, due to the fact that the analysis of central and peripheral adverbial clauses provides substantial evidence that (A-)Topics in Chinese are derived via A'-movement<sup>41</sup>.

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<sup>40</sup>Despite the Chinese native speakers who collaborated to the present test come from 25 different provinces, the results of an ANOVA test show that no statistical significance is attested comparing acceptability scores expressed by informants grouped according to their place of origin ( $f = 0.89$ ,  $p = .56$ ).

<sup>41</sup> Despite the most recent Copy Theory postulated in Chomsky (1993), a Move and merge analysis (Trace Theory) will be kept in this chapter, in order to be consistent with the works previously illustrated in Chapter 1.

The preliminary analysis of adverbial clauses is therefore important for a better understanding of the structure assumed in the analysis of simple and embedded clauses.

Coherently following the “complex before simple rule”, embedded NSs will be later analyzed in sections §2.2.3-5, in order to show the influence of context with respect to the matrix verb and provide further evidence for the assumption that NS interpretation is linked to (A-)Topic chains in Chinese as well.

Finally, the analysis will be carried on showing the output regarding NSs in simple sentences (e.g., in absence of a C-commanding antecedent and without an overt A-Topic) in sections §2.2.6-7.

### 2.2.1 Adverbial clauses: central and peripheral

According to Cinque (1999), the position of adverbial modifiers is fixed and, consequently, their mutual order is constrained. The hierarchy in (1), based on cross-linguistic analysis, is universal and presents as many as 24 syntactic positions, each related to a specific semantic formal feature:

- (1) [**MoodP** frankly [Mood°[+SpeechAct] [**MoodP** unfortunately [Mood°[+evaluative]][**MoodP** evidently [Mood°[+evidential] [**ModP** probably [Mod°[+epistemic] [**TP** then [T°[+pst/fut] [**MoodP** perhaps [Mood°[+irrealis] [**ModP** necessarily [Mod°[+necessity]][**ModP** possibly [Mod°[+possibility] [**ModP** gladly [Mod°[+volitional] [**ModP** obligatorily [Mod°[+obligation] [**ModP** wisely[Mod°[+ability] [**AspP** usually [Asp°[+habitual] [**AspP** again [Asp°[+repetitive] [**AspP** often [Asp°[+frequentative] [**TP** already [T°[+anteriority] [**AspP** no longer [Asp°[+terminative] [**AspP** still [Asp°[+continuative] [**AspP** always [Asp°[+perfect] [**AspP** just [Asp°[+retrospective] [**AspP** long [Asp°[+durative] [**AspP** almost [Asp°[+prospective] [**AspP** soon [Asp°[+progressive] [**AspP** completely [Asp°[+completive] [**VoiceP** well [Voice°[+voice]

Cinque (1999)

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According to the Trace Theory, a sentence like (i) can be analyzed with a structure like the one in (ii), in which the subject *John* moves from the complement position in the VP to Spec,TP in order to have its Case-feature valued, leaving a trace in Compl,VP:

(i) John was arrested.

(ii) [<sub>TP</sub> John<sub>k</sub> was [<sub>VP</sub> arrested t<sub>k</sub>.]]

(Nunes 2011: 143)

However, according to the Copy Theory, traces can be analyzed as low copies of the moved constituent, present in LF but not realized in PF. According to this Theory, sentence (i) can be represented as in (iii):

(iii) [<sub>TP</sub> John was [<sub>VP</sub> arrested ~~John~~.]]

Cinque (1999) concentrates on AdvP, deliberately keeping apart other phrase types, which can have an adverbial function, like DPs, PPs or CPs. In this respect, Puglielli and Frascarelli (2011, henceforth P&F) propose that adverbial DPs and PPs are generated in the I-domain area and then extraposed to a peripheral position. Specifically, they are merged in the Specifier position of dedicated functional projections in the split-IP<sup>42</sup> area illustrated in (1), similarly to AdvPs, and then moved according to discourse grammar requirements to the Spec of a specific projection in the split-CP area, which could be argued to be Spec,FrameP (cf. Frascarelli 2017).

Similar to adverbial DPs and PPs, also adverbial CPs are merged in the split-IP area and then moved to a peripheral position (cf. P&F 2011). However, starting from Haegeman’s (2002) seminal paper and subsequent works (Haegeman 2010, 2012), evidence has been provided that at least two types of adverbial clauses exist, distinguishing central and peripheral adverbials. The former “modify the proposition expressed by the clause with which they are related”, while the latter “provide background propositions to be processed as the privileged discourse context for the proposition expressed in the associated clause” (cf. Haegeman 2004: 61).

From a syntactic viewpoint, central adverbial clauses are either adjoined to VP or to an Inflectional projection, and they resist root phenomena<sup>43</sup>, a restriction that originates from their nature as relative clauses (which includes Operator (OP) movement) (cf. Haegeman 2004, Thompson 1994, Nissembaum 2000). As a matter of fact, the double movement of the topicalized DP *the column* and the temporal OP *when* in (2) creates intervention effects<sup>44</sup>, resulting in an agrammatical sentence:

(2) a. \*[When]<sub>i</sub> [her column]<sub>k</sub> she started to write t<sub>i</sub> t<sub>k</sub> again last week, I thought she would be fine.

Adapted from Haegeman (2009: 13)

On the contrary, peripheral adverbial clauses are adjoined to CP, they are not subject to OP movement and are compatible with root phenomena (cf. Haegeman 2004). This means that, even

<sup>42</sup> In the present thesis the term “split-IP” is used as a cover term on a par with “split-CP”. As a matter of fact, both Split-IP and -CP gather together a group of different phrases. Specifically, “split-IP” will be used to refer to the whole set of functional phrases above the vP area identified in Cinque (1999).

<sup>43</sup> Root phenomena are those that normally occur in matrix clauses and in root-like embedded clauses (e.g., the complement of a bridge verb like *say*) (cf. Heycock 2006).

<sup>44</sup> Intervention effects can be considered a re-elaboration of Rizzi’s (1990) seminal notion of “Relativized Minimality”, according to which the local relation between an extracted element and its trace is disrupted when it crosses an intervening element whose morphosyntactic featural specification matches the specification of the elements it separates.

though the DO in the peripheral contrastive adverbial clause in (3) is topicalized, ‘while’ is not an operator and no intervention effects are at stake, thus resulting in a grammatical sentence:

(3) His face not many admired, while [his character]<sub>i</sub> still fewer felt they could praise t<sub>i</sub>.

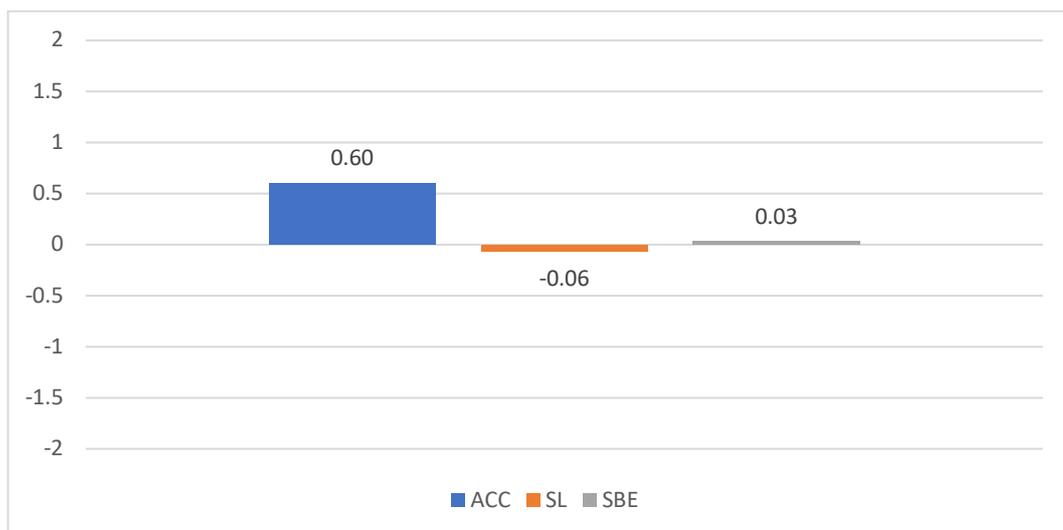
Adapted from Haegeman (2012: 159)

In order to check whether a formal distinction between central and peripheral adverbial clauses can be also assumed for Chinese, conditionals adverbials (for the central type) and concessive adverbials (for the peripheral type) have been tested in the present experiment.

### 2.2.1.1 Central adverbial clauses

The first condition to be analyzed is an NS in a conditional adverbial that precedes the matrix clause with a referential DP serving as subject. Consider sentence (4) and the relevant acceptability judgments in Graph 2.1 below, in which ACC is ‘acceptability’, SL is ‘Sunli’ and SBE is ‘somebody else’:

(4) *Ruguo pro neng ba yu dou chi-wan, Sunli hui hen gaoxing.*  
 if pro can ba fish all eat-finish Sunli can very happy  
 LIT: ‘If (she) can finish all the fish, Sunli will be happy.’



Graph 2.1: pre-matrix conditional with an NS in the adverbial clause

It can be argued that this sentence has been judged as acceptable by all the informants ( $M = 0.60$ ), considering that, after standardization, level 0 indicates what can be defined a ‘moderate’ acceptability.

As for interpretation, paired t-tests do not show any statistically significant difference between the acceptability judgments expressed for *Sunli* and *somebody else* as possible antecedent.

As illustrated in §1.5.1., the interpretation of an NS in a consistent pro-drop language like Italian depends on an AGREE relation between the pro and the local A-Topic. Considering that adverbial clauses in the left periphery of a sentence are located in Spec,FrameP (cf. Carella 2015, Frascarelli 2017), and that FrameP is located in a position below ShiftP (cf. Frascarelli 2017), it can be argued that the NS in the adverbial clause is interpreted as co-referent with a silent A-Topic. However, without a specific context, interpretation is ambiguous between two possible readings, as illustrated in (5a-b):

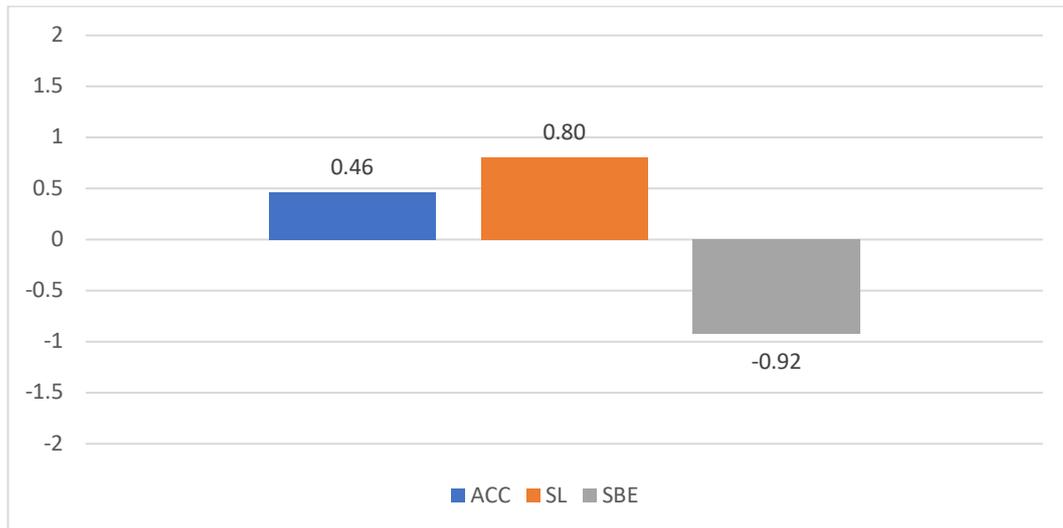
- (5) a. [<sub>ShiftP</sub> <*Sunli*><sub>i</sub> [<sub>Shift'</sub> [<sub>FrameP</sub> [*ruguo pro<sub>i</sub> neng ba yu dou chi-wan*]<sub>Adv</sub> [<sub>Frame'</sub> [<sub>FamP</sub> *Sunli<sub>k=i</sub>* [<sub>Fam'</sub> [<sub>TP</sub> *pro<sub>k</sub> hui hen gaoxing*]].
- b. [<sub>ShiftP</sub> <*Somebody else*><sub>i</sub> [<sub>Shift'</sub> [<sub>FrameP</sub> [*ruguo pro<sub>i</sub> neng ba yu dou chi-wan*]<sub>Adv</sub> [<sub>Frame'</sub> [<sub>FamP</sub> *Sunli<sub>k</sub>* [<sub>Fam'</sub> [<sub>TP</sub> *pro<sub>k</sub> hui hen gaoxing*]].

Furthermore, we propose that *Sunli* is not only the subject of the following predication, but also a Topic of the relevant sentence. Chinese is in fact known as a Topic-Comment language (Li & Thompson 1976), hence it is reasonable for *Sunli* to be analyzed as a Topic which, in the embedded clause, can be feasibly interpreted as an overt G-Topic and, as such, located below FrameP. Further evidence for this proposal will be provided in section §2.2.2.

To check whether a context may affect (positively or negatively) acceptability and/or interpretation, let us now consider sentence (6) below, in which sentence (4) is reposed with a context suggesting *Sunli* as the most feasible antecedent for the adverbial NS:

- (6) [*Jintian Sunli cong jia li dai le zuohao de yu, keshi bu zhidao shifou you chi wufan de Shijian*]  
 ['Today Sunli brought some cooked fish from home, but she doesn't know if she will have time to have lunch']

*Ruguo neng ba yu dou chi-wan, Sunli hui hen gaoxing.* = (4)



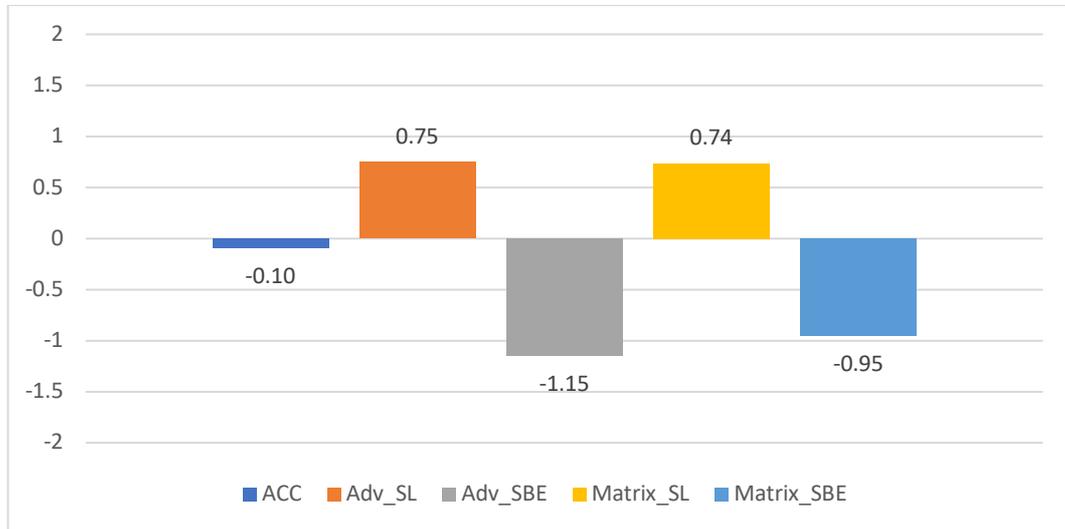
Graph 2.2: pre-matrix conditional with an NS in the adverbial clause (with context)

As illustrated in Graph 2.2, a double interpretation is excluded with a context suggesting *Sunli* as the intended antecedent. As a matter of fact, statistical analyses show that (i) sentence (6) is as acceptable as the one without a context in (4), since no significant differences are attested, and that (ii) informants select *Sunli* (M: 0.80, SD: 0.40) more frequently than *somebody else*  $t(167) = -14, p = <.001$  as the most feasible antecedent for the adverbial NS. Therefore, it can be argued that contextual information may affect interpretation, but not acceptability, for this structural context.

Let us now consider the condition in which an overt A-Topic precedes both the conditional and the matrix clauses (both containing an NS). Graph 2.3 below shows that the presence of an overt A-Topic bleeds acceptability for this structural context<sup>45</sup>:

<sup>45</sup> In particular, the paired t-test shows that informants rate sentence (7) with an overt A-Topic statistically less acceptable (M: -0.10, SD: 0.75) than (4) with a covert A-Topic,  $t(167) = 7.6, p = <.001$ .

- (7) \*Sunli, *ruguo pro neng ba yu dou chi-wan, pro hui hen gaoxing.*<sup>46</sup>  
 Sunli if pro can ba fish all eat-finish pro can very happy  
 LIT: ‘Sunli, if (she) can finish all the fish, (she) will be happy.’



Graph 2.3: Overt A-Topic preceding a pre-matrix conditional

Despite the reduced acceptability expressed by the informants, interpretation seems to be clear. As a matter of fact they select *Sunli* (M: 0.75, SD: 0.48) more frequently than *somebody else*  $t(167) = -12.6, p = <.001$  as the most feasible antecedent for the NS in the adverbial clause. Similarly, they choose *Sunli* (M: 0.74, SD: 0.49) more frequently than *somebody else*  $t(167) = -9.7, p = <.001$  as the most feasible antecedent also for the matrix NS. Adopting the proposal put forth in Frascarelli (2007), it can be argued that *Sunli* is interpreted as an A-Topic, allowing for the interpretation of both NSs.

However, as said above, this sentence is not accepted by informant. In order to explain this result, it will be proposed that the A-Topic in Chinese is derived by Move rather than through Merge. In this regard, it should be recalled that conditionals, as central adverbial clauses, are generated in the split-IP area and then moved to the left periphery (cf. Haegeman 2004); assuming that in Chinese an A-Topic is derived by Move, its movement will create intervention effects on that of the adverbial clause, thus obtaining unacceptability. Hence, a structure like the following can be assumed:

- (8) \* $[\text{ShiftP } \textit{Sunli}_i \text{ [FrameP [ } \textit{ruguo pro}_i \textit{ neng ba yu dou chi-wan}]_k \text{ [TP } t_i \textit{ hui } t_k \textit{ hen gaoxing}]]$ .  
 INTERVENTION

<sup>46</sup> For simplicity and uniformity with the analysis conducted so far, we define this NS as “pro”; however, we will resume the analysis of this empty category in the present section.

This proposal is also supported by the comparison between sentences like (9a) and (9b), in which, as we can see, in the former *Sunli* does not move in Spec,ShiftP, contrary to the latter:

(9a) [*Lili shi Sunli de muqin*]

['Lili is Sunli's mother']

[*Ruguo Lili bu tongyi*]<sub>k</sub>, *Sunli bu hui* t<sub>k</sub> *chuguo xuexi.*

if Lili NEG agree sunli NEG can go abroad study

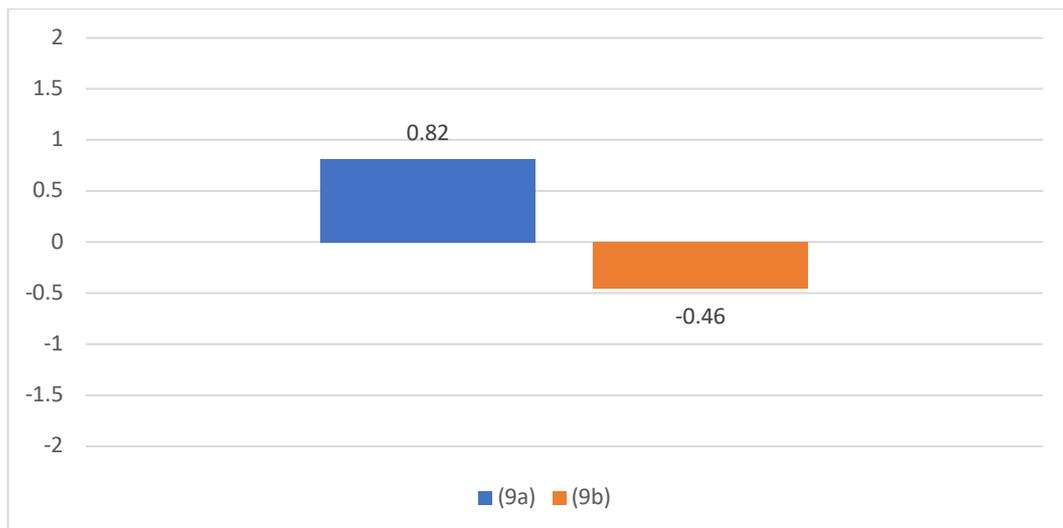
'If Lili doesn't agree, Sunli won't be able to study abroad.'

(9b)[context as in 9a]

\**Sunli*<sub>i</sub>, [*ruguo Lili bu tongyi*]<sub>k</sub>, t<sub>i</sub> *bu hui* t<sub>k</sub> *chuguo xuexi.*

Sunli if Lili NEG agree NEG can go abroad study

Lit: Sunli, if Lili doesn't agree, (she) won't be able to study abroad.



Graph 2.4: (9a) vs (9b) – acceptability

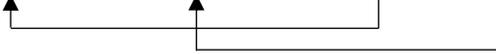
Since in (9a) the conditional clause only moves, no intervention effects are attested. On the contrary, the movement of the overt A-Topic in (9b) interferes with that of the adverbial, bleeding acceptability. These data are also supported by paired t-tests which show that the difference between (9a) (M: 0.82, SD: 0.73) and (9b) is statistically significant  $t(167) = -12.7, p = < .001$ . Hence, structures (10a) and (10b) can be proposed for sentences (9a) and (9b) respectively:

(10a) [*Ruguo Lili bu tongyi*]<sub>k</sub> *Sunli bu hui* <sub>t<sub>k</sub></sub> *chuguo xuexi.* (= 9a)



NO INTERVENTION

(10b) [*Sunli*]<sub>i</sub> [*ruguo Lili bu tongyi*]<sub>k</sub> <sub>t<sub>i</sub></sub> *bu hui* <sub>t<sub>k</sub></sub> *chuguo xuexi.* (= 9b)



INTERVENTION

These data seem to be in line with Haegeman (2004 and following works) from the viewpoint of the external syntax of adverbial clauses.

However, the possibility for the adverbial NS in (5) and (6) (and (7), despite ungrammaticality) to be interpreted as co-referent with the (matrix) A-Topic seems to exclude the hypothesis that central adverbial clauses are subject to OP movement in Chinese. We therefore propose that *ruguo* is a C°, rather than an OP, contra Haegeman (2004). This proposal finds further support in examples like (11) below. Indeed, according to our analysis, in Chinese a Topic is subject to movement; hence, if *ruguo* were an OP, its movement would create intervention effects with the topicalized DO *zhe ge shitou*. However, sentence (11) is grammatical. No OP movement can be thus posited:

(11) *Ruguo zhe ge matou ni zuihou reng zhao bu dao, bie wangji hai you*

If this CLASS wharf 2.SG last still find NEG RIS NEG forget still have  
*wo de "gupo wu" [...]*

1.SG DE grandfather's sister house

Lit: 'If at the end that wharf you won't find, don't forget there is also the house of my grandfather's sister.'

(Qi Xua, 1996)

(11') *Ruguo [zhe ge matou]<sub>i</sub> ni zuihou reng zhao bu dao* <sub>t<sub>i</sub></sub>



NO INTERVENTION

Let us now compare conditional and concessive clauses, in order to provide further evidence supporting the Move analysis put forth so far.

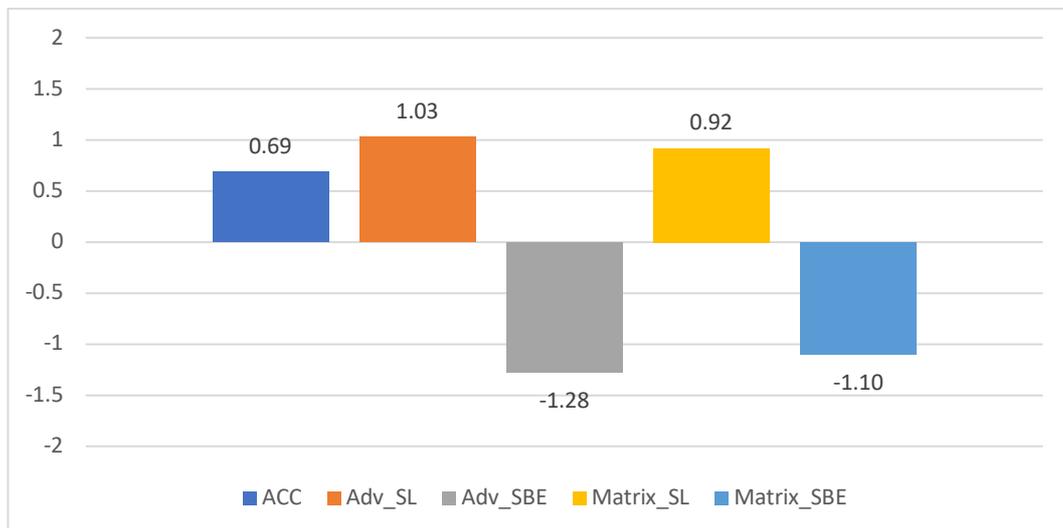
### 2.2.1.2 Peripheral adverbial clauses

In this section evidence will be provided showing that peripheral adverbial clauses are not derived by Move, contrary to conditionals.

The first condition to be analyzed is that of an overt A-Topic preceding the adverbial and the matrix clauses, both with an NS:

- (12) [Sunli]<sub>i</sub>, *suiran* pro *tongguo* *le* *gaokao*,  
 Sunli although pro pass PERF university admission exam  
*danshi* [e] *haishi* *bu* *gaoxing*.  
 but still NEG happy.

‘Sunli, although (she) passed the university admission exam, (she) is still not happy.’



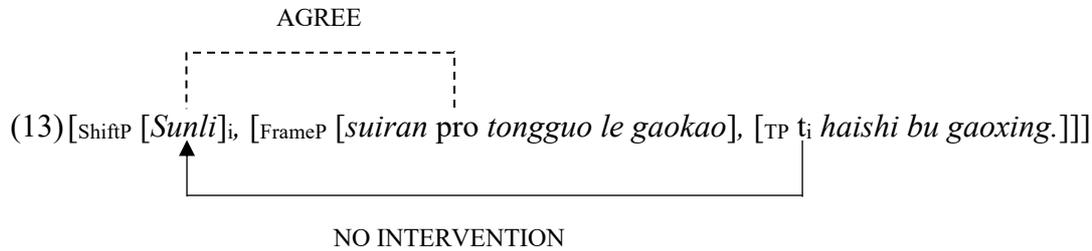
Graph 2.5: Overt A-Topic preceding a pre-matrix concessive<sup>47</sup>

Compared to (7), in which an overt A-Topic precedes a pre-matrix conditional adverbial clause, informants have judged sentence (12) (M = 0.69, SD = 0.52) statistically more acceptable  $t(167) = 9, p = < .001$ . This can be explained by the fact that concessive adverbial clauses belong to the peripheral type, and therefore they are not subject to movement (cf. Haegeman 2004). Hence, only the A-Topic *Sunli* moves and no intervention effects are attested.

The fact that *Sunli* is interpreted as an A-Topic in (12) is borne out by interpretive data. As a matter of fact, informants rated *Sunli* (Adv: M = 1.03, SD = 0.27; Matrix: M = 0.92, SD = 0.41) as more acceptable than *somebody else* for serving as antecedent for both the adverbial ( $t(167) = -50.1$ ,

<sup>47</sup> In the Graph, Adv\_SL is adverbial *Sunli*, Adv\_SBE is adverbial *somebody else*, Matrix\_SL is matrix *Sunli* and Matrix\_SBE is matrix *somebody else*.

$p < .001$ ) and the matrix NSs ( $t(167) = -25.5, p < .001$ ). It can thus be argued that the DP *Sunli* moves from Spec,TP to Spec,ShiftP, initiating a topic chain that also allows for the interpretation of the embedded NS<sup>48</sup>:



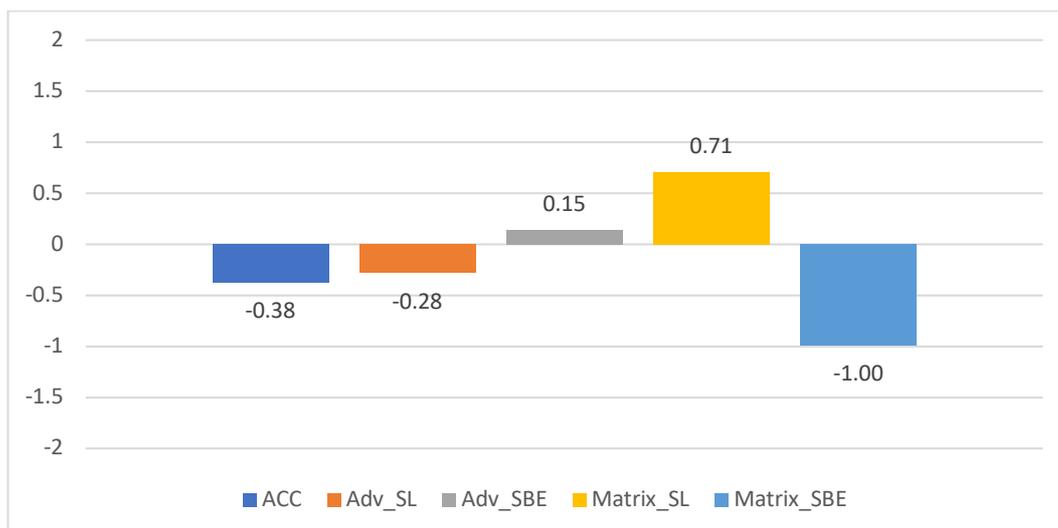
Further evidence is provided by the following example, in which the same structural context used for (12) is preceded by a context suggesting an antecedent for the embedded NS that is crucially different from the overt A-Topic:

(14) [*Sunli xiang rang ta de nü'er zai Nankai Daxue xuexi. Zuotian Sunli de nü'er tongguo le Tianjin Daxue yixuexi de gaokao.*]

[Sunli would like her daughter to study at Nankai University. Sunli's daughter passed the admission exam to enter the faculty of medicine of Tianjiin University.]

\*[*Sunli*]<sub>i</sub>, *suiran pro tongguo le gaokao*, t<sub>i</sub> *haishi bu gaoxing.* (= 12)

<sup>48</sup> Even though in example (13) the embedded empty category linked to the relevant A-Topic via AGREE is identified as a *pro*, it could be also assumed to be a trace of a null argument that moves from Spec,TP to Spec,FamP in the embedded C-domain. However, since the present analysis does not allow us to establish with certainty the nature of embedded silent G-Topics, this issue is left open for further research. As it is immaterial for our analysis, in the following examples *pro* will be used consistently, when referring to embedded NSs selecting as their antecedent a null G-Topic.



Graph 2.6: *Overt A-Topic preceding a pre-matrix concessive with context*<sup>49</sup>

The interpretation of the adverbial NS is not clear, as no significant differences are attested comparing the rating expressed for *Sunli* and *Sunli's daughter*. This ambiguity seems to affect (negatively) acceptability. As a matter of fact, this sentence has been rated significantly less acceptable (M = -0.38, SD = 0.93) than its counterpart without a context in (12)  $t(167) = 10.4, p < .001$ . These data support the proposal according to which the DP *Sunli* is interpreted as an A-Topic: since the specifier position of the ShiftP is already occupied, no null A-Topics (e.g., *Sunli's daughter*) can be located there. Thus, it can be argued that the presence of an overt A-Topic blocks any alternative interpretation, despite the presence of a 'pragmatically clear' context:

(14) [<sub>ShiftP</sub> <~~Sunli de nü'er~~> [*Sunli*]<sub>i</sub>, [<sub>FrameP</sub> [*suiran pro tongguo le gaokao*], [<sub>TP</sub> *ti haishi bu gaoxing*].]]

The proposal put forth so far seems to account for the different degrees of acceptability expressed for the NSs in conditional and concessive adverbial clauses. Specifically, the output of this experimental test leads us to the conclusion that a distinction between central and peripheral adverbial clauses must be also assumed for Chinese. However, conditional adverbial clauses in Chinese are not derived through OP movement (*contra* Haegeman 2004). Therefore, the lower acceptability judgments expressed for sentences like (7) and (9b) can be explained in terms of intervention effects: the A' movement of the A-Topic in Chinese interferes with the movement of the (central) adverbial clause. On the other hand, no intervention effects are attested in a sentence like (12) since peripheral adverbial clauses (e.g., concessives) are originally merged in the matrix split-CP also in Chinese.

<sup>49</sup> In the Graph, Adv\_SL<sub>Dau</sub> is 'adverbial Sunli's daughter' and Matrix\_SL<sub>Dau</sub> is 'matrix Sunli's daughter'.

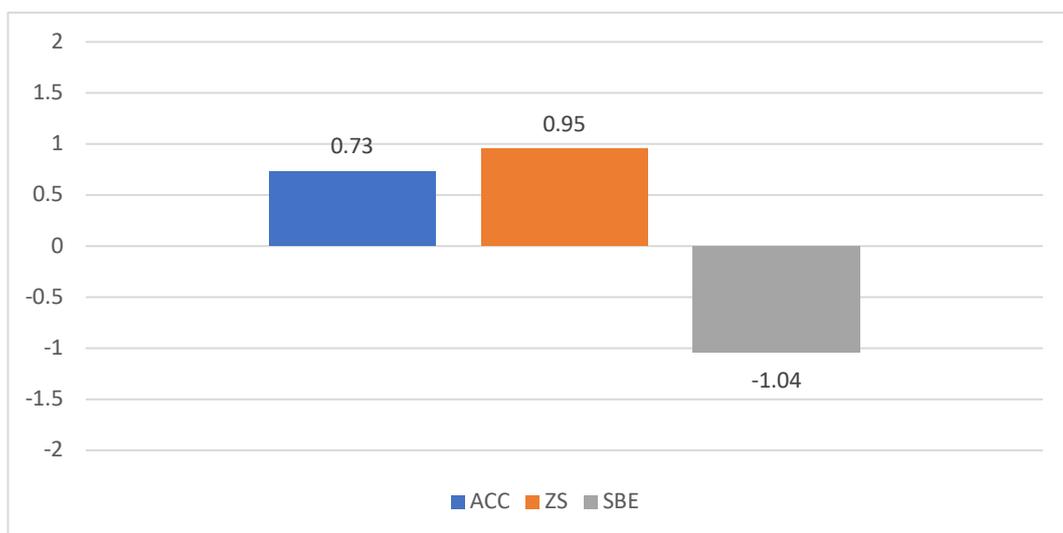
### 2.2.2 NSs single embedded under a bridge verb

In the following sections, embedded Topics and NSs under bridge verbs will be analyzed. Specifically, it will be investigated whether and to what extent ambiguity and Topic shifts can affect acceptability.

The first condition to be analyzed is that of an NS in the complement of the bridge verb *shuo* ‘to say’ without a context:

- (15) *Zhangsan shuo pro yao qu jie ta qizi.*  
 Zhangsan say pro have to go pick up 3.SG wife  
 ‘Zhangsan said (he) has to go and pick up his wife.’

According to our informants, this sentence is acceptable, and the embedded NS is interpreted as co-referent with *Zhangsan*, as Graph 2.7 below shows:



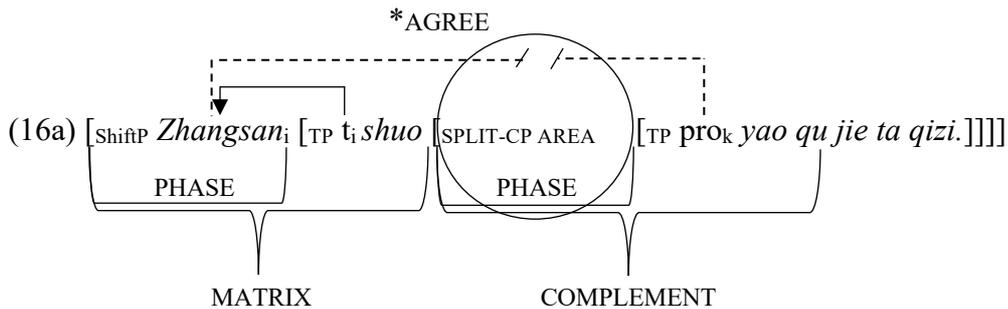
Graph 2.7: NS embedded under a bridge verb

As a matter of fact, the difference between the ratings expressed for *Zhangsan* ( $M = 0.73$ ,  $SD = 0.65$ ) and *somebody else* is statistically significant  $t(167) = -24.6$ ,  $p < .001$ .

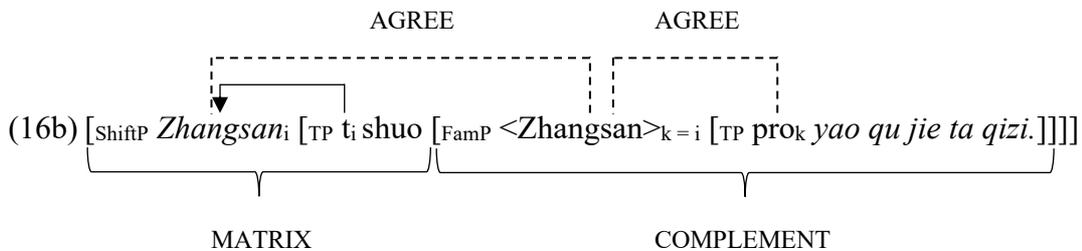
Following Frascarelli (2007), and in line with the analysis proposed above for adverbial clauses, it can thus be argued that the overt DP *Zhangsan* in the left periphery is interpreted as an A-Topic, which starts a topic chain allowing for the interpretation of the embedded NS.

However, it should be reminded that a NS in embedded complements is not probed directly by the matrix A-Topic, but by a silent low copy of the matrix A-Topic in the Spec,FamP (G-Topic) of the local (i.e., embedded) C-domain (cf. Frascarelli 2007). This analysis is also in line with the *phase impenetrability condition* (PIC, cf. Chomsky 2000, 2001), according to which “an element X buried

within a lower phase may become inaccessible to an element Y sitting in a higher phase. If X and Y must establish a syntactic relation to ensure the convergence of the derivation, X must then move out of the domain that is to be transferred so that it has a chance to interact with Y, yielding successive cyclicity” (Nunes 2016: 63). Hence, since only CPs and vPs are phases (cf. Chomsky 2000), an NS in Spec,TP cannot enter an AGREE relation with the matrix A-Topic, since TP is not a phase and a PIC violation would result:



On the contrary, the matrix A-Topic can enter an AGREE relation with a (silent) G-Topic in the embedded C-domain, which is a phase. In turn, the silent G-Topic will enter an AGREE relation with the NS in Spec,TP, in its local C-domain. Hence, a structure like the following can be proposed for sentence (15):



According to different scholars (cf., among others, Emonds 2004, Heycock 2006, Basse 2008) the complement of a bridge verb is an assertion and has root-like properties, like the possibility to negate their content (17) or to allow (long distance) wh-extraction (18):

(17) Mary says that she skipped class, but she didn't.

(18) [Who]<sub>i</sub> do you think t<sub>i</sub> stole the cookies?

(Basse 2008: 54-55)

It should be recalled that the selection of an (A-)Topic is a conversation move, which is only possible in clauses endowed with illocutionary force (cf. Krifka 2007). As the complement of a bridge

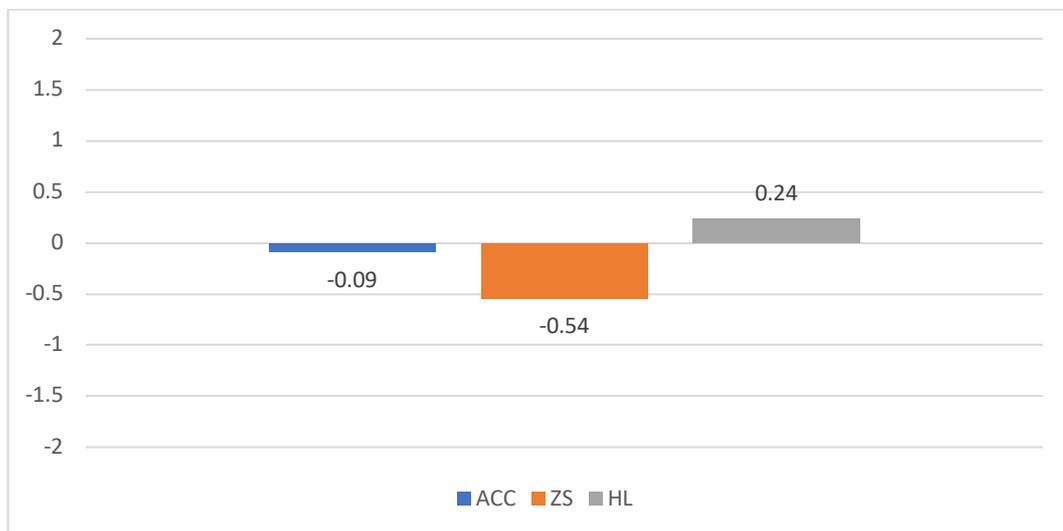
verb is an assertion, it is endowed with illocutionary force and, as such, it allows for the realization of an embedded A-Topic (cf. B&F 2010).

This assumption seems to hold also for Chinese, as it is shown in the following example, in which the same structural context used in (15) is reproposed with a context suggesting an antecedent that is different from the matrix A-Topic (e.g., *Hongliang*; HL in the Graph 2.8):

(19)[*Zai huiyi qijian Hongliang turan zhan-qi-lai pao le chu*]

[During the meeting, Hongliang stood up abruptly and ran out of the room]

*Zhangsan shuo pro yao qu jie ta qizi.* (= 15)



Graph 2.8: NS embedded under a bridge verb with context

Comparing Graph 2.8 with Graph 2.7, it can be argued that the context affects informants' interpretation. As a matter of fact, ratings for *Zhangsan* in sentence (19) ( $M = -0.54$ ,  $SD = 1.18$ ) are significantly lower than those expressed for *Zhangsan* in sentence (15) (without a context)  $t(167) = -11.5$ ,  $p < .001$ . Indeed, interpretation ratings expressed for *Honliang* ( $M = 0.24$ ,  $SD = 1$ ) are significantly higher than those for *Zhangsan*  $t(167) = 2.8$ ,  $p = .01$  for sentence (19).

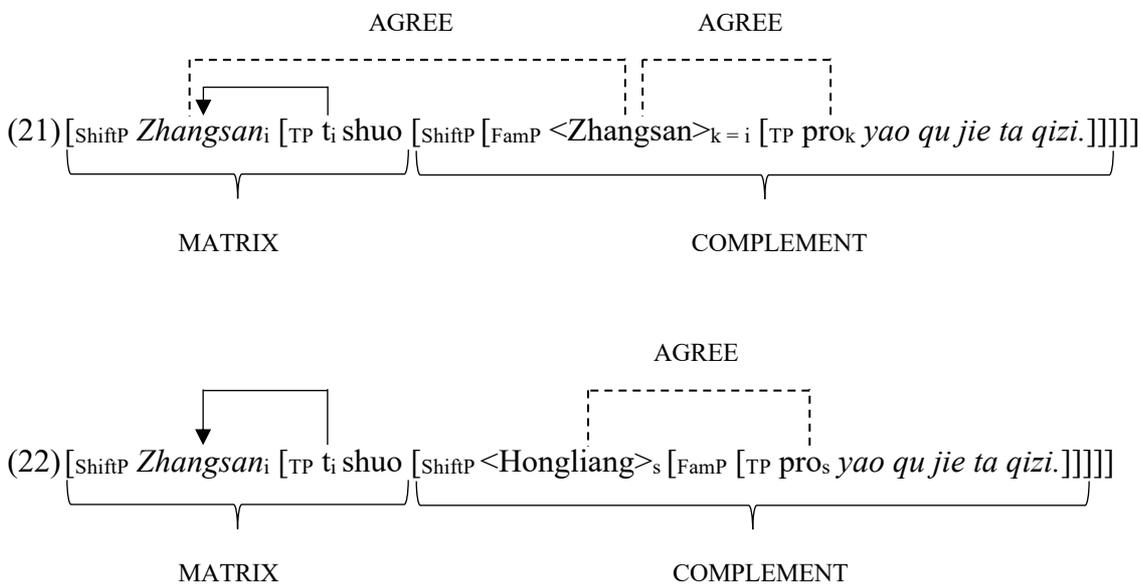
In line with B&F (2010), it can thus be argued that the embedded C-domain of the bridge verb *shuo* ('to say') contains a ShiftP node that can host a (silent) A-Topic, allowing for the interpretation

of the embedded NS as co-referent with an antecedent (*Hongliang*) that is different from the matrix A-Topic (*Zhangsan*)<sup>50</sup>.

Hence, a structure like the following is proposed for the complements of bridge verbs in general:

(20) ... say/think [<sub>ShiftP</sub> [<sub>FamP</sub> [<sub>TP</sub>

According to this structure, sentences (15) and (19) can be (re-)analyzed as follow: (i) in the former no shift is proposed; hence its Spec,ShiftP is empty and a low copy of the matrix A-Topic (<Zhangsan><sub>k</sub>) is realized as a silent G-Topic in Spec,FamP (21); (ii) on the other hand, in the latter a silent A-Topic (<Hongliang><sub>s</sub>) is realized in Spec,ShiftP (22):



However, the data in Graph 2.8 also show that the presence of a context suggesting an antecedent that is different from the matrix A-Topic affects acceptability. As a matter of fact, the judgments expressed for (19) ( $M = -0.09$ ,  $SD = 0.84$ ) are significantly lower than those expressed for (15) (without a context)  $t(167) = 7.9$ ,  $p < .001$ . It can thus be concluded that the presence of a silent (embedded) A-Topic bleeds acceptability in Chinese.

This proposal seems to be further supported by the data regarding acceptability and interpretation of double embedded NSs in the complement of embedded bridge verbs, to be discussed in the following section.

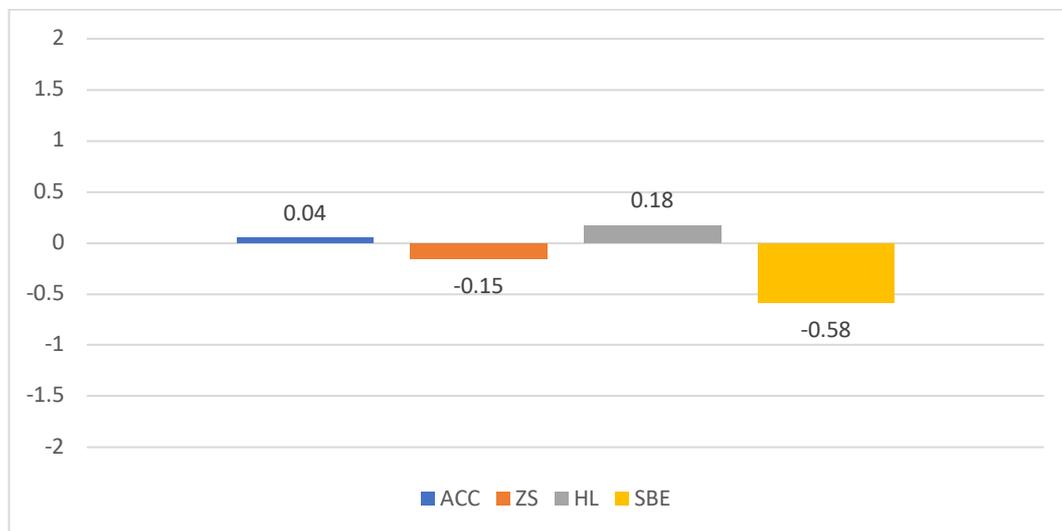
<sup>50</sup> Similar to silent G-Topics (cf. note 7), a merge operation is also proposed for silent A-Topics in compliance with the Economy principle. Also in this case, a *pro* will be assumed in Spec,TP when its antecedent is a silent A-Topic. However, this issue is left open for further research.

### 2.2.3 NS double embedded under a bridge verb – 3<sup>rd</sup> person intervention

Double embedded clauses were also tested to investigate the influence of ambiguity and Topic shift on the acceptability and interpretation of embedded NSs.

The first structural context to be analyzed in this section is that of a double embedded NS in the complement of a bridge verb that, in turn, is embedded under another bridge verb (both with overt DPs in their split-CP area):

- (23) *Zhangsan shuo Hongliang renwei pro yinggai mai yi liang che.*  
 Zhangsan say Hongliang think pro must buy one CL car  
 ‘Zhangsan said that Hongliang thinks that (he) must buy a car.’



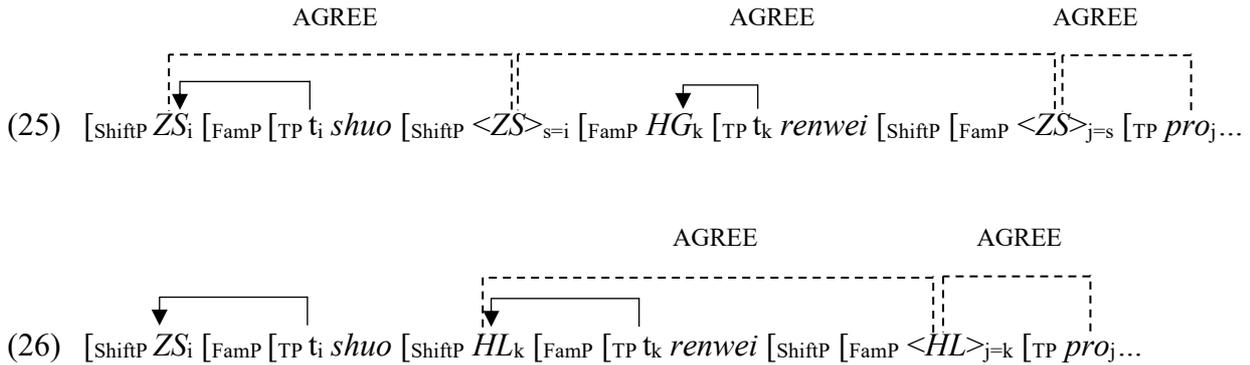
Graph 2.9: NS double embedded under a bridge verb

From a first comparison between the acceptability data in Graphs 2.9 and 2.7, it can be argued that a double embedded NS ( $M = 0.04$ ,  $SD = 0.78$ ) is significantly less acceptable than an NS that is single embedded under a bridge verb ( $t(167) = -7.2$ ,  $p < .001$ ).

From an interpretative viewpoint, three comparisons can be provided for sentence (23): (i) the rating expressed for *somebody else* ( $M = -0.58$ ,  $SD = 0.93$ ) are significantly lower than those regarding *Zhangsan* ( $t(167) = 2.2$ ,  $p = .03$ ); similarly, (ii) *somebody else* is also selected significantly less than *Hongliang* ( $t(167) = 3.9$ ,  $p = .001$ ); on the contrary, (iii) when comparing the ratings expressed for *Zhangsan* ( $M = -0.15$ ,  $SD = 0.93$ ) with those regarding *Hongliang*, no significant differences can be attested ( $t(167) = -1.9$ ,  $p = .06$ ). This means that both the matrix DP *Zhangsan* and the embedded DP *Hongliang* are the most feasible antecedents in this structural context (since no differences are attested between these two options), whereas *somebody else* is the least viable option:

(24) *Hongliang* = *Zhangsan* > *Somebody else*

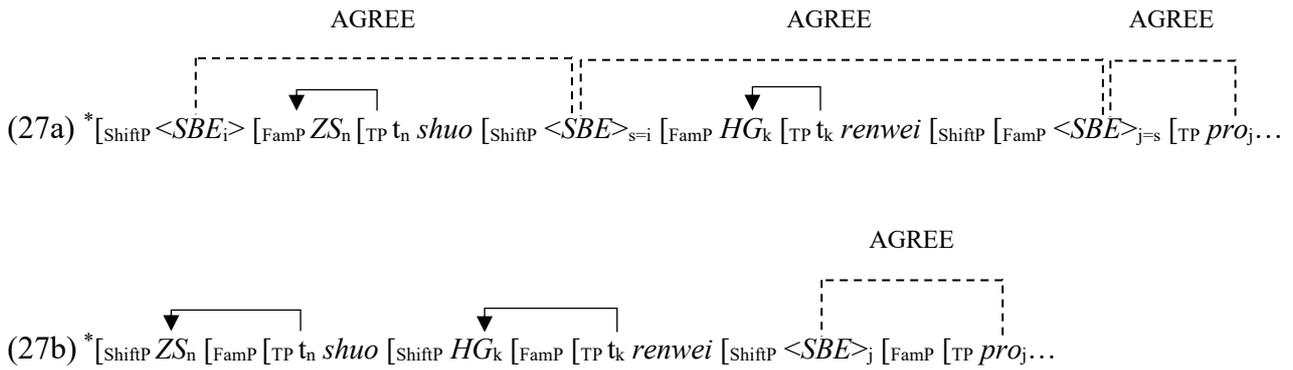
The absence of a significant difference between the ratings expressed for *Zhangsan* and *Hongliang* can be explained once again in the light of the fact that the C-domain in the complement of bridge verbs can host A-Topics. As a matter of fact, two structures can be proposed to explain this possible double interpretation. Compare (25) and (26):



As is shown, in one case *Hongliang* in (25) can be interpreted as an embedded G-Topic which, as such, does not intervene in (A-)Topic chains (cf. Frascarelli 2007); consequently, *Zhangsan* is interpreted as an A-Topic, heading a long topic chain: (i) first, the overt A-Topic *Zhangsan*<sub>i</sub> enters an AGREE relation with the single embedded (silent) A-Topic <*Zhangsan*><sub>s</sub>; then, (ii) <*Zhangsan*><sub>s</sub> enters an AGREE relation with the double embedded (silent) G-Topic <*Zhangsan*><sub>j</sub>; and (iii) finally, the silent G-Topic <*Zhangsan*><sub>j</sub> enters an AGREE relation with the double embedded NS, which is thus interpreted as co-referent with *Zhangsan*.

In a second case, in order to interpret the double embedded NS as co-referent with *Hongliang*, it must be assumed that the latter is interpreted as an embedded A-Topic, which (i) breaks the previous topic chain instantiated by the DP *Zhangsan* and (ii) enters an AGREE relation with its silent low copy in the double embedded Spec,FamP which, in turn, enters an AGREE relation with the double embedded NS.

As for *somebody else*, it has been already shown that this option has been rated significantly lower than *Zhangsan* and *Hongliang*. As a matter of fact, such a possibility would imply either that (i) both the matrix DP *Zhangsan* and the embedded (silent) DP *Hongliang* are G-Topics, while ‘somebody else’ determined a Topic shift as a silent A-Topic, as interpreted in (27a); or (ii) the silent A-Topic SBE determines a Topic shift in the most embedded C-domain, as in (27b):



However, though theoretically possible, both options are hardly probable from a conversational viewpoint. Indeed, to choose a *generic* silent A-Topic as a chain head, when two referential overt DPs are available in the sentence, is very unnatural and hard to be processed. This consideration can be a feasible explanation for the lower acceptability of *somebody else* as an antecedent.

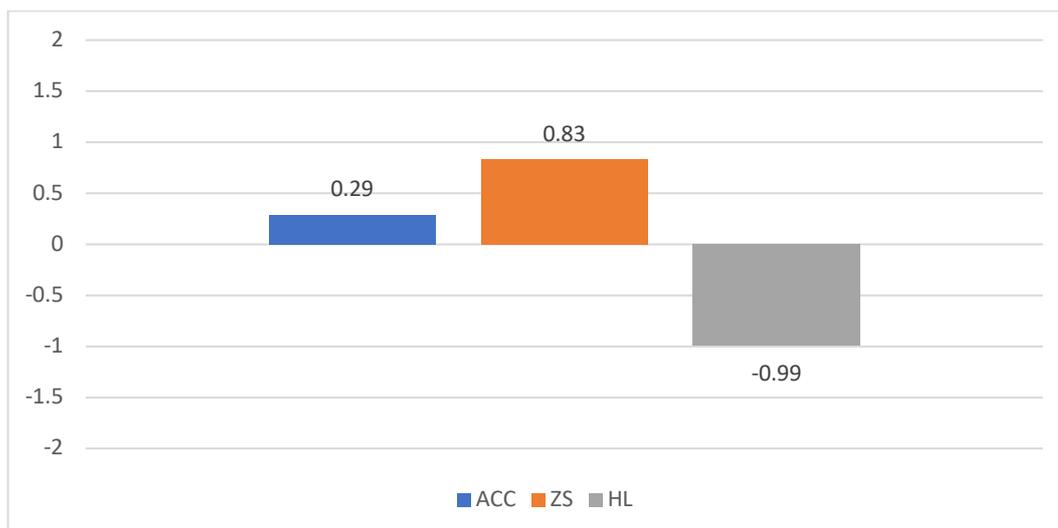
Nevertheless, it should be reminded that at the beginning of this section it has been shown that this structural context is less acceptable than that in (15), in which the NS was single embedded. It can thus be argued that the ambiguity derived from the possibility to have two feasible antecedents negatively affects acceptability.

This proposal seems to be supported by examples like (28) below, in which the structural context of (23) is proposed again, with a context suggesting *Zhangsan* as the most feasible antecedent:

(28)[*Zhangsan de jiu che turan huai le. Hongliang shi yi ge weixiuyuan. Jiancha che yihou, Hongliang faxian le weixiu bi mai yi liang xin che geng gui.*]

[‘Zhangsan’s old car suddenly stopped. Hongliang is a mechanic. After checking the car, Hongliang found out that fixing the car would be more expensive than buying a new one.’]

*Zhangsan shuo Hongliang renwei pro yinggai mai yi liang che.* (= 23)



Graph 2.10: NS double embedded under a bridge verb with context (28)

As the data in Graph 2.10 show, the presence of such context seems to help interpretation and improve acceptability. As a matter of fact, statistical analyses reveal that (i) (28) is more acceptable ( $M = 0.29$ ,  $SD = 0.86$ ) than (23) (without a context)  $t(167) = -1.7$ ,  $p = .04$ , and that (ii) the difference between the rating expressed for *Zhangsan* ( $M = 0.83$ ,  $SD = 0.74$ ) and for *Hongliang* in (28) is statistically significant  $t(167) = -9.5$ ,  $p < .001$ .

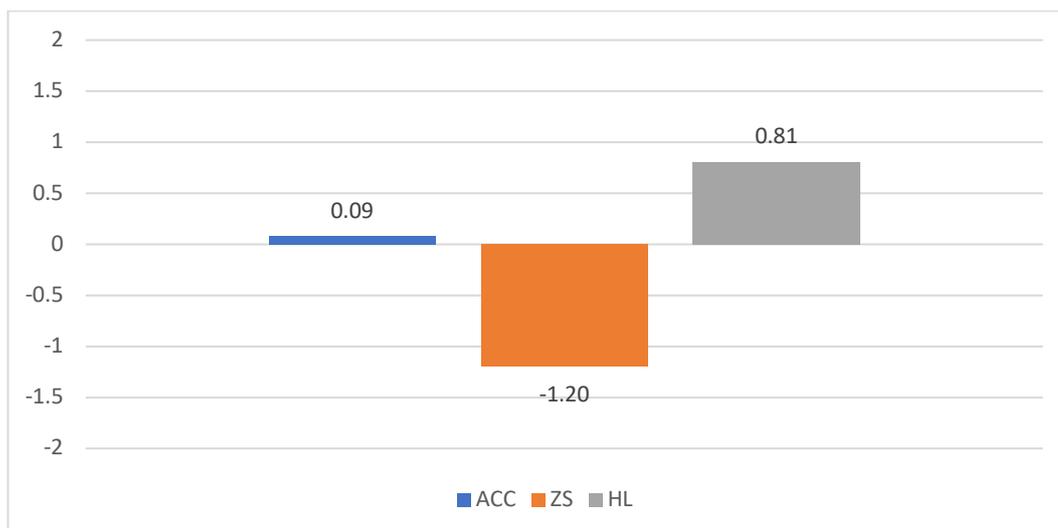
Therefore, it can be plausibly argued that the context in (28) leads informants to interpret the DP *Zhangsan* as an A-Topic, and the DP *Hongliang* as a G-Topic, positively affecting acceptability.

So far, it might seem appealing to argue that acceptability increases with a context that disambiguates the sentence. However, this proposal does not seem to hold with a context suggesting the embedded DP *Hongliang* as the most feasible antecedent, as in (29):

(29)[*Hongliang zhaodao le xin de gongzuo. Ta xianzai bi yiqian zhuan de duo. Yi nian yihou ta shefa sheng henduo qian. Xianzai Hongliang kaolü ba ta de zixingche huancheng yi liang gengjia shufu de cheliang.*]

[‘Hongliang found a new job, and he is earning more money than before. After one year he managed to save a lot of money. Hongliang is now considering changing his old bike with a more comfortable mean.’]

*Zhangsan shuo Hongliang renwei pro yinggai mai yi liang che.* (= 23)



Graph 2.11: NS double embedded under a bridge verb with context (29)

According to the interpretive data in Graph 2.11, it can be argued that the context is clear, as informants coherently expressed higher ratings for *Hongliang* ( $M = 0.81$ ,  $SD = 0.42$ ) rather than *Zhangsan*  $t(167) = 16.5$ ,  $p < .001$ . However, acceptability does not seem to increase significantly, as the difference between (29) ( $M = 0.09$ ,  $SD = 0.84$ ) and (23) is not statistically significant  $t(167) = 0.35$ ,  $p = .36$ .

Nevertheless, this sentence cannot be considered as (completely) unacceptable, since no significant differences are attested when comparing its acceptability rating with those expressed for (28) (which, it should be recalled, is significantly more acceptable than (23)). These data can be explained in the light of the fact that the difference between the contexts in (28) and in (29) is that the latter proposes a topic shift (from *Zhangsan* to *Hongliang*), whereas the former does not.

It can be thus argued that the (positive) effects of a disambiguating context in this structural context are mitigated by those of the topic shift, which negatively affects acceptability, as illustrated in §2.2.2. We therefore propose the ‘acceptability hierarchy’ given in (30), as it seems to account for the scalar acceptability ratings expressed for sentences (23), (28) and (29):

(30) + ambiguity < - ambiguity; + Topic shift < - ambiguity; - Topic shift

To conclude, the ambiguity emerging by the fact that two referents or more can be selected as A-Topics (thus serving as feasible antecedents for the relevant NS), seem to be the strongest bleeding factor on acceptability. However, when no ambiguity is at stake, (silent) Topic shift seems to affect negatively the perception of informants, so that low acceptability rates are provided, if compared to sentences with no Topic shift.

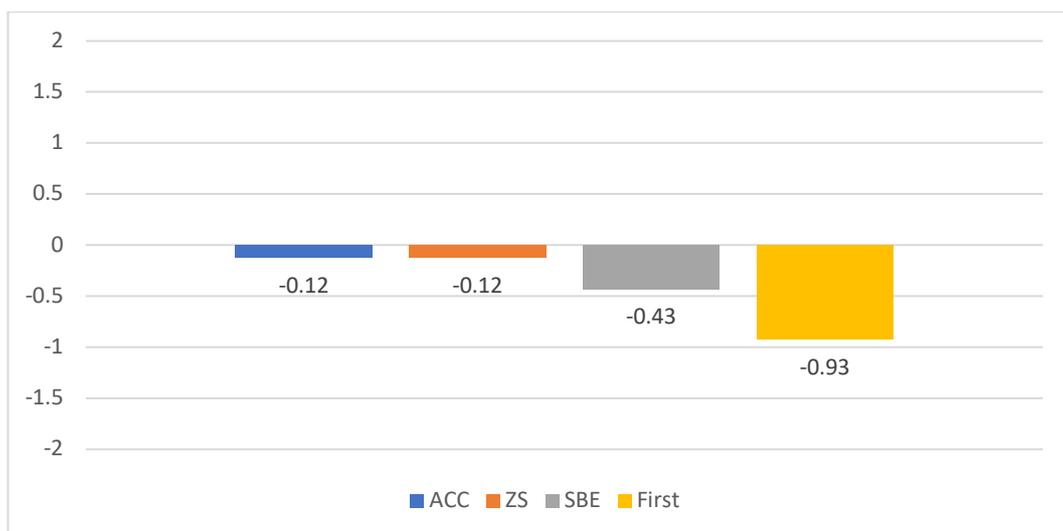
This proposal is also supported by the analysis to be illustrated in the following section, carried out for double embedded NSs with a 1<sup>st</sup> person pronoun intervenient.

#### 2.2.4 NS double embedded under a bridge verb – 1<sup>st</sup> person intervention

According to Frascarelli (2018), 1<sup>st</sup>/2<sup>nd</sup> person pronouns instantiate different linking (“logophoric”) relations, not affecting a topic chain started by a 3<sup>rd</sup> person A-Topic (in line with Sigurdsson 2011).

To check whether this assumption can also be assumed for a radical NS language like Chinese, a structural condition with a double embedded NS under a bridge verb, with a 1<sup>st</sup> person pronoun intervenient, has been tested. A sample sentence and relevant data are presented below:

- (31) ??*Zhangsan shuo wo renwei pro yinggai mai yi liang che.*  
 Zhangsan say 1.SG think pro must buy one CL car  
 ‘Zhangsan said that I think that (I/he) must buy a car.’



Graph 2.12: NS double embedded with 1<sup>st</sup> person intervention

From an acceptability point of view, no significant differences are attested when comparing (31) with (23) above (with a 3<sup>rd</sup> person embedded subject). However, contrary to (23), the embedded 1<sup>st</sup> person pronoun *wo* ‘I’ does not seem to break the topic chain started by the overt A-Topic *Zhangsan*, since the former (M = -0.93, SD = 0.84) has been rated significantly lower  $t(167) = -2.35, p = .03$  than the latter (in line with Frascarelli 2018, Sigurdsson 2011). Nevertheless, no other significant differences are attested comparing the interpretive data, indicating that *somebody else* is as a plausible option as *Zhangsan* to be selected as a feasible antecedent for the relevant NS.

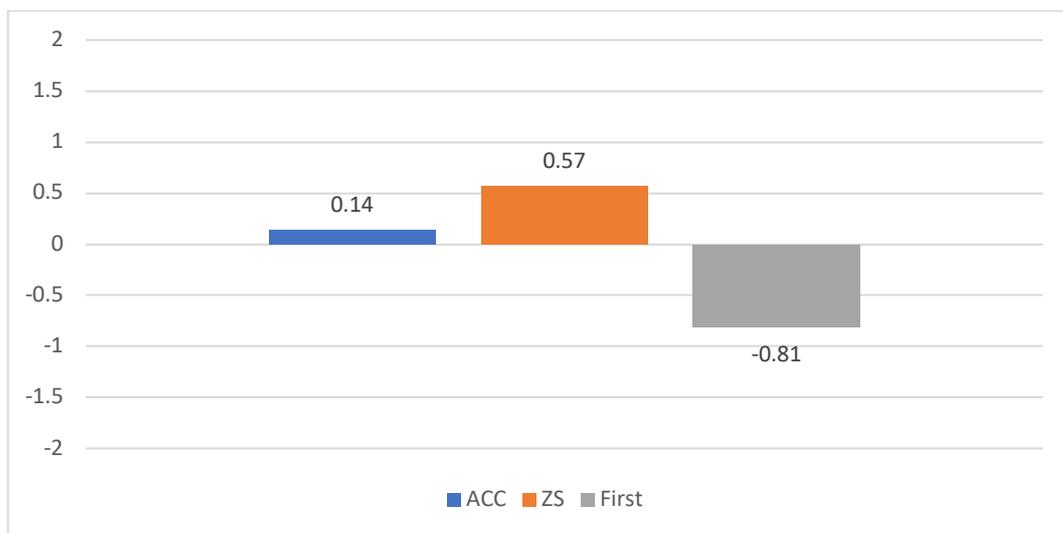
Similar to the analysis proposed for sentence (23), in which two possible readings affected acceptability, the ambiguity between *Zhangsan* and *somebody else* can also account for the low acceptability expressed for the structural context in (31).

To check whether a disambiguating context, with no Topic shift, might increase acceptability of this structural context, let us consider in (32a) below the influence of a context suggesting the matrix A-Topic *Zhangsan* as the most feasible antecedent:

(32a) [*Wo you yi ge zai qiche jingxiaoshang gongzuo de pengyou. Zhe ge pengyou gaosu wo Zhangsan de jiu qiche huai le, suoyi Zhangsan qu guo wo de pengyou de shangdian kan le yixia xin de Tesila qiche.*]

[‘I have a friend that works in a car dealer. This friend of mine told me that Zhangsan went there to have a look to the new Tesla car because his old car broke.’]

*Zhangsan shuo wo renwei pro yinggai mai yi liang che.* (= 31)

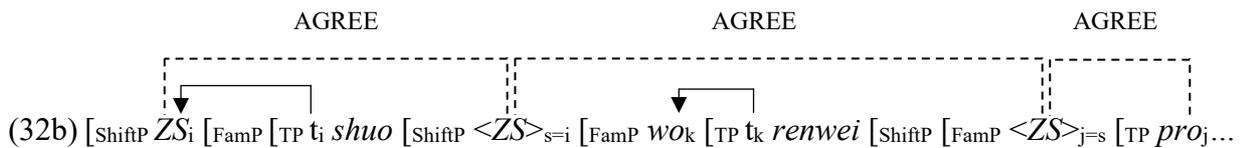


Graph 2.13: NS double embedded with 1<sup>st</sup> person intervention with context (32a)

If we compare the data in Graph 2.13 with those in Graph 2.10 above (regarding sentence (28) with a 3<sup>rd</sup> person intervenient and a context suggesting the matrix A-Topic as an antecedent) different similarities arise. First, (32a) is as acceptable (M = 0.14, SD = 0.99) as (28), since no significant differences are attested when comparing data regarding acceptability  $t(167) = 1.1, p = .26$ . Second, similar to the comparison between (28) and (29), also in this case acceptability increases comparing sentences (32a) (M = 0.14, SD = 0.99) and (31) (without a context)  $t(167) = -1.97, p = .02$ .

As for interpretation, *Zhangsan*'s selection ( $M = 0.57$ ,  $SD = 0.76$ ) is significantly more frequent than *wo*'s  $t(167) = -5.0$ ,  $p = < .001$ . Furthermore, if we compare the ratings expressed for *Zhangsan* in (32a) and in (28), no significant differences are attested. This means that the context is clear-cut and that the matrix A-Topic is selected as the most feasible antecedent also in this case; moreover, in both cases ((32a) and (28)) the embedded intervener is interpreted as a G-Topic, regardless of whether it is a 3<sup>rd</sup> or 1<sup>st</sup> person DP.

The following structure can thus be proposed for sentence (32a):



Let us finally check this structural context with a context suggesting the embedded DP *wo* as the most feasible antecedent, in order to see whether there are differences or similarities with its 3<sup>rd</sup> person counterpart in (29). Consider example (33) with its related Graph 2.14:

- (33a) [*Zuotian wo gaosu Zhangsan wo de qiche huai le erqie weixiuyuan shuo wo de qiche tai jiu le, suoyi bu zhide xiu le.*]  
 [‘Yesterday I told Zhangsan that my car broke, and the mechanic said that it is too old, so it’s not use to fix it at this point.’]

*Zhangsan shuo wo renwei pro yinggai mai yi liang che.* (= 31)



B&F (2010); (ii) ambiguity can affect interpretation and, consequently, acceptability; (iii) a (covert or overt) topic shift affects acceptability but not interpretation.

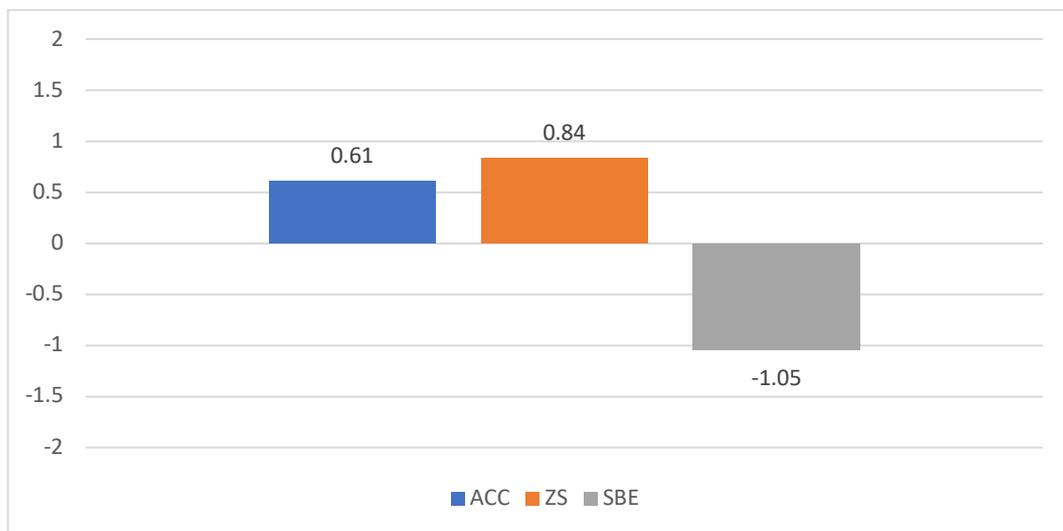
### 2.2.5 NS embedded under a factive verb

Let us now analyze the data regarding factive verbs which, as it will also be shown below, present structural differences with respect to bridge verbs from the viewpoint of the possibility to host A-Topics in their complement clauses.

The first structural context to be analyzed in this section is that of an NS embedded in the complement of a factive verb, without a specific context:

- (35) *Zhangsan hen yihan pro bu neng gei Sunli qian.*  
 Zhangsan very regret pro NEG can give Sunli money  
 ‘Zhangsan regrets that (he) cannot give money to Sunli.’

As the data in the Graph 2.15 below show, this sentence is judged as acceptable by informants:



Graph 2.15: NS embedded under a factive verb

From an interpretive viewpoint, the NS is interpreted as co-referent with *Zhangsan*, similarly to sentence (15) with an NS single embedded under a bridge verb.

In line with Frascarelli (2007), and the analysis carried out so far, it can be argued that *Zhangsan* is interpreted as an A-Topic also in this case. Hence, the structure in (37) below can be proposed for (35), similarly to the structure in (16b) (reproposed in (36) below) for (15) above:

(36) BRIDGE VERB

[ShiftP *Zhangsan*<sub>i</sub> [TP *t*<sub>i</sub> *shuo* [FamP <*Zhangsan*><sub>k=i</sub> [TP *pro*<sub>k</sub> *yao qu jie ta qizi*.]]]]

(37) FACTIVE VERB

[ShiftP *Zhangsan*<sub>i</sub> [TP *t*<sub>i</sub> *hen yihan* [FamP <*Zhangsan*><sub>k=i</sub> [TP *pro*<sub>k</sub> *bu neng gei Sunli qian*.]]]]

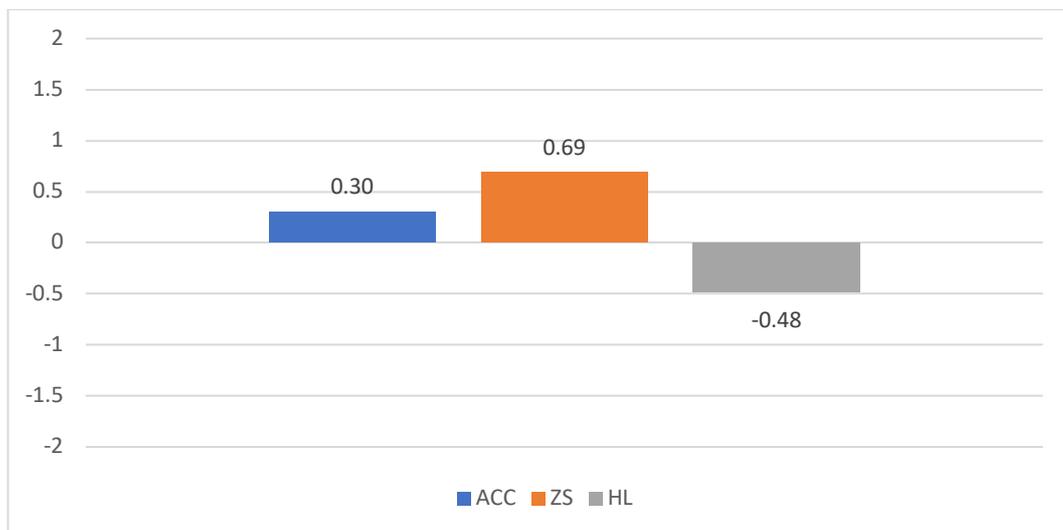
However, in B&F (2010) it is argued that the complements of factive and bridge verbs have different properties, since the former is not endowed with illocutionary force and, as such, it cannot host an A-Topics in its C-domain, contrary to the latter. To check whether this proposal can also hold for a language like Chinese, let us consider the example in (38), in which a sentence with the same structure of (35) is proposed again with a context suggesting an antecedent (*Hongliang*) that is different from the matrix A-Topic:

(38) [*Hongliang gaosu Zhangsan ta zuijin you kunnan, ta shiye le erqie ta nü'er Sunli xiang chuguo xuexi.*]

[*Hongliang* told *Zhangsan* that he has been having some difficulties lately, he lost his job and his daughter would like to study abroad.]

*Zhangsan hen yihan pro bu neng gei Sunli qian.* (= 35)

As the data in Graph 2.16 below show, this sentence is judged as statistically less acceptable (M: 0.30, SD: 0.78) than (35) above without a context  $t(167) = -3.1, p = .002$ :



Graph 2.16: NS embedded under a factive verb with context

The lower acceptability of sentence (38) can be explained in the light of two interconnected facts: (i) the complement of factive verbs cannot host A-Topics (cf. B&F 2010), and (ii) G-Topics are low copies of the relevant A-Topic, when silent (cf. Frascarelli 2007). Therefore, the impossibility to have a Topic shift, with a context suggesting an A-Topic that is different from the one in the matrix C-domain, seems to pose a problem for interpretation: on the one hand, informants are induced to understand that the person who cannot give money to *Sunli* might be *Hongliang* and, on the other, the embedded clause does not allow for this interpretation, thus affecting acceptability. As a matter of fact, the embedded NS is interpreted as co-referent with the matrix A-Topic *Zhangsan*, despite the presence of a context suggesting *Hongliang* as a feasible antecedent.<sup>51</sup>

Therefore, the following structure can be proposed for sentence (37):

(39) [<sub>ShiftP</sub> ZS<sub>i</sub> [<sub>TP</sub> t<sub>i</sub> hen yihan [<sub>smTP</sub> <HL> [<sub>FamP</sub> <ZS><sub>k=i</sub> [<sub>TP</sub> pro<sub>k</sub> bu neng gei Sunli qian.]]]]]

These data are also confirmed by the results obtained from another dependent t-test conducted for the present analysis, showing no statistical differences between the rating expressed for *Zhangsan* in (38) (M: 0.69, SD: 0.81) and in (35)  $t(167) = 1.35, p = .08$ . It can thus be argued that the DP *Zhangsan* is interpreted as the most feasible antecedent both in (38) and in (35), due to the structural similarities attested for these two sentences. Therefore, according to these data, it is plausible to argue that contextual information cannot supersede syntactic constraints.

Furthermore, interpretive data connected with the realization of A-Topics show that a difference between bridge and factive verbs must be also assumed for a language like mandarin Chinese.

To sum up, so far, three main phenomena seem to affect acceptability: (i) ambiguity, when informants have the option to interpret an embedded Topic as an A-Topic (i.e., in the C-domain embedded under a bridge verb); (ii) a ‘crash’ between context and clausal structure, when no A-Topic can be realized in embedded C-domains (i.e., complements of factive verbs, and central adverbial clauses); and (iii) topic shift (i.e., an NS double embedded under a bridge verb, with two possible A-Topics as antecedents).

## 2.2.6 NS in independent clauses

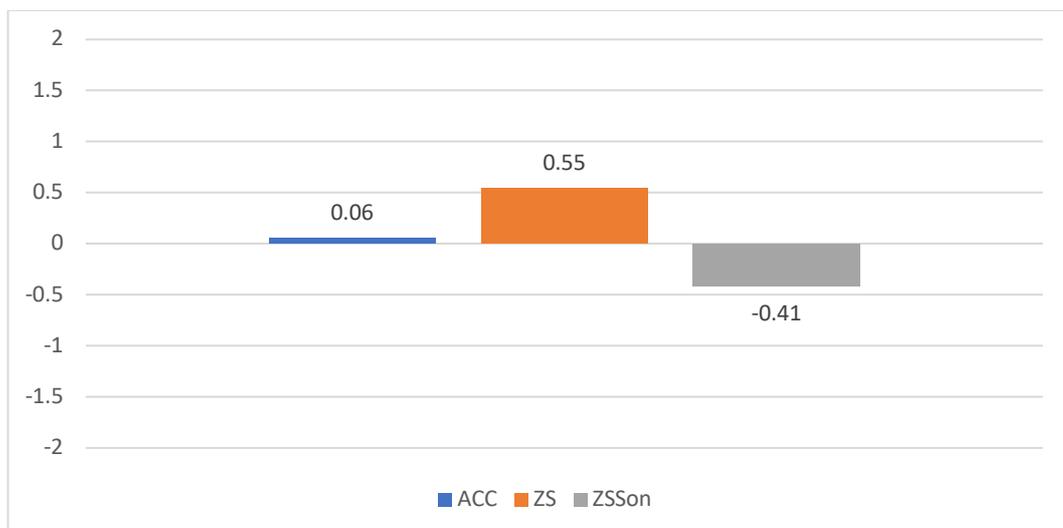
Let us now consider a few cases in which NSs are subjects of independent matrix clauses with no local antecedent, contrary to the examples analyzed in the sections above with local A-Topics either in the embedded clause (e.g., bridge verbs) or in the matrix C-domain (e.g., factive verbs and adverbials).

<sup>51</sup> The difference between *Zhangsan* (M: 0.69, SD: 0.81) and *Hongliang* is statistically significant  $t(167) = -6.1, p < .001$ .

In recent studies (cf. Frascarelli 2018, Frascarelli & Jiménez-Fernández 2019), it has been shown that these structural contexts are only marginally accepted in partial NS languages like Finnish and several varieties of Spanish. To check whether the absence of locality can bleed acceptability in a radical NS language like Chinese as well, different structural contexts will be proposed and analyzed in this section, starting with the case of an independent clause (Clause 2) with a matrix NS, preceded by a clause (Clause 1) proposing two possible antecedents, *Zhangsan* and *Zhangsan's son* (ZSSon in the Graphs):

- (40) [*Zhangsan pei ta de erzi qu yingyuan kan dianying.*]<sub>Clause1</sub>  
*Zhangsan accompany 3SG DE son go cinema watch movie*  
 [pro *hen gaoxing.*]<sub>Clause 2</sub>  
*pro very happy.*  
 ‘Zhangsan took his son to the cinema to watch a movie. (He) is happy.’

According to the few pieces of information given in Clause 1, either *Zhangsan* or *Zhangsan's son* could ‘be happy’. As a matter of fact, Frascarelli (2018) and Frascarelli & Jiménez-Fernández (2019) show that these types of sentences are only marginally acceptable in partial NS languages, since they are interpreted as ambiguous. However, the data in Graph 2.17 below show that the matrix NS in Clause 2 in (40) only gets one possible interpretation, namely, as co-referent with the DP *Zhangsan*, since the ratings expressed by our informants for the latter (M: 0.55, SD: 0.60) are significantly higher than those expressed for the DP *Zhangsan's son* ( $t(167) = -5.7, p < .01$ ):



Graph 2.17: NS in an independent clause

It can thus be argued that the DP *Zhangsan* in Clause 1 is interpreted as an A-Topic, starting a Topic chain and allowing for the interpretation of the matrix NS in Clause 2, despite the absence of a structural relation (namely, embedding) between the two relevant clauses:

- (41) [ShiftP *Zhangsan*<sub>k</sub> [FamP [TP t<sub>k</sub> *pei ta de erzi...*]]]Clause 1  
 [ShiftP [FamP <*Zhangsan*><sub>j=k</sub> [TP pro<sub>j</sub> *hen gaoxing.*]]]Clause 2

However, despite interpretative data exclude ambiguity, this sentence is only marginally accepted, since the acceptability ratings are just below zero which, as we recall, is the ‘fine’ level after standardization. These data show that Chinese native speakers display similarities both with speakers of consistent NS languages like Italian and with speakers of partial NS languages. Specifically, from an acceptability point of view, Chinese native speakers judge a matrix NS with no local antecedent as marginally acceptable, similarly to partial NS languages’ speakers (cf. Frascarelli 2018, Frascarelli & Jiménez-Fernández 2019). However, contrary to the latter, the Chinese informants who participated to this test did not interpret the relevant sentence as ambiguous, selecting the previous (only available) A-Topic in Clause 1 as the most feasible antecedent, similarly to Italian speakers (cf. Frascarelli 2018).

Since ambiguity does not seem to be a problem in this case, the marginality of this sentence can thus be explained in the light of the fact that the relevant A-Topic is not local. Nevertheless ‘rich’ contextual information seems to play an important role inducing acceptance of structural contexts with no local antecedent in Chinese (if no other syntactic constrain is at stake).

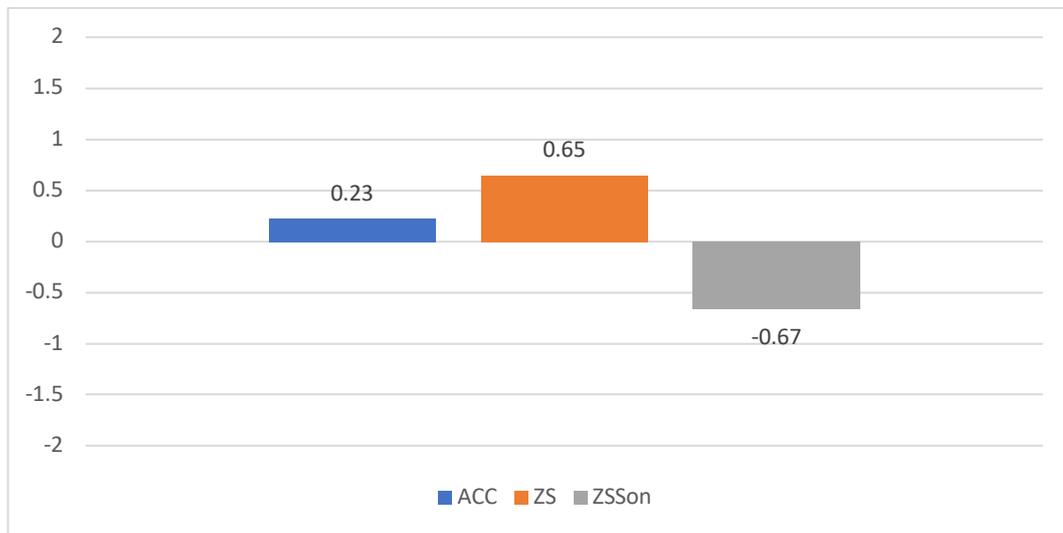
This proposal seems to be supported by sentences like (42) below, in which the same structure in (40) is presented again, with a context suggesting the overt A-Topic *Zhangsan* in Clause 1 as the most feasible antecedent for the NS in Clause 2:

- (42) [*Zhangsan shang xingqi shengbing le, zhe jian shir rang ta ganjue nanguo. Xianzai ta quanyu le, ta zhongyu keyi chuqu.*]  
 [Last week Zhangsan was sick, and this thing made him sad. Now he recovered and can finally go out.]

[*Zhangsan pei ta de erzi qu yingyuan kan dianying.*]Clause1  
 [pro *hen gaoxing.*]Clause2

The data in Graph 2.18 below show that informants interpret the matrix NS in Clause 2 as co-referent with *Zhangsan* (M: 0.65, SD: 0.58), rather than *Zhangsan’s son*  $t(167) = -8.9, p = < .01$ , in

line with the context. Furthermore, with a context that fosters the selection of *Zhangsan*, acceptability increases significantly (M: 0.23, SD: 0.74), compared to (40) above  $t(167) = 1.67, p = .05$ :



Graph 2.18: NS in an independent clause with context (42)

These data thus support the proposal put forth above, according to which ‘rich’ contextual information can help increasing acceptability when no local antecedent is available.

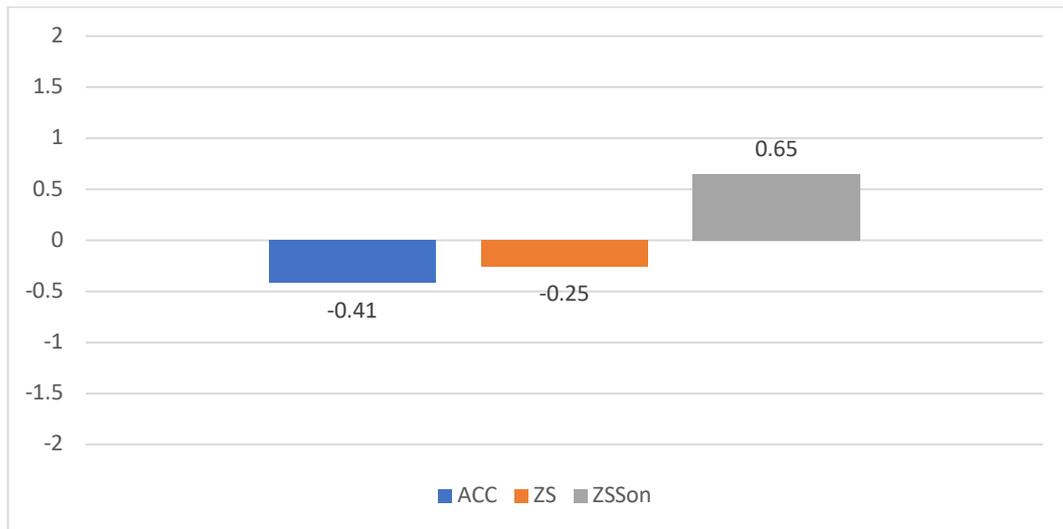
However, data also show that acceptability can only increase if the previous context does not propose a Topic shift, as it is shown in the following example, in which the same structure in (40) is proposed again, with a context suggesting *Zhangsan’s son* as the most feasible antecedent:

- (43) [*Zhangsan de erzi mei tongguo Yingyu kaoshi. Zhangsan jue ding rang ta de erzi gaoxing.*]  
 [Zhangsan’s son didn’t pass the English exam. Zhangsan decided to make his son happy.]

[*Zhangsan pei ta de erzi qu yingyuan kan dianying.*]<sub>Clause1</sub>

[*pro hen gaoxing.*]<sub>Clause2</sub>

Looking at the interpretive data in Graph 2.19 below, it can be argued that informants interpret the matrix NS according to the context, since the ratings for *Zhangsan’s son* (M: 0.65, SD: 0.76) are significantly higher than those expressed for *Zhangsan*  $t(167) = 3.0 p = < .01$ :



Graph 2.18: NS in an independent clause with context (43)

Hence, a topic shift from *Zhangsan* in Clause 1 to *Zhangsan's son* in Clause 2 must be assumed, and the following structure is thus proposed:

- (44) [ShiftP *Zhangsan*<sub>k</sub> [FamP [TP *t<sub>k</sub> pei ta de erzi...*]]] Clause 1  
 [ShiftP <*Zhangsan's son*><sub>j</sub> [FamP [TP *pro<sub>j</sub> hen gaoxing.*]]] Clause 2

As expected, the Topic shift in the example above is perceived as marginally acceptable. As a matter of fact, the acceptability ratings expressed for (43) (M: -0,41, SD: 0.71) are significantly lower than those expressed for (40) above  $t(167) = -4.9, p = < .01$ .

In conclusion, the present data support the proposal put forth for bridge verbs, according to which a silent A-Topic shift is judged as marginally acceptable by native Chinese speakers. Furthermore, data also seem to show that the absence of locality bleeds acceptability (like in partial NS languages), but contextual information can mitigate its negative effects, if no Topic shift is at stake.

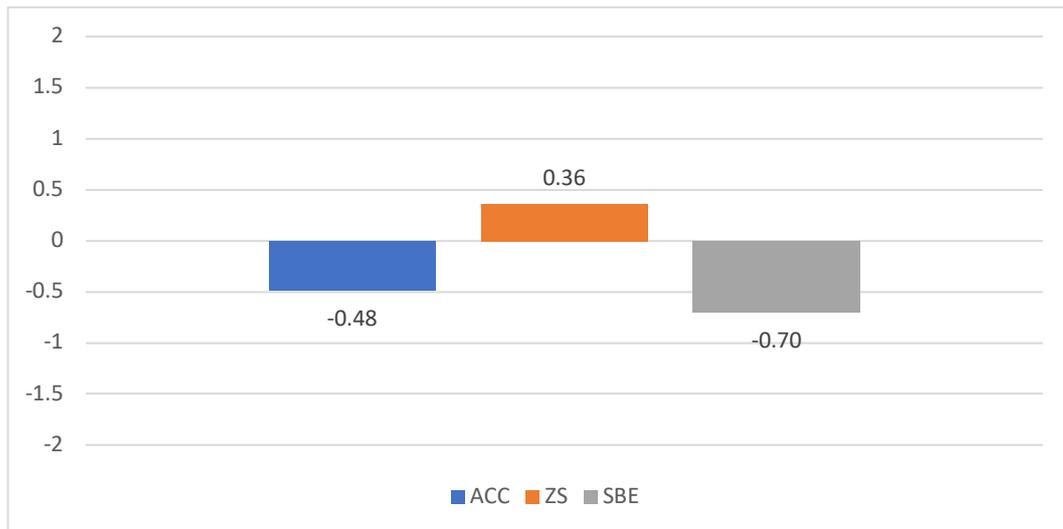
### 2.2.7 NS in the absence of a c-commanding antecedent

To provide additional support to the analysis conducted in section §2.2.6, let us now consider additional cases in which an NS has no local antecedent.

The first structural context to be analyzed in the present section is that of a sentence with an embedded NS and an embedded no c-commanding overt DP as intended antecedent:

- (45) *Zhangsan shuo de hua rang ren qingchu le pro shi wuzui de.*  
 Zhangsan say DE word let person understand PERF pro be innocent DE  
 ‘Zhangsan’s words let people understand (he) is innocent.’

As the data in Graph 2.20 below show, this sentence is nearly totally refuted from an acceptability point of view:



Graph 2.20: *NS with no local antecedent*

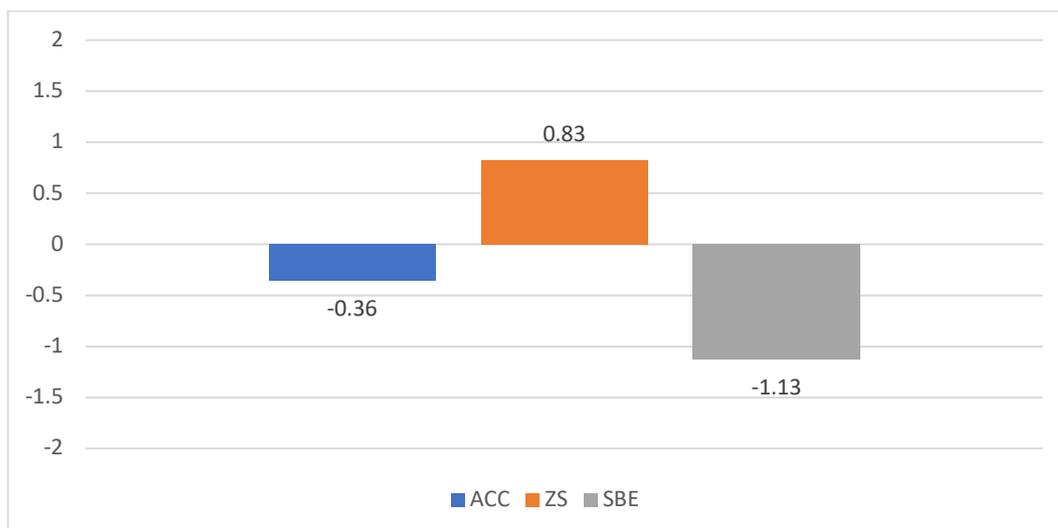
Statistical analyses show that interpretation is not ambiguous, since the rating expressed for *Zhangsan* (M: 0.36, SD: 0.71) are significantly higher than those regarding *Somebody else*  $t(167) = -4.2, p < .001$ . Nevertheless, this sentence is judged as not acceptable.

Furthermore, even using a context that suggests *Zhangsan* as the most feasible antecedent, as in (46) below, acceptability does not increase significantly<sup>52</sup>:

- (46) [Sunli is Zhangsan’s wife and she was killed one month ago. When the police contacted him, Zhangsan testified that he was working in the office when his wife was killed. Zhangsan also testified that he found out about his wife death when the police contacted him.]

*Zhangsan shuo de hua rang ren qingchu le pro shi wuzui de.* (= 45)

<sup>52</sup> The result of the T-test from comparison between (45) (M: -0.48, SD: 0.88) and (46) is  $t(167) = -1.1, p = .14$ .



Graph 2.21: NS with no local antecedent – with context

As it is showed in the Graph 2.21 above, sentence (46) is only marginally acceptable, even though the context is clear. Once again, the difference between the rating expressed for *Zhangsan* in (46) are significantly higher (M: -0.83, SD: 0.44) than those regarding *somebody else*  $t(167) = -10.9, p = < .003$ .

We reckon that these data can be explained in the light of the analysis carried out for bridge and factive verbs, according to which the “matrix subject” is in fact a Topic, moving from Spec,TP to Spec,Shift and, as such, interpreted as an A-Topic, thus allowing for the interpretation of the embedded NSs. If this proposal is on the right track, we can argue that the matrix “subject” of sentences like (45) and (46) is also located in Spec,ShiftP. As a matter of fact, sentence (45) (but also (46)) can be paraphrased as ‘As for Zhangsan’s words, they let people understand that he is innocent’, with ‘Zhangsan’s words’ being the A-Topic of the sentence.

Nevertheless, paraphrases do not provide a structural explanation and a formal analysis is required. In this respect, we propose that, in order to allow for the interpretation of the embedded NS as co-referent of *Zhangsan*, the presence of a silent G-Topic (embedded in the matrix clause and different from the relevant A-Topic) must be assumed in the embedded C-domain (which, we recall, cannot host A-Topics being in the complement of a non-bridge verb).

Hence, the following structure should be assumed:

- (47)  $^{??}$ [ShiftP [*Zhangsan shuo de hua*]<sub>j</sub>] [<sub>FamP</sub> [TP *t<sub>j</sub> rang ren qingchu le* [<sub>FamP</sub> <Zhangsan><sub>k</sub>] [TP *pro<sub>k</sub> shi wuzui de.*]]]]]

According to Frascarelli (2007), the G-Topic in Spec,FamP should be a low copy of the (matrix) A-Topic, when silent. The crucial point here is that, on the contrary, in this structural context the local silent embedded G-Topic is an entity that is different from the matrix A-Topic. Furthermore, it should be recalled that a G-Topic does not break (A-)Topic chains. Hence, informants are “forced” to make a Topic shift in a context in which it is structurally impossible. This situation causes an interpretive crash, affecting acceptability:

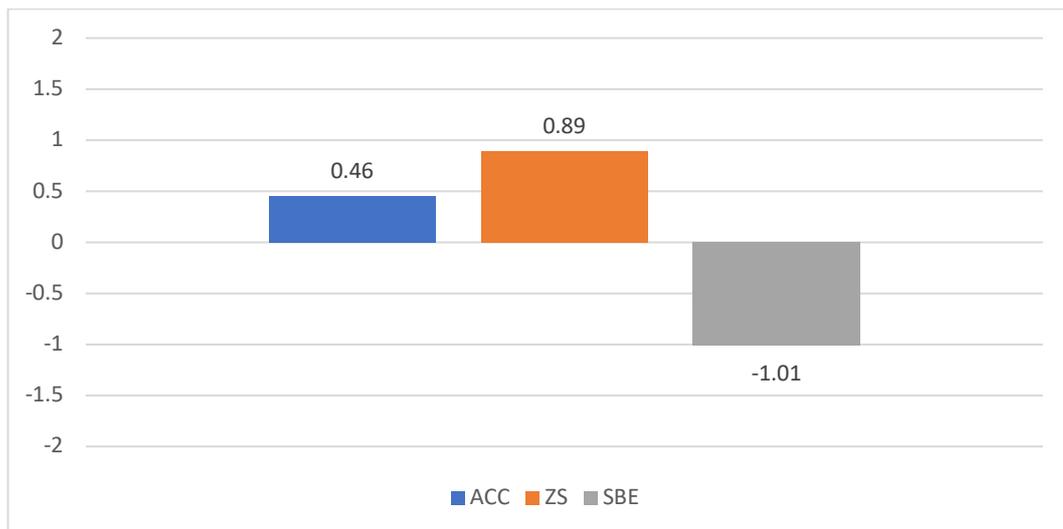
(47') ?? [ShiftP [*Zhangsan shuo de hua*]<sub>j</sub>] [<sub>FamP</sub> [<sub>TP</sub> *t<sub>j</sub> rang ren qingchu le* [<sub>FamP</sub> <*Zhangsan*><sub>k</sub>] [<sub>TP</sub> *pro<sub>k</sub> shi...*]

This proposal seems to be confirmed by cases like the one proposed in (48), in which the structural context in (46) is proposed again, but with an overt pronoun (他 *ta* ‘he’) as a subject, instead of an embedded NS:

(48) [Sunli is Zhangsan’s wife and she was killed one month ago. When the police contacted him, Zhangsan testified that he was working in the office when his wife was killed. Zhangsan also testified that he found out about his wife death when the police contacted him.]

*Zhangsan shuo de hua rang ren qingchu le ta shi wuzui de.*  
 Zhangsan say DE word let person understand PERF 3SG be innocent DE  
 ‘Zhangsan’s words let people understand (he) is innocent.’

By comparing the data in Graph 2.21 and Graph 2.22, it can be noticed that the presence of an overt pronoun increases acceptability. As a matter of fact, acceptability ratings expressed for (48) (M: 0.46, SD: 0.75) are significantly higher than those regarding (46) with an NS  $t(167) = -7.8, p < .001$ :



Graph 2.22: *embedded overt pronoun as co-referent of a non-local antecedent*

These data can be explained in the light of the fact that a 3<sup>rd</sup> person pronoun has an obviative function when, in a given discourse context, it distinguishes a non-salient third person referent from a more salient one (Kibort & Corbett 2010). Hence, the overt pronoun in the embedded T-domain triggers obviation effects, selecting as its antecedent a DP different from the matrix A-Topic.

In conclusion, the analysis carried out in the present section is in line with the proposal put forth in §2.2.1.2 for the peripheral adverbial clause (14) and in §2.2.5 for the NS embedded under a factive verb in (38), according to which the presence of an overt matrix A-Topic interfere with the interpretation proposed by the context.

### 3. Topic chains and Topic prosody

In this chapter it will be shown that different types of Topics present different (and specific) intonational contours also in a tone language like Chinese. Specifically, the data collected from an original oral production experimental test, carried out for this investigation will be illustrated, supported by statistical analyses.

Moreover, further evidence supporting the proposal put forth in Chapter 2 will be illustrated, showing (i) that an NS is always interpreted as co-referent of a DP realized as an A-Topic and (ii) that a G-Topic does not break a Topic chain started from an A-Topic, thus not affecting the interpretation of the following NSs.

Finally, a Topic hierarchy, similar to that in §1.2.2., will be also proposed for Chinese.

#### 3.1. Tone sandhi in Chinese: some background for the analysis

As it was already illustrated in §1.3.2., according to Chao (1968) the four Chinese tones can be illustrated as follows:

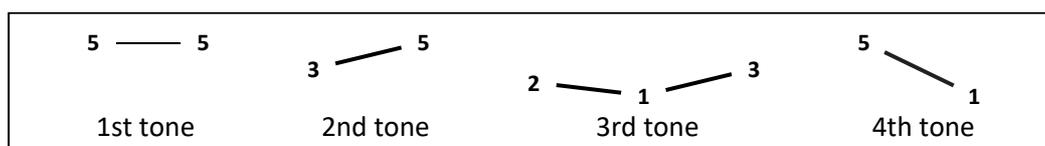


Figure 3.1: *Tones of Mandarin Chinese*

For the present analysis, let us now consider the way tones change when combined with other tones in multi-syllable words. According to Lee (2002), tone sandhi is described as right-headed in Mandarin Chinese. As a matter of fact, when two 3<sup>rd</sup> tone syllables follow each other, the tone of leftmost syllable change, being pronounced as a 2<sup>nd</sup> tone, whereas the tone of rightmost syllable does not change, as the following Figure shows:

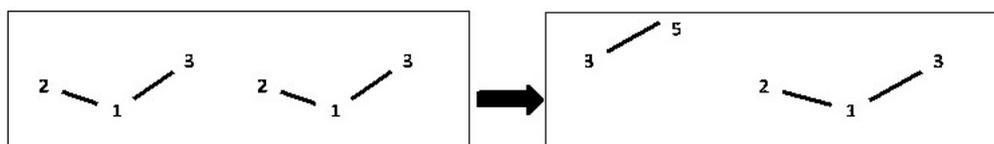


Figure 3.2: *3<sup>rd</sup> tone + 3<sup>rd</sup> tone*

Similarly, in a sequence of three 3<sup>rd</sup> tones syllables, the rightmost does not change, as it is shown below:

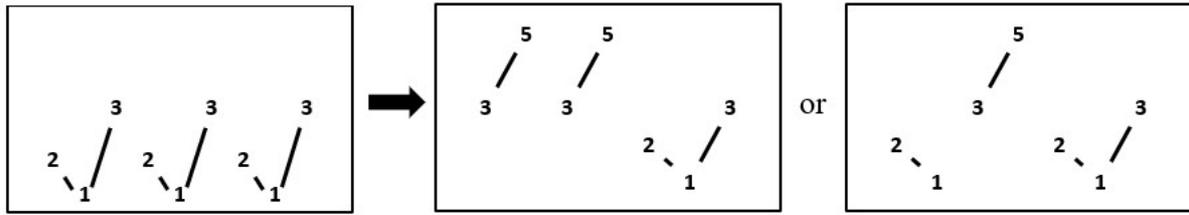


Figure 3.3: 3<sup>rd</sup> tone + 3<sup>rd</sup> tone + 3<sup>rd</sup> tone

Furthermore, in Lee (2002) it is shown that the same pattern also seems to occur in other combinations of tones. For instance, when a 3<sup>rd</sup> tone syllable is followed by a 1<sup>st</sup>, 2<sup>nd</sup> or 4<sup>th</sup> tone, it is always the leftmost syllable that changes, as it is shown below:

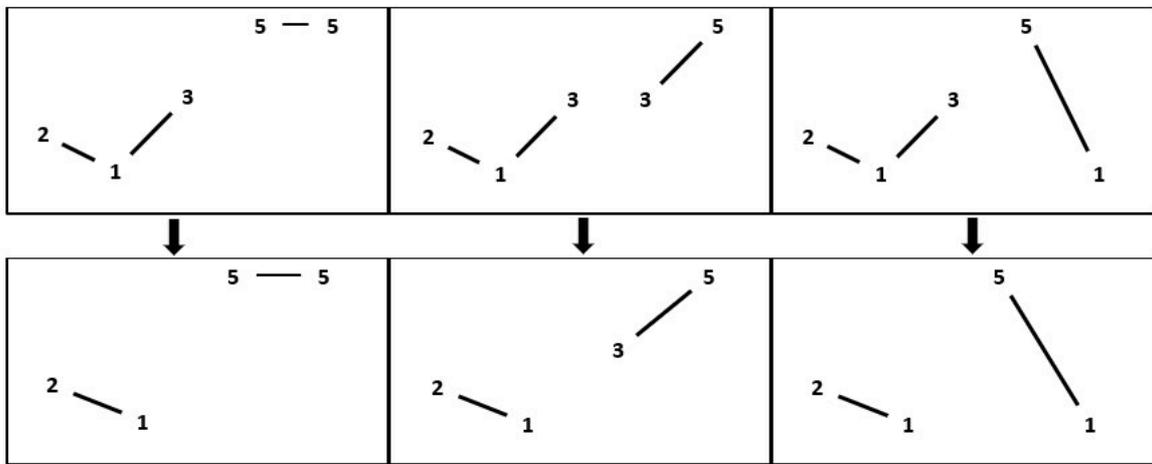


Figure 3.4: tone sandhi with 1<sup>st</sup>, 2<sup>nd</sup> and 4<sup>th</sup> tones as the rightmost tones

Further evidence is provided by the changes determined by the negative marker *bu* in Chinese, which is usually realized with a 4<sup>th</sup> tone (falling) contour. Nevertheless, when it is followed by another 4<sup>th</sup> tone syllable, *bu* changes its tone from falling to rising (cf. Ernst 1995, among others), as it is shown in the following Figure, in which the combination *bu shi* (‘not be(ing)’) is illustrated:

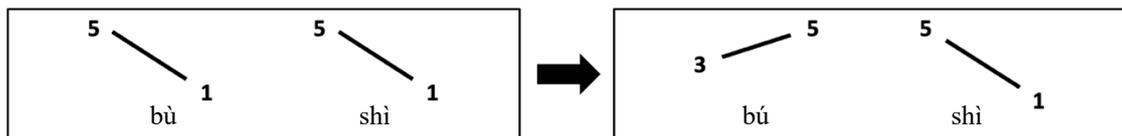


Figure 3.5: tone changing of the negative marker “*bu*”

According to Pierrehumbert (1980), pitch accents have a prominence-lending function on the stressed syllables with which they are associated. As a matter of fact, the data from F&H (2007)

illustrated in § 1.3.1. show that in Italian and German it is the stressed syllable that change, according to the type of Topic.

Considering that tone sandhi in Chinese is right-headed, we propose that pitch accents have a prominence-lending function on the rightmost syllable of the Topic constituent, being the most dominant syllable in multisyllabic words from a phonological point of view, since its tone remains unchanged. Therefore, we should expect to find alterations on the rightmost syllable of Topic constituents in Mandarin Chinese in the present analysis, when considering different types of Topics.

This proposal seems to be supported by the data that will be illustrated in the following sections.

### 3.2. The oral production experiment

In order to check whether the three types of Topics (A-Topic, G-Topic and C-Topic) illustrated in §1.1 show different contours in a tone language like Chinese, an oral production experiment has been conducted, in which 17 informants (whose socio-demographic data are illustrated in Table 3.1 below) were asked to describe a short story running on a PowerPoint presentation (converted into a video), featuring Goofy and Micky Mouse at the seaside. Informants' socio-demographic data are given in Table 3.1 below:

	Age	Gender	Have you ever studied linguistics?	Origin (province)
Speaker 1	27	F	Yes	Hebei
Speaker 2	28	F	Yes	Chongqing
Speaker 3	29	M	No	Hebei
Speaker 4	22	M	No	Chongqing
Speaker 5	22	M	Yes	Shaanxi
Speaker 6	22	F	Yes	Shaanxi
Speaker 7	30	F	Yes	Taiwan
Speaker 8	26	F	No	Hebei
Speaker 9	15	M	No	Hebei
Speaker 10	27	F	No	Shaanxi
Speaker 11	25	F	Yes	Beijing
Speaker 12	25	F	No	Shanxi
Speaker 13	25	F	No	Zhejiang
Speaker 14	24	F	No	Zhejiang
Speaker 15	22	M	No	Hebei
Speaker 16	22	F	No	Hebei
Speaker 17	22	M	No	Inner Mongolia

Table 3.1: *socio-demographic data*

In the 8 animated slides of the video the two characters perform different sequences of actions, which have been designed to trigger the production of either A-, G- or C-Topics. Specifically, the two characters:

- meet in front of a house (together) (Figure 3.6);
- take different objects to the shore (together) (Figure 3.7);
- build a castle on the sand (together) (Figure 3.8);
- swim underwater (one appears before the other) (Figure 3.9);
- eat an ice-cream (ice-creams have different colors) (Figure 3.10);
- go back home (together) (Figure 3.11);
- relax in the living room (in different ways) (Figure 3.12);
- go to sleep (carrying different objects) (Figure 3.13).

The relevant slides are illustrated in Figures 3.6-3.13 - below:



Figure 3.6: *Goofy and Micky meet in front of the house*



Figure 3.10: *Goofy and Micky eat an ice-cream*



Figure 3.7: *Goofy and Micky bring different items*



Figure 3.11: *Goofy and Micky go back home*



Figure 3.8: *Goofy and Micky build a castle in the sand*



Figure 3.12: *Goofy and Micky relax in the living room*



Figure 3.9: *Goofy and Micky swim underwater*



Figure 3.13: *Goofy and Micky go to sleep*

Through this experiment, a total of 324 sentences with overt Topics (A-, G- or C-Topics) have been collected. However, only sentences with a clean signal and no background noise have been taken into consideration for the present analysis, for a total of 281 tokens.

In order to support the results emerging from the test a second analysis was conducted on the data collected from two interviews found on the YouKu platform (one to Ma Yun, Video 1, and one to Yue Yunpeng, Video 2)<sup>53</sup>, for a total of 571 further sentences with overt Topics. Therefore, a total of 852 tokens have been collected for the present analyses, which have been analyzed through the PRAAT software.

### 3.3. The prosody of Topics in Mandarin Chinese

#### 3.3.1. The A-Topic in Mandarin Chinese

In line with the proposal put forth in §3.1, data show that when a new Topic is introduced by the Chinese informants, it is consistently signaled by a complex tone, with a final fall of the Fundamental Frequency (F0)<sup>54</sup> on the rightmost syllable of the Topic constituent, independently of its tone (1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> or neutral). This type of tonal event can thus be described as an H+L\* tone.

As it is illustrated in the examples given in (1), Speaker 3 starts the description of the video introducing *Gaofei he Milaoshu* ‘Goofy and Micky Mouse’ as an A-Topic (what the sentence is about), then commenting that they ‘meet on a little countryside road’. Accordingly, the last syllable (*shu*) of the Topicalized DP is realized with an H+L\* contour, as is shown in Figure 3.14:

(1) Speaker 3:

*Zhe yi tian, [Gaofei he Milaoshu]<sub>A-Topic</sub> zai yi tiao xiangjian xiao dao xiangyu.*  
this one day Goofy and Micky Mouse at one CL country little road meet  
‘This day, Goofy and Micky Mouse meet on a little countryside road.’

---

<sup>53</sup> Links of the videos in the references.

<sup>54</sup> The fundamental frequency is a measure in hertz and reflects the rate of vocal cord vibration during phonation (pitch) (cf. Yavaş 2011).

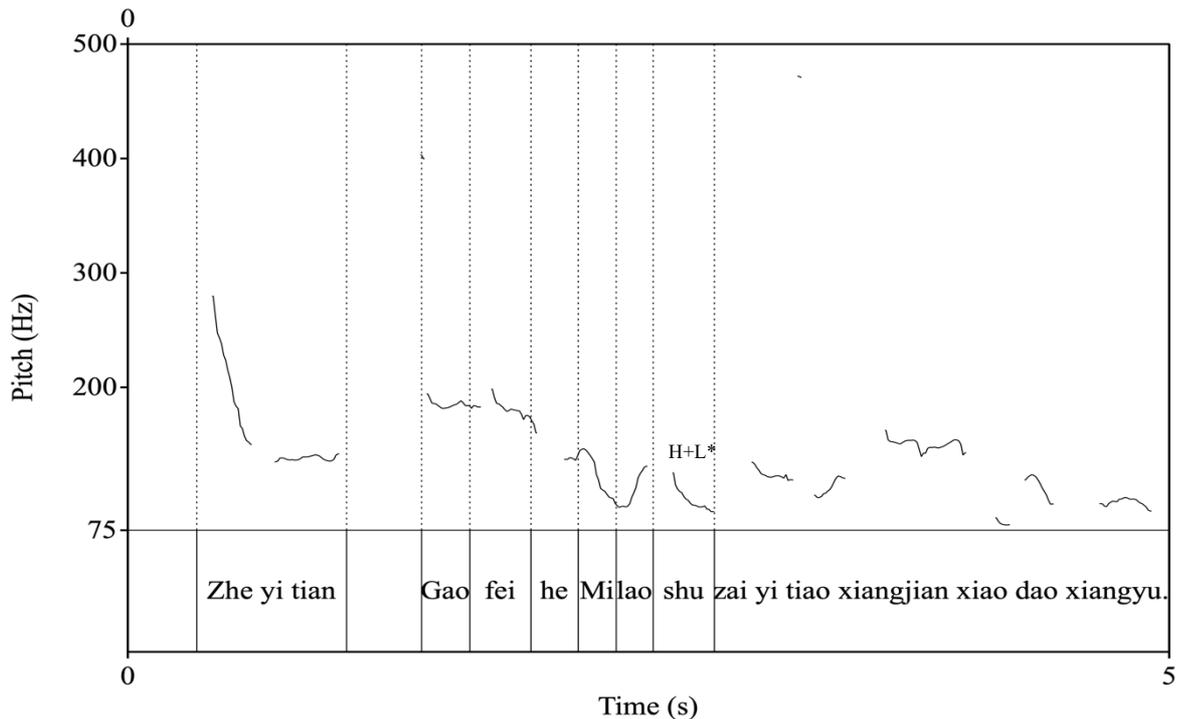


Figure 3.14: *Gaofei he Milaoshu* as an A-Topic – H+L\*

To show the consistency of the H+L\* contour for A-Topics, let us consider examples (2a-b) below, both produced by Speaker 2, in which a 1<sup>st</sup> tone ending A-Topic is realized:

(2) Speaker 2:

a. (*Tamen*) *yiqi da le yi ge baolei...*  
 3PL together build PERF one CL fortress

b. *ranhou [Gaofei]<sub>A-Topic</sub> xian dao hai-di qu qianshui.*  
 then Goofy first arrive sea-bottom go dive.

‘(They) build a fortress together... then, first Goofy go diving in the sea.’

In this example, *Gaofei* (‘Goofy’, ending in a 1<sup>st</sup> tone syllable) in (2.b) is introduced as a new A-Topic, since the (silent) A-Topic in (2.a) is *tamen* (‘they’) and, as expected, it shows an H+L\* contour, as Figure 3.15 shows:

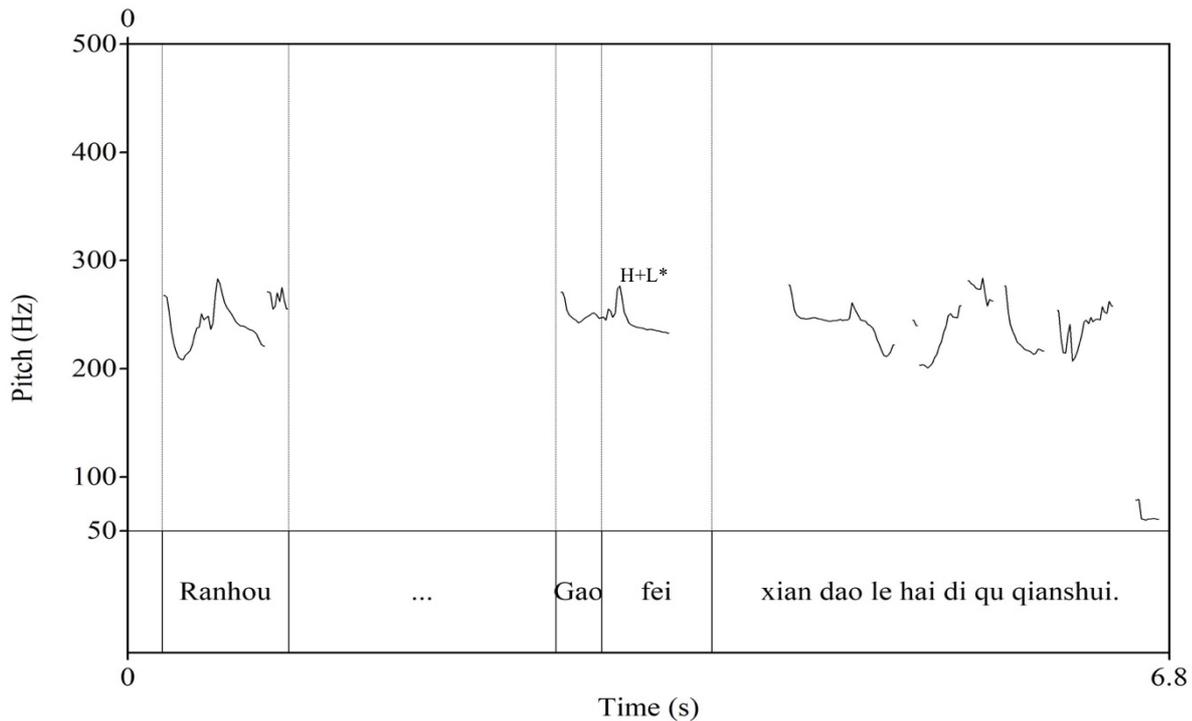


Figure 3.15: *Gaofei* as an *A-Topic* – *H+L\**

These data are also in line with the proposal put forth in the second chapter, according to which *A-Topics* start topic chains that allow for the interpretation of referential NSs also in a radical language like Chinese. As a matter of fact, the speaker who pronounced sentences (2a-b) above, kept on describing the relevant picture producing sentence (2c) (sentences (2a-b) are proposed again for convenience, without glosses):

(2) Speaker 2:

- a. *(Tamen) yiqi da le yi ge baolei...*
- b. *ranhou [Gaofei]<sub>A-Topic</sub> xian dao haidi qu qianshui.*
- c. *(Gaofei) xinshang le xuduo hai-di de meili de jingse*  
 Goofy enjoy PERF many sea-bottom DE beautiful DE scenery  
 ‘(They) build a fortress together... then, first Goofy go diving in the sea.  
 (Goofy) enjoys the many beautiful sceneries of the sea.’

In the next scene of the video, Micky Mouse appears on the screen and, consequently, Speaker 3 shifts from *Gaofei* to *Milaoshu*, as is shown in (3) below. Once again, the last syllable of *Milaoshu* is realized with an *H+L\** complex tone (Figure 3.16), as it is proposed for a Topic shift:

(3) Speaker 2:

*Mei guo yi-huir, Milaoshu ye genzhe dao le hai-di.*  
 NEG pass a little while Micky Mouse also follow RESULT PERF sea-bottom  
 ‘Not long after, Micky Mouse has reached (him) in the sea as well.’

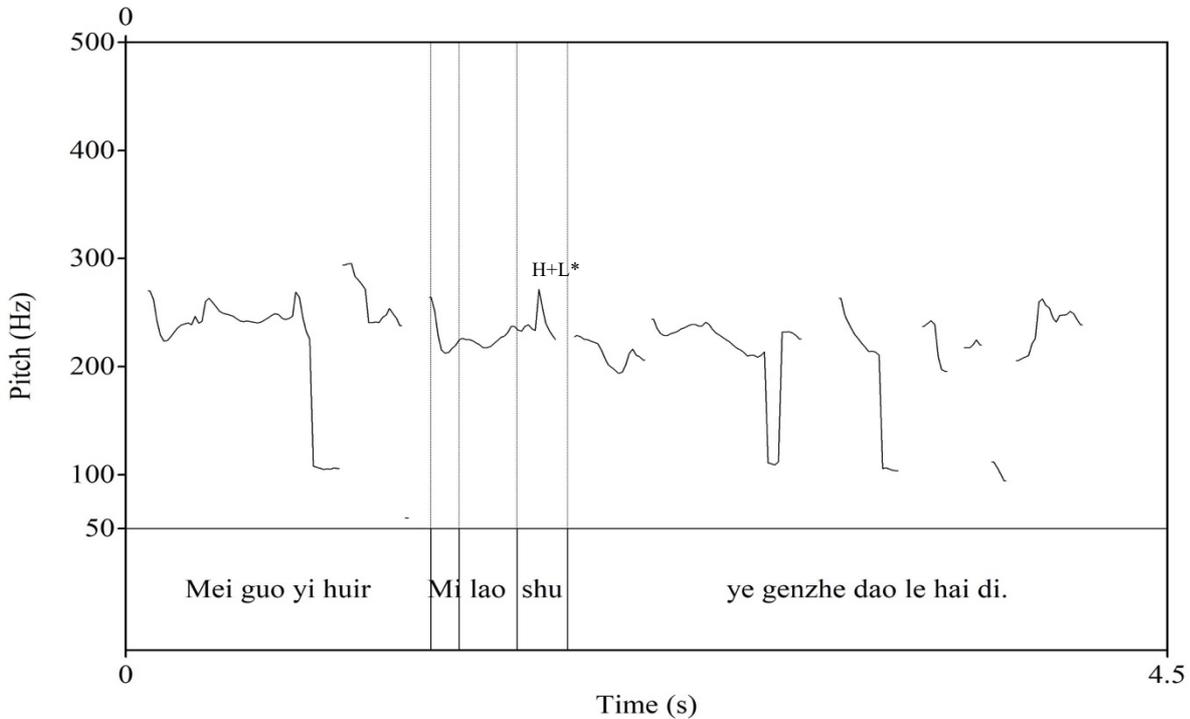


Figura 3.16: *Milaoshu as an A-Topic – H+L\**

Let us now consider two examples ((4) and (5)) in which two DPs with a 2<sup>nd</sup> tone (final) syllable (*yu* ‘fish’ and *diantai* ‘station’, respectively) are realized with an H+L\* contour, being A-Topics. Consider example (4) first:

(4) Speaker 16:

a. *Ta kan dao le yi tiao xiao yu.*  
 3SG see RESULT PERF one CL small fish

b. [*Xiao yu*]<sub>A-Topic</sub> *you zou le.*  
 small fish swim go away PERF

‘He saw a small fish. [**The small**]<sub>A-Topic</sub> fish has swum away.’

Even though Speaker 16 starts producing the DP *yu* (‘fish’) with a rising tone, however the last part is realized with a H+L\* contour (Figure 3.17):

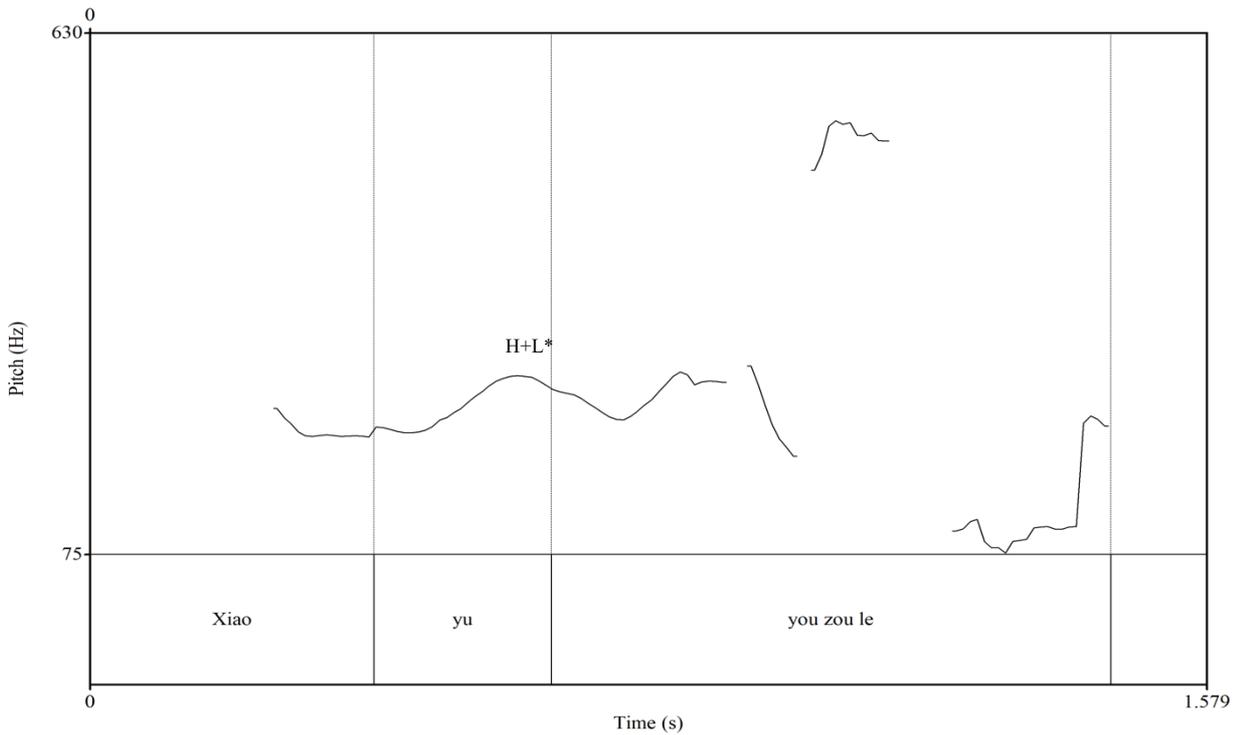


Figura 3.17: *Yu as an A-Topic – H+L\**

This particular ‘combination’ might be due to the fact the adjective *xiao* ‘small’, which precedes *yu*, is a 3<sup>rd</sup> tone syllable. Therefore, in order not to have a break between the two constituents (namely, *xiao* and *yu*), the speaker has initially followed the tone sandhi rule illustrated in Figure 3.4 (for a 3<sup>rd</sup> + 2<sup>nd</sup> tone combination) – thus beginning with a L+H\* contour – then switching to an H+L\* contour, so as to signal the presence of an A-Topic<sup>55</sup>.

For further evidence in this direction, let us consider the following example taken from Video 2, in which Interviewer 2 starts his narration with the sentence in (5), in which a 2<sup>nd</sup> tone-ending A-Topic is once again realized with an H+L\* contour:

(5) Interviewer 2:

[*Yue Yunpeng*]<sub>Vocative</sub>, [*guangbo diantai*]<sub>A-Topic</sub> *wei nin boyin...*  
 Yue Yunpeng broadcast station for 2SG.FORMAL broadcast  
 ‘[*Yue Yunpeng*]<sub>Vocative</sub>, [*the broadcast station*]<sub>A-Topic</sub> broadcasted for you...’

<sup>55</sup> For further evidence supporting this proposal, consider example (14) in section §3.3.3. below, in which a 2<sup>nd</sup> tone C-Topic (which is realized as a ‘proper’ 2<sup>nd</sup> tone) do not present the falling contour showed in Figure 3.17 for the DP *yu* ‘fish’.

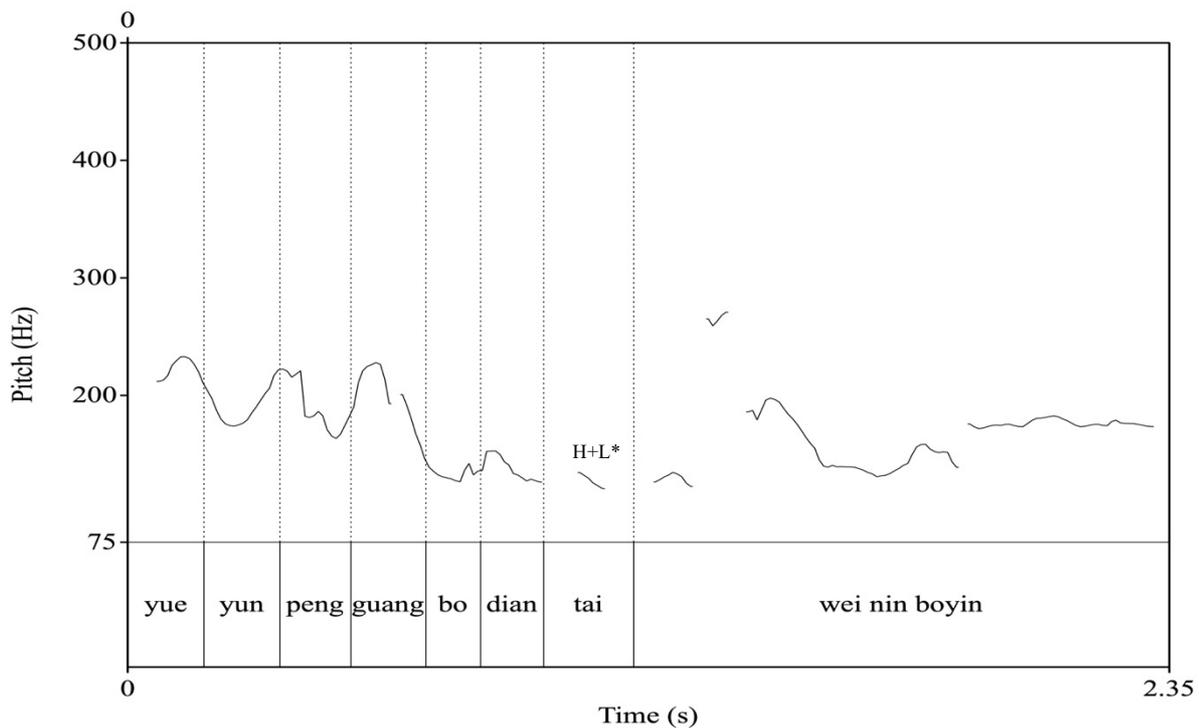


Figura 3.18: *Diantai as an A-Topic – H+L\**

To conclude the present analysis on the prosody of A-Topics, let us finally consider the examples given in (6b) and (7c), in which two A-Topics, the former ending in a 4<sup>th</sup> tone syllable (*lù* ‘road’) and the latter ending in a neutral tone syllable (*tā-men* ‘they’), show the expected H+L\* contour<sup>56</sup>:

(6) Speaker 8:

- a. *Houlai*, [*Milaoshu he Gaofei*]<sub>A-Topic1</sub> *yiqi jieban dao xiancun wanr*  
 later Micky Mouse and Goofy together travel together RESULT village play
- b. [*Tianjian de xiao lu*]<sub>A-Topic2</sub> *feichang piaoliang.*  
 farm DE small road very beautiful  
 ‘Later, [**Micky Mouse and Goofy**]<sub>A-Topic1</sub> have gone together to play in the village.  
 [**The small road of the farm**]<sub>A-Topic2</sub> is very beautiful.’

<sup>56</sup> In examples (6) and (7), the PRAAT images only illustrate the topics that are relevant for the present analysis, to focus attention on substantial data.

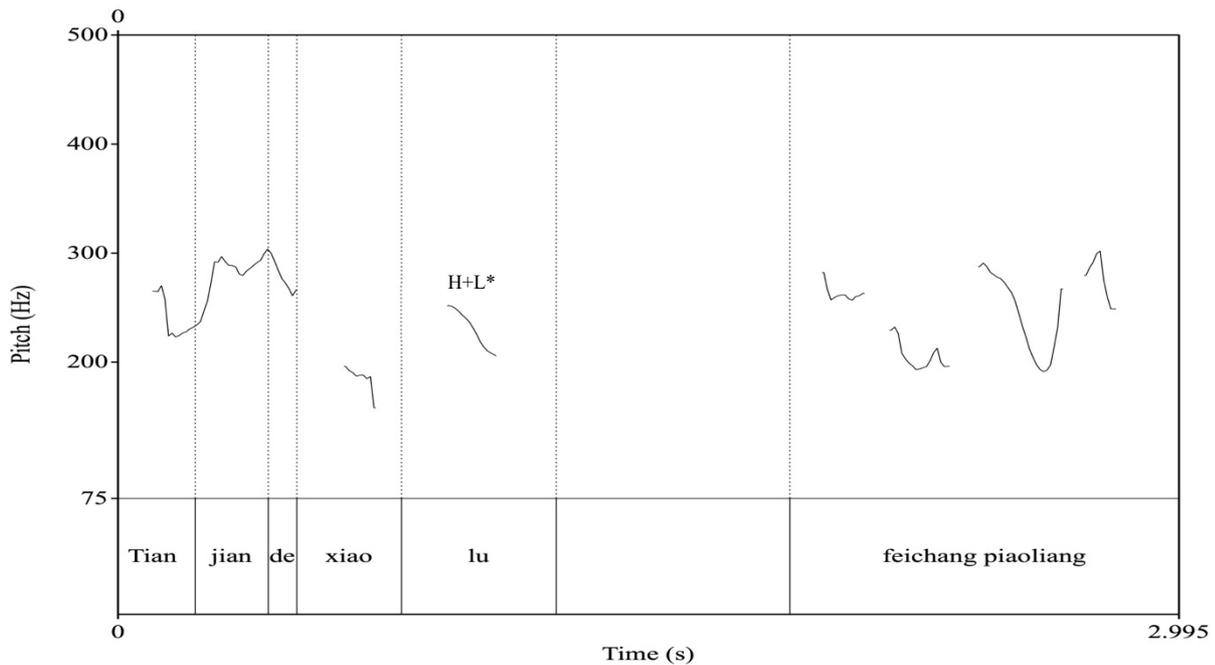


Figura 3.19: *Lu as an A-Topic – H+L\**

(7) Speaker 1:

a. *Xianzai [Gaofei]<sub>C-Topic1</sub> dao hai-di qianshui*  
 now Goofy arrive sea-botto dive

b. *En zhe ge shihou [Milaoshu]<sub>C-Topic2</sub> ye jie ... xia dao hai-di.*  
 ehm this CL time Micky Mouse also jie descend RESULT sea-bottom

c. *Xianzai [tamem]<sub>A-Topic2</sub> lai dao hai-bian chi bingjiling.*  
 now 3PL come RESULT sea-side eat ice cream.

‘Now [Goofy]<sub>C-Topic1</sub> goes diving under the sea.

Ehm, this time [Micky Mouse]<sub>C-Topic2</sub> goes under the see as well.

Now [they]<sub>A-Topic</sub> have arrived on the beach and (are) eating ice cream.’

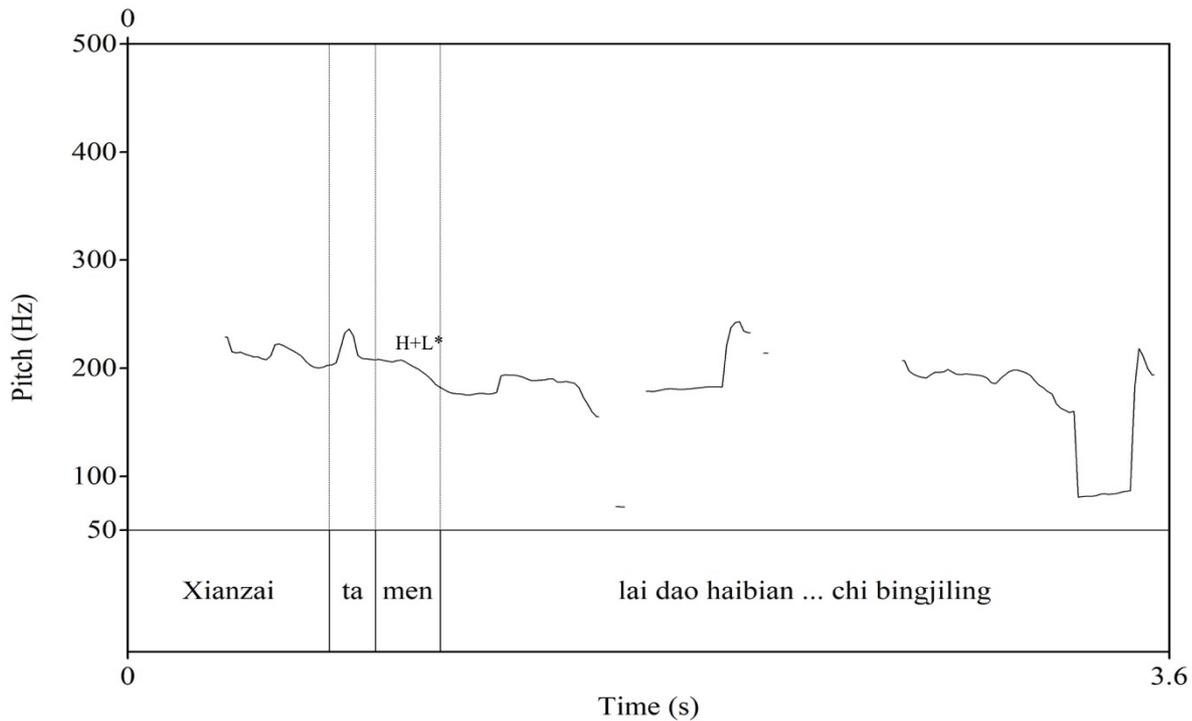


Figura 3.20: *Tamen as an A-Topic – H+L\**

To conclude, according to the data illustrated so far, it can be argued that A-Topics in Mandarin Chinese are realized through an H+L\* contour, independently of the tonal features of the rightmost syllable of the constituent.

### 3.3.2. The G-Topic in Mandarin Chinese

Similar to Italian and German (cf. F&H 2007), G-Topics in Chinese present a simple L\* contour on their rightmost syllable.

Let us consider the following example, in which Speaker 1 introduces the A-Topic *Gaofei he Milaoshu* ('Goofy and Micky Mouse') in (8a) and keeps talking about them using the neutral tone ending pronoun *tamen* ('they') as G-Topic in (8b) and (8c):

(8) Speaker 1

a. *Di-er tian, [Gaofei he Milaoshu]<sub>A-Topic</sub> xiangyu zai mmm mu wu qian*  
 second day Goofy and Micky Mouse meet at mmm wood house front

b. *[Tamen]<sub>G-Topic1</sub> yiqi yao chu qu wanr.*  
 3PL together want go out go play

c. *[Tamen]<sub>G-Topic2</sub> dai zhe mojing.*  
 3PL bring ZHE sunglasses.

‘The following day, Goofy and Micky Mouse meet (with each other), mmmh, in front of the wooden house. They want to go out and play. They are wearing sunglasses.’

The relevant prosodic contour for the Topics in (8a) (8b) and (8c) are illustrated in Figure 3.21, 3.22 and 3.23 respectively:

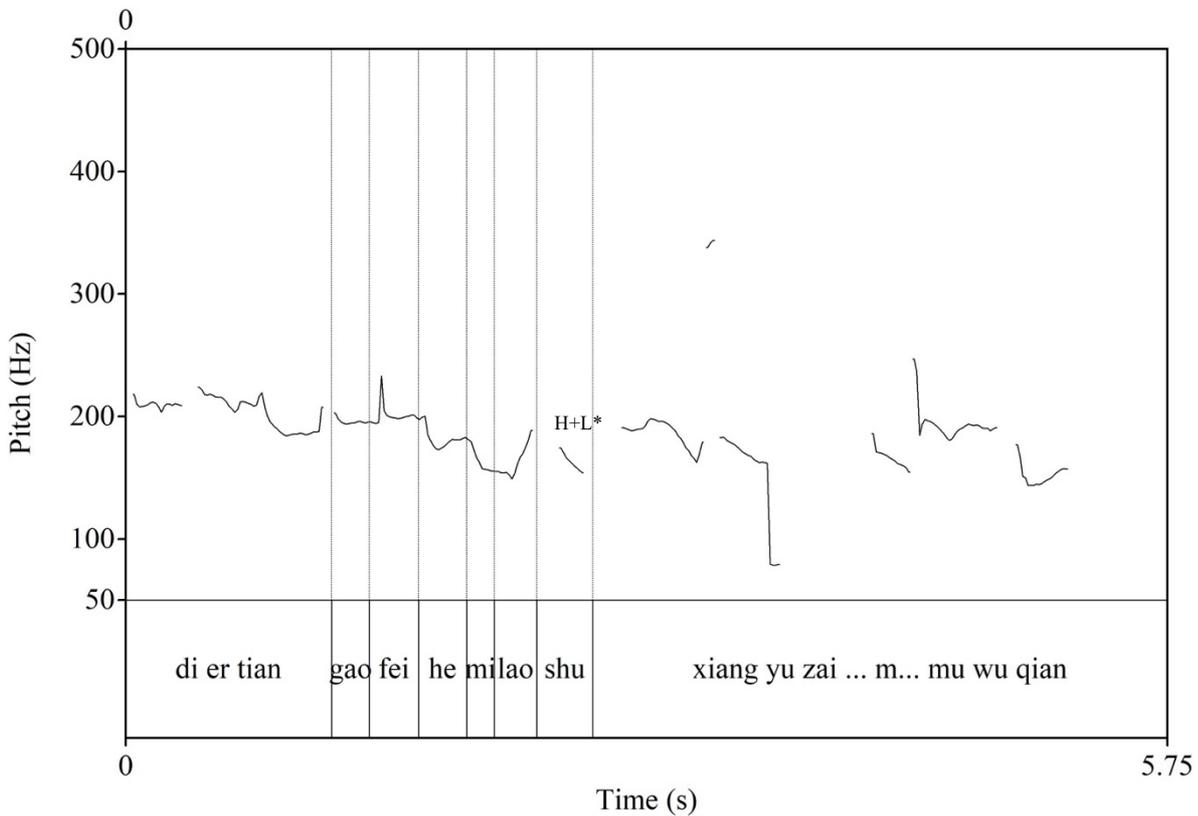


Figure 3.21: A-Topic (8a)

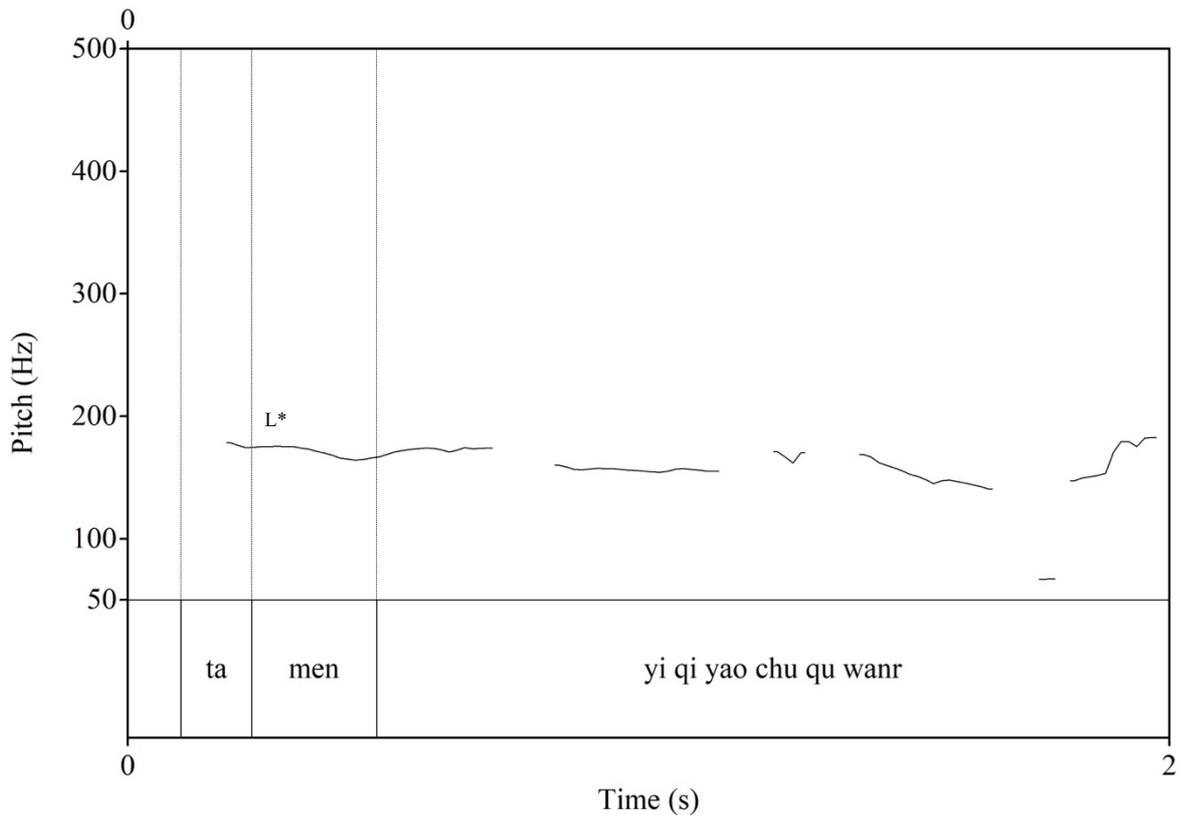


Figure 3.22: *G-Topic1 – (8b)*

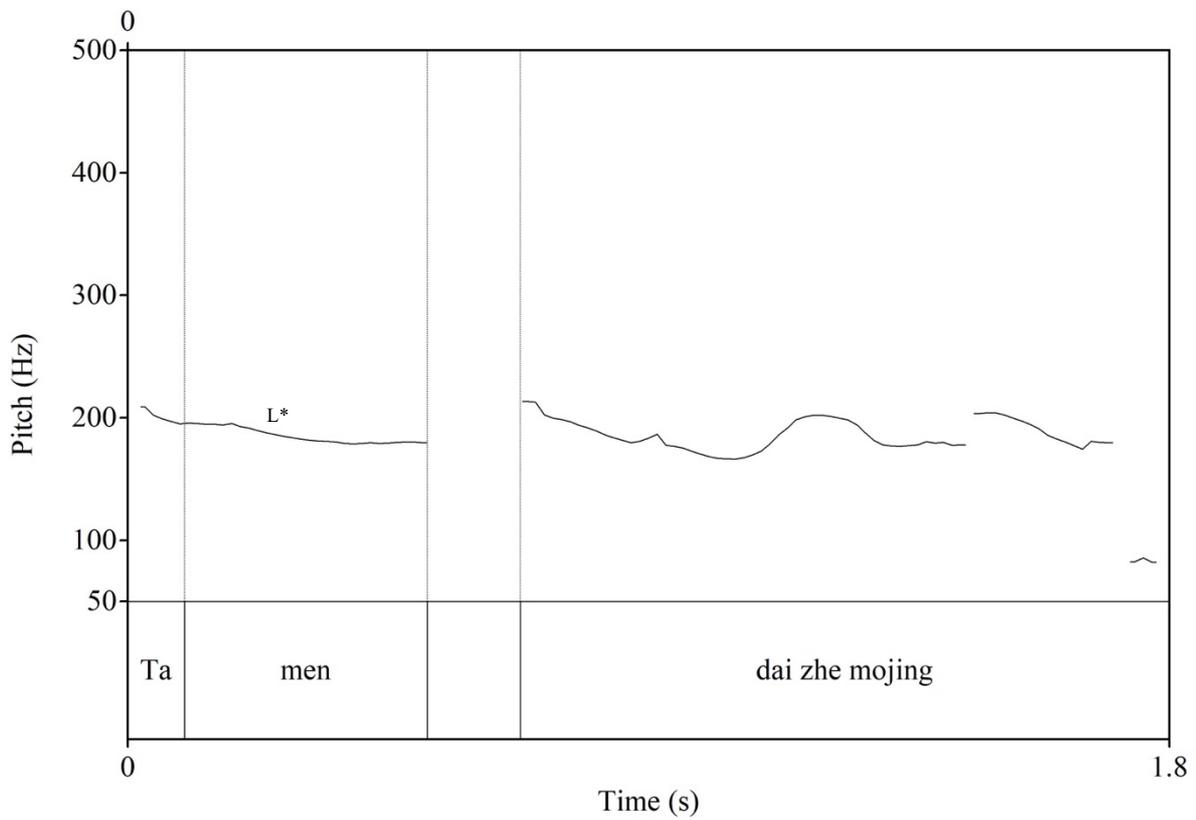


Figure 3.23: *G-Topic2 – (8c)*

To verify that the L\* contour is not only specific to neutral tone syllables, consider the following example in (9b), in which the pronoun *wo* ('I'), a 3<sup>rd</sup> tone syllable, serve as a background G-Topic. As a matter of fact, the A-Topic of the sentence (9b) is *Zhege* 'this (thing)', allowing for the interpretation of the embedded NS (in angle brackets in the example). Therefore, the full pronoun 'I' can only be interpreted as a G-Topic<sup>57</sup>:

(9) Ma Yun:

- a. *Danshi* [*xiaofeizhe*]<sub>A-Topic1</sub> *dui* *women* *bing-bu shi* *hen* *liaojie*.  
 but consumer regarding 3PL not be very understand
- b. [*Zhe ge*]<sub>A-Topic2</sub> [*wo*]<sub>G-Topic</sub> *juede* <*zhe ge*> *ye shi yi ge jihui*  
 this CL 1SG think this CL also be one CL opportunity  
 'But [**the consumers**]<sub>A-Topic1</sub> do not understand us at all.  
 [**This (thing)**]<sub>A-Topic2</sub>, [**I**]<sub>G-Topic</sub> think <**this thing**> is also an opportunity.'

As expected, the A-Topic2 shows the typical H+L\* contour for A-Topics (Figure 3.25), similarly to A-Topic1 (Figure 3.24). On the other hand, the pronoun *wo* (which, we recall, is a 3<sup>rd</sup> tone syllable) is realized with an L\* contour, as it can be seen in Figure 3.25 below:

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<sup>57</sup> It should be recalled that according to Frascarelli (2018), 1<sup>st</sup>/2<sup>nd</sup> person pronouns instantiate different AGREE ("logophoric") relations, not affecting a Topic chain started by a 3<sup>rd</sup> person (referential) A-Topic (in line with Sigurdsson 2011). However, in the previous chapter (section §2.2.4.), it has been shown that, in the presence of a context, a 1<sup>st</sup> person pronoun (interpreted as an A-Topic) can break a previous referential Topic chain in Chinese, thus serving as an antecedent for the following NSs (cf. in particular example (33a) in section §2.2.4.).

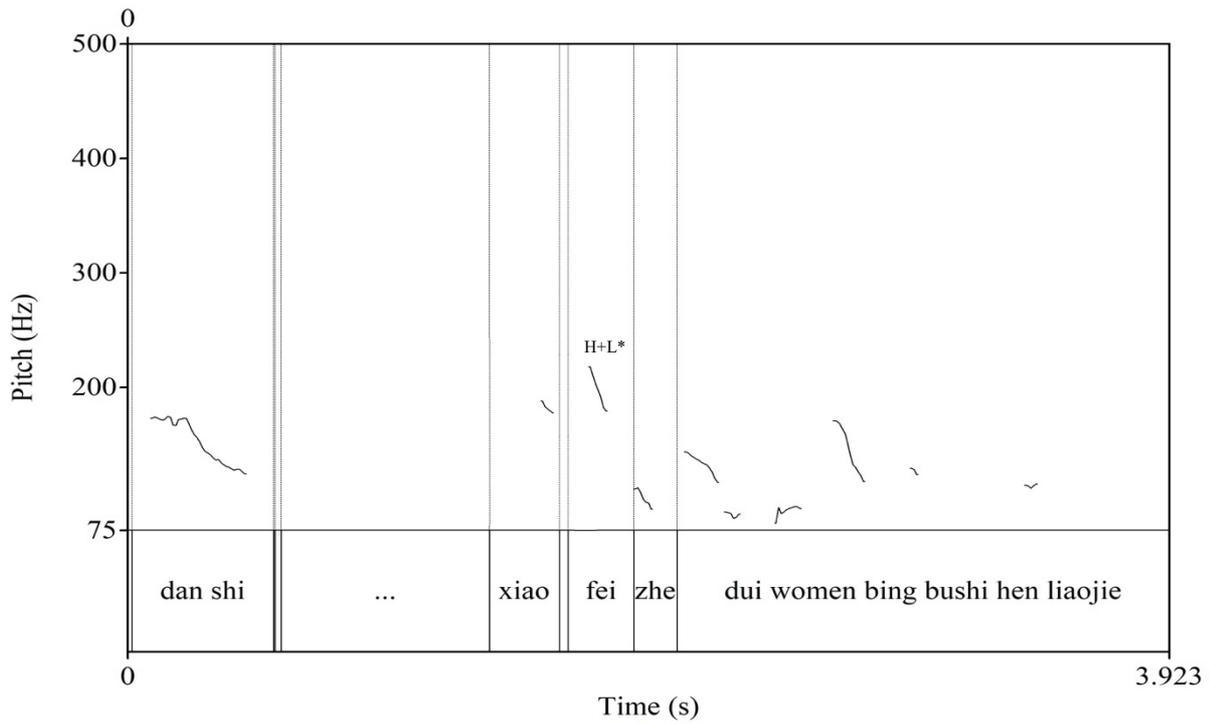


Figure 3.24: A-Topic1 – (9a)

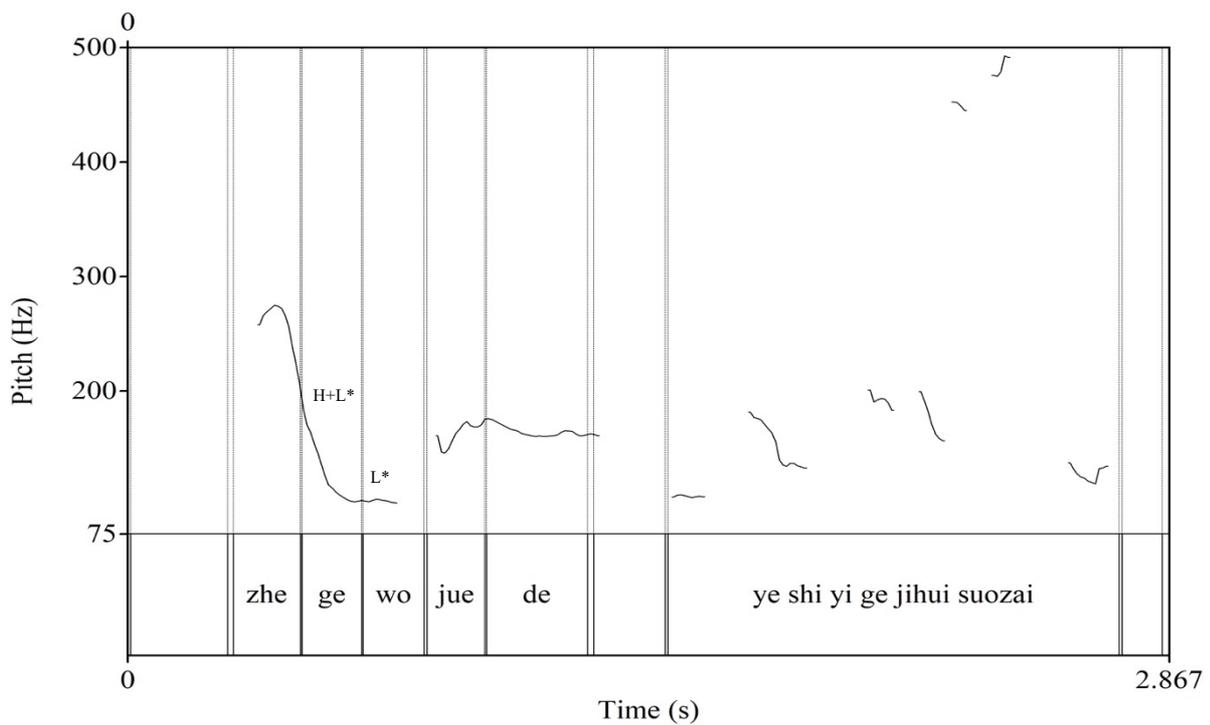


Figure 3.25: A-Topic2 + G-Topic – (9b)

Further evidence for this proposal is also provided by the following example, in which not only is the 3<sup>rd</sup> tone pronoun *wo* ('I') in (10b) realized as a G-Topic, the pronoun *ta* ('he') in (10b), which is

a 1<sup>st</sup> tone syllable, is also low-toned as a G-Topic. Hence it also serves a continuity function for the A-Topic established in (10a)<sup>58</sup>:

(10) Ma Yun:

a. [**Ta**]<sub>A-Topic</sub>    *jiexia le zhe ge danzi,*  
 3SG take PERF this CL responsibility

b. [**wo**]<sub>G-Topic1</sub>    *juede [ta]<sub>G-Topic2 = A-Topic</sub>    tebie liaobuqi*  
 1SG think 3SG particularly terrific

‘[**He**]<sub>A-Topic</sub> took this responsibility, [**I**]<sub>G-Topic1</sub> think [**he**]<sub>G-Topic2 = A-Topic</sub> is particularly terrific.’

The following figures show, once again, the A-Topic in (10a) shows an H+L\* contour (Figure 3.26), while the two G-Topics in (10b) have been realized with an L\* contour (Figure 3.27 and Figure 3.28 respectively):

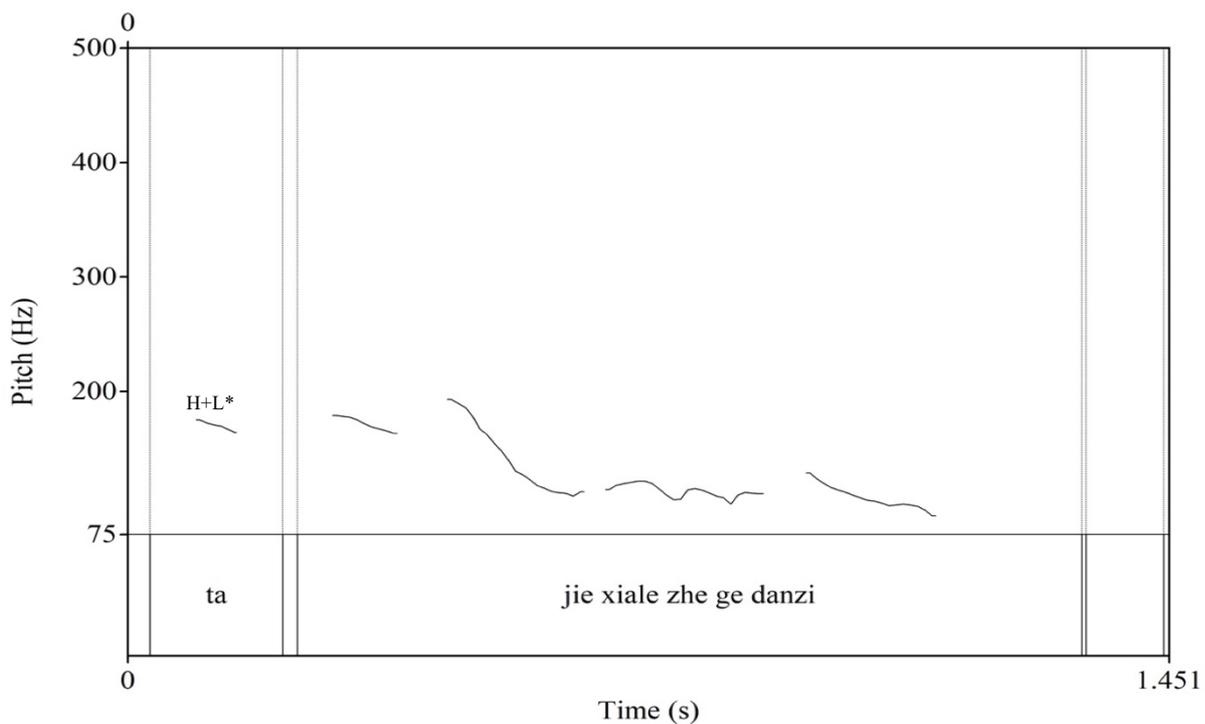


Figure 3.26: A-Topic – (10a)

<sup>58</sup> According to the (contextual) analysis conducted, *ta* in (10a) can only be interpreted as an A-Topic, since it is newly introduced by the speaker (Ma Yun), who starts its turn after the interviewer’s comment.

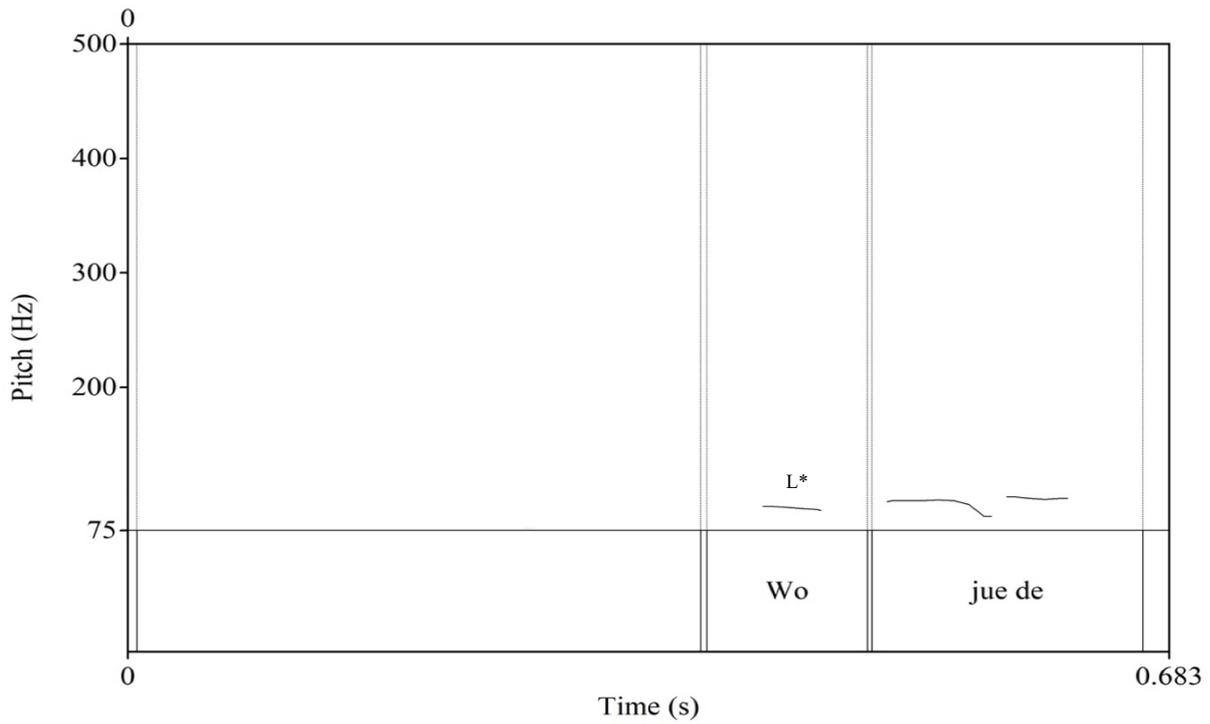


Figure 3.27: *G-Topic1 – (10b)*

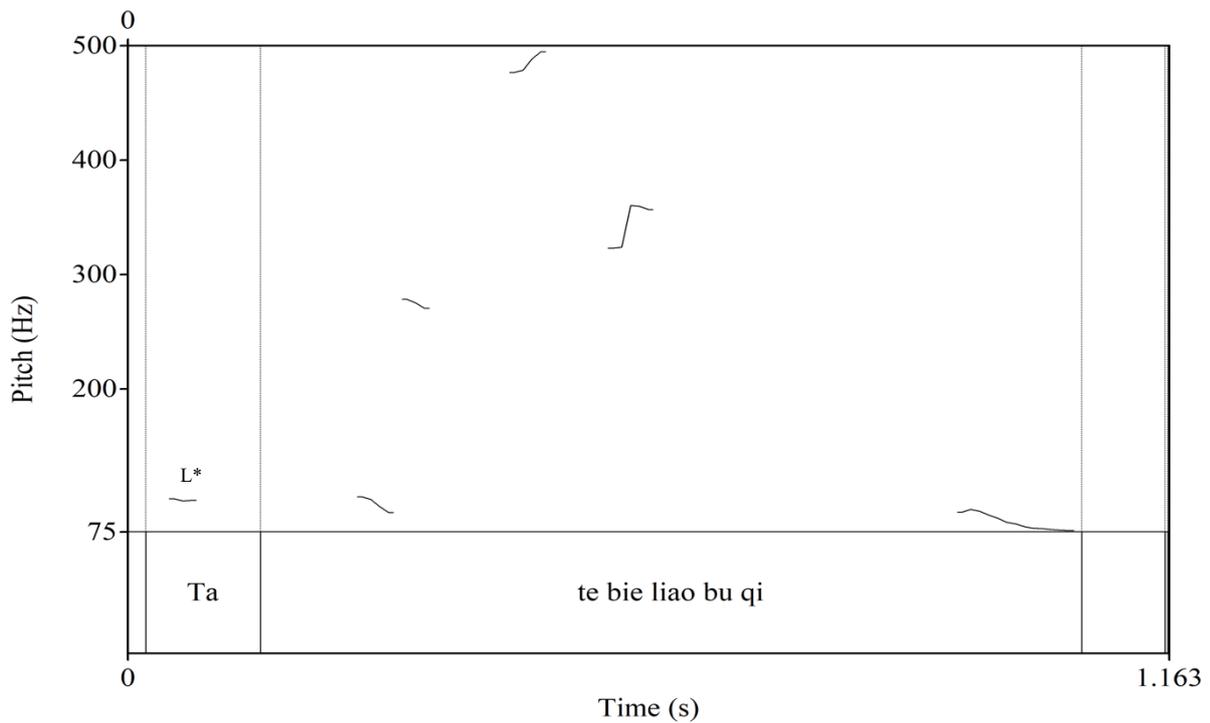


Figure 3.28: *G-Topic2 – (10b)*

Final evidence supporting the proposal that a G-Topic is realized consistently with an L\* contour in Chinese, despite the tone of the relevant syllable, is provided in the two following examples.

In (11b) the DP *mei ge ren* ('everyone'), ends in 2<sup>nd</sup> tone syllable (*ren* 'person'), can only be analyzed as a G-Topic, as it is located in an adverbial clause which cannot host A-Topics (since adverbial clauses are not endowed with illocutionary force). As a matter of fact, it is realized with an L\* contour, as it is shown in Figure 3.29 below:

(11) Ma Yun:

a. Dan [**wo**]<sub>A-Topic</sub> xianzai jing hen pingjing le,  
 but 1SG now experience very calm LE

b. *yingwei bu yiding* [**mei ge ren**]<sub>G-Topic</sub> *dou zhidao*...  
 because NEG certainly every CL person all know

'But now [**I**]<sub>A-Topic</sub> am living it very calmly, since not necessarily [**everybody**]<sub>G-Topic</sub> knows...'

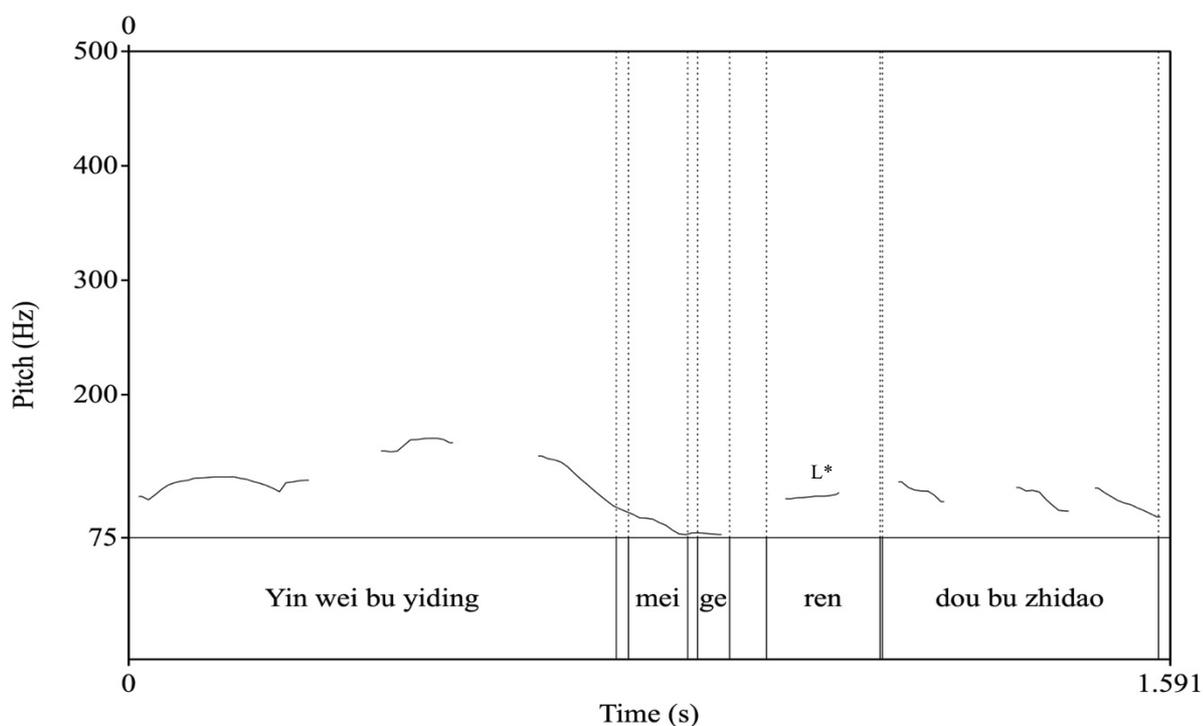


Figure 3.29: *ren* as a G-Topic

Similarly, the 4<sup>th</sup> tone word *zhe* ('this') in (12d) also presents an L\* contour when realized as a G-Topic (for Topic continuity), as is shown in Figure 3.30:

(12) Ma Yun:

- a. *Yi ge shi wupin de liudong,*  
one CL be goods DE flow
- b. *women jiao wuliu.*  
1PL call logistic
- c. *Yi ge shi zijin de wuliu,*  
one CL be fund DE logistic
- d. [**zhe**]<sub>G-Topic</sub> *jiao zuo zhifu.*  
this call do pay

‘One is the flow of goods, and we call (it) logistic. One is the distribution of funds, and [**this**]<sub>G-Topic</sub> is called to pay.’

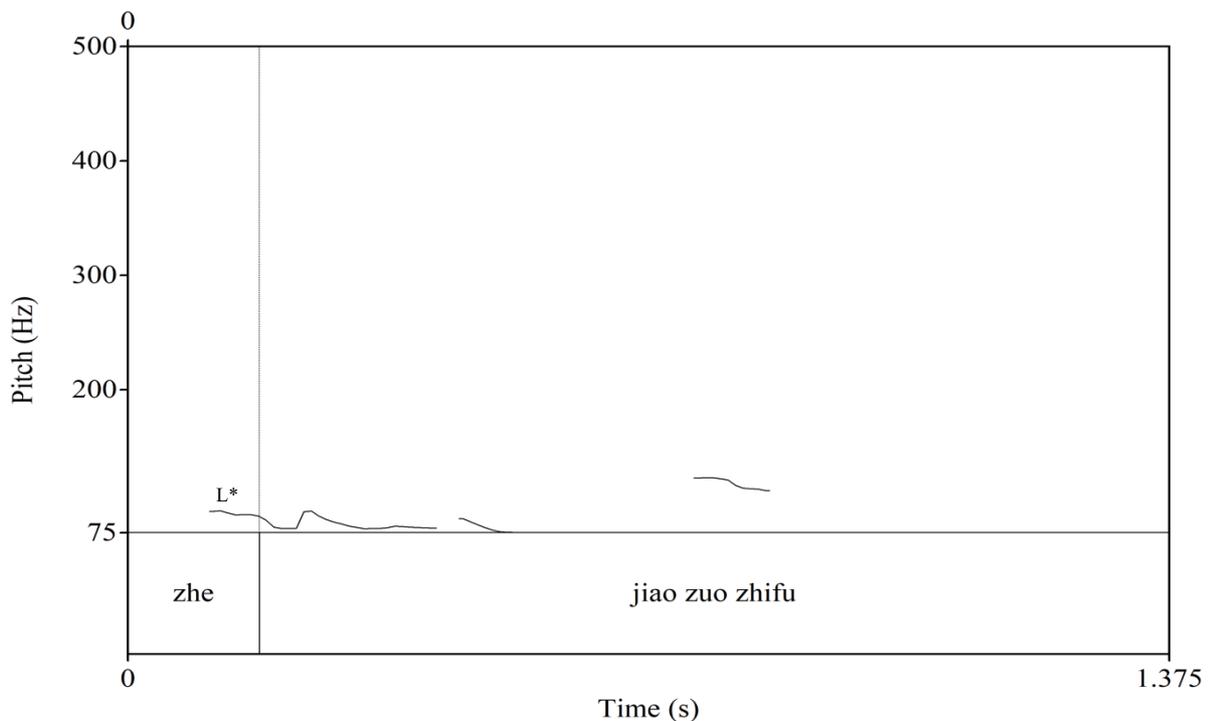


Figure 3.30: *zhe* as a G-Topic

In conclusion, the examples illustrated so far provide substantial support to the proposal that G-Topics are realized with an L\* contour also in a tone language like Chinese.

### 3.3.3. The C-Topic in Mandarin Chinese

The analysis conducted shows that C-Topics in Chinese do not have a specific intonational contour. Indeed, the shape of the F0 contour of the rightmost syllable of the C-Topic constituent seems to be

determined by its the lexical tone. In other words, when a tone is aligned on a contrastively topicalized constituent, it shows one of the following contours:

1<sup>st</sup> tone syllable → H\*

2<sup>nd</sup> tone syllable → L+H\*

3<sup>rd</sup> tone syllable → H+L\*+H

4<sup>th</sup> tone syllable → H+L\*

Let us first consider the following examples, in which two C-Topics are realized, the former with the rightmost syllable being a 1<sup>st</sup> tone syllable (*fei*) in (13a), and the latter ending in a 3<sup>rd</sup> tone syllable (*shu*) in (13b):

(13) a. [**Gaofei**]<sub>C-Topic1</sub> *mai le yi ge qiaokeli weir de bingqiling*,  
 Goofy buy PERF one CL chocolate flavour DE ice cream

b. [**Milaoshu**]<sub>C-Topic2</sub> *mai le yi ge xiangcao weir de bingqiling*.  
 Micky Mouse buy LE one CL vanilla flavour DE ice cream

‘[**Goofy**]<sub>C-Topic1</sub> bought a chocolate ice cream, (while) [**Micky Mouse**]<sub>C-Topic2</sub> bought a vanilla ice cream.’

Relevant intonational contours are shown in the following figures. Specifically, C-Topic1 (*Gaofei*) is realized with an H\* contour (Figure 3.31), while C-Topic2 (*Milaoshu*) is realized with an H+L\*+H contour (Figure 3.32):

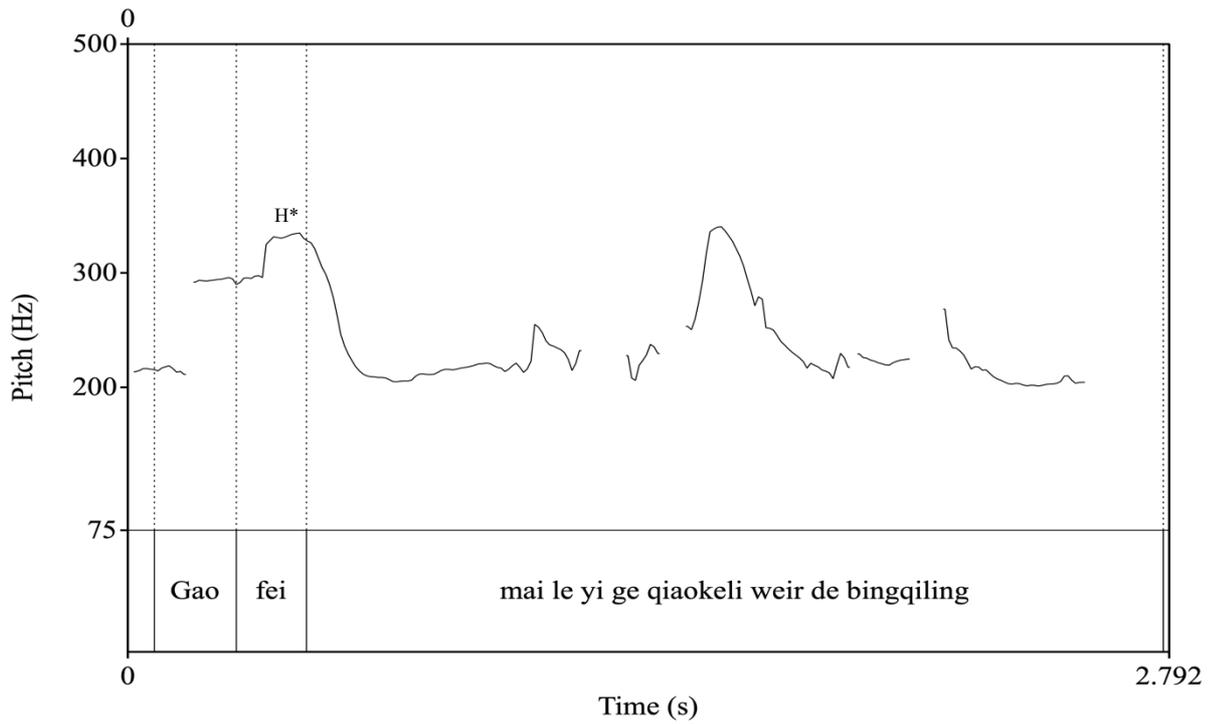


Figure 3.31: *Gaofei as a C-Topic – H\**

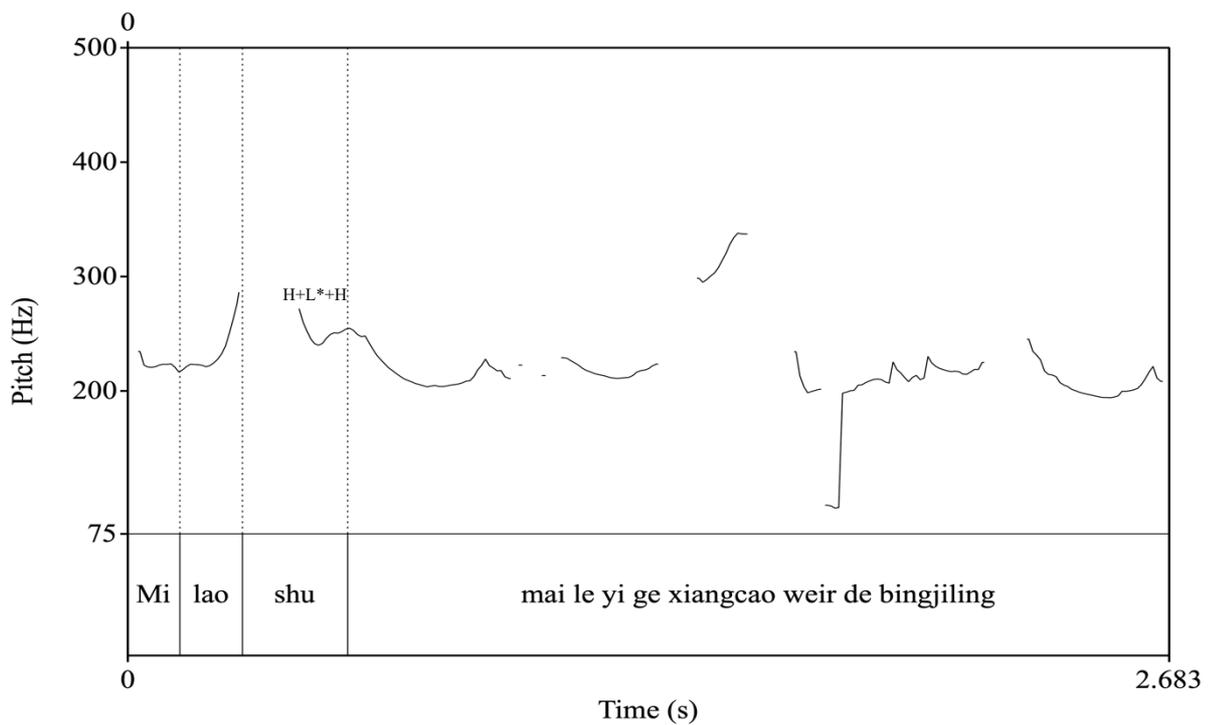


Figure 3.32: *Milaoshu as a C-Topic – H+L\*+H*

Let us now consider example (14b), in which the C-Topic *Miqi* (an alternative way to call ‘Micky Mouse’) ends in a 2<sup>nd</sup> tone syllable:

(14) Speaker 13:

a. [**Gaofei**]<sub>C-Topic1</sub> *xuan le ge qiaokeli wei de*,  
 Goofy choose PERF CL chocolate flavour DE

b. *er* [**Miqi**]<sub>C-Topic2</sub> *xuan le ge xiangcao wei de bingqilin*.  
 and Micky Mouse choose PERF CL vanilla flavour DE ice cream

‘[**Goofy**]<sub>C-Topic1</sub> chose a chocolate (ice cream), while [**Micky Mouse**]<sub>C-Topic2</sub> chose a vanilla ice cream.’

Similar to example (13a), *Gaofei* in (14a) also shows a H\* intonational contour, ending in a 1<sup>st</sup> tone syllable. On the other hand, C-Topic2 shows an L+H\* contour, in line with its tonal feature (2<sup>nd</sup> rising tone):

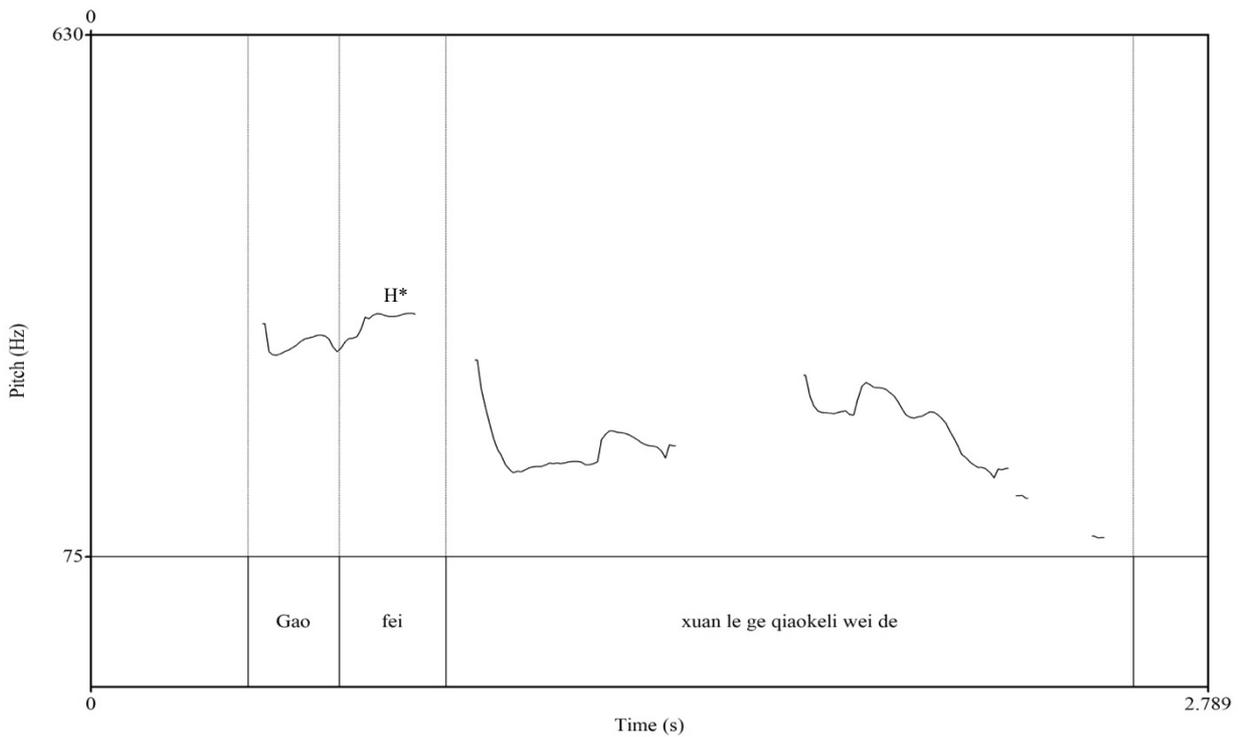


Figure 3.33: *Gaofei* as a C-Topic – H\*

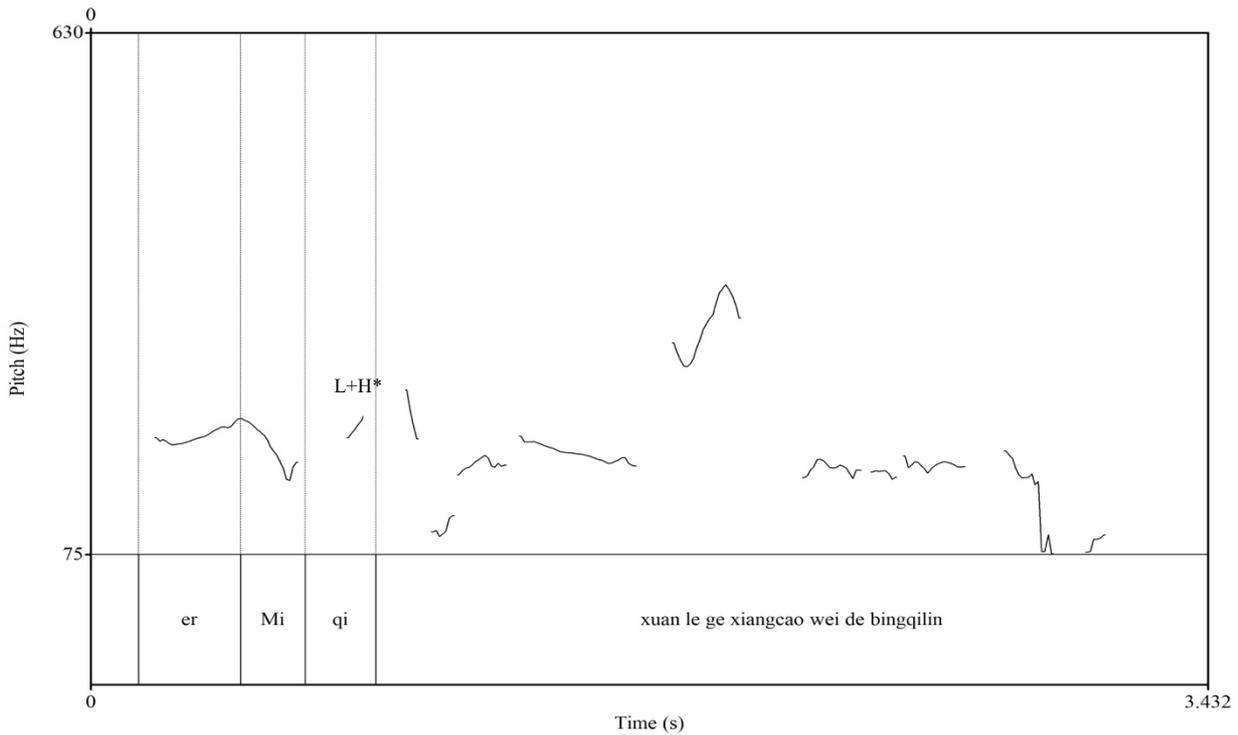


Figure 3.34: *Miqi as a C-Topic – L+H\**

So far, we have seen the prosodic contours of C-Topics ending in 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> tone syllables. Let us now consider the following example, in which the C-Topic in (15a) ends in a 4<sup>th</sup> tone syllable, while the second C-Topic in (15b) ends in a neutral tone<sup>59</sup>:

(15) Yue Yunpeng:

a. [*Wo de jiezou*]<sub>C-Topic1</sub> *yao kuai.*

1SG DE rhythm have to fast

b. [*Wo deq baofu*]<sub>C-Topic2</sub> *yao duo.*

1SG DE baofu have to many

‘[My rhythm]<sub>C-Topic1</sub> has to be fast, while [my jocks]<sub>C-Topic2</sub> have to be many.’

As is shown in the following Figures, C-Topic1, which ends with a 4<sup>th</sup> tone syllable, is realized with an H+L\* contour (Figure 3.35):

<sup>59</sup> In the present analysis, the number of C-Topics ending in a neutral tone syllable are too few to make any substantial generalization. However, based on a first preliminary analysis, it seems that the contour or the relevant neutral tone depends on the tone of its left-side syllable. However, we leave this issue open for future research and provide the PRAAT image in (15b) as representative for this case.

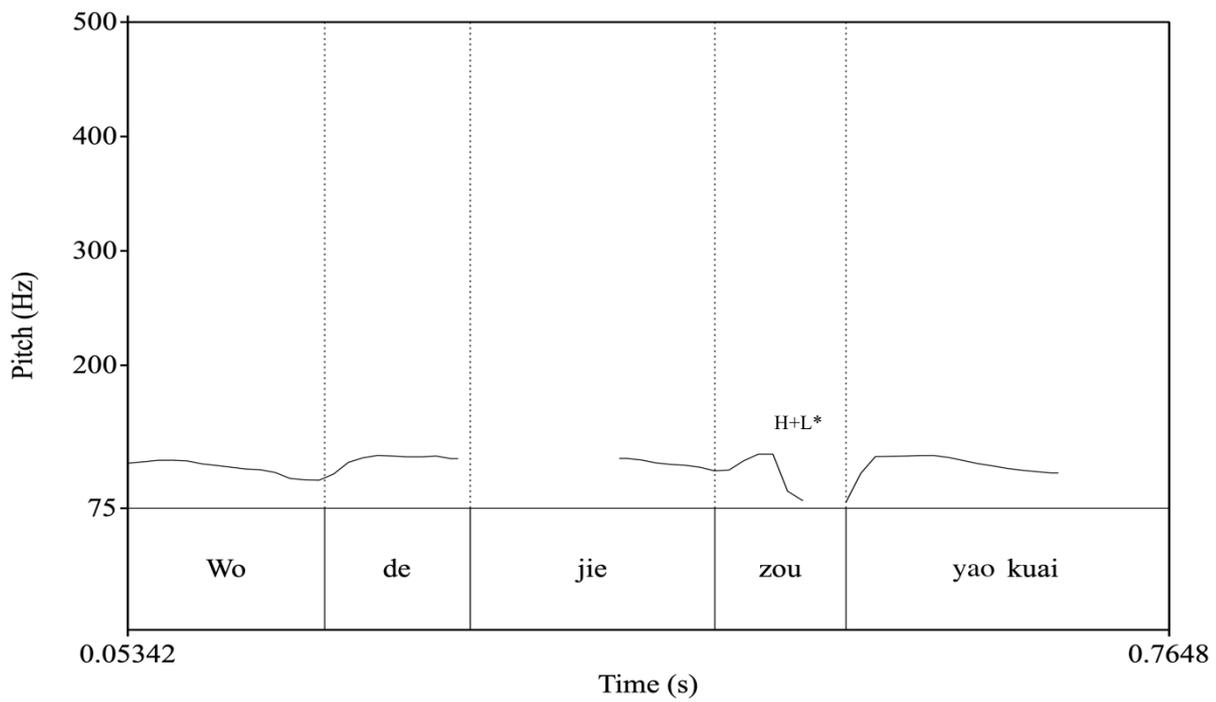


Figure 3.35: *Jiezou as a C-Topic – H+L\**

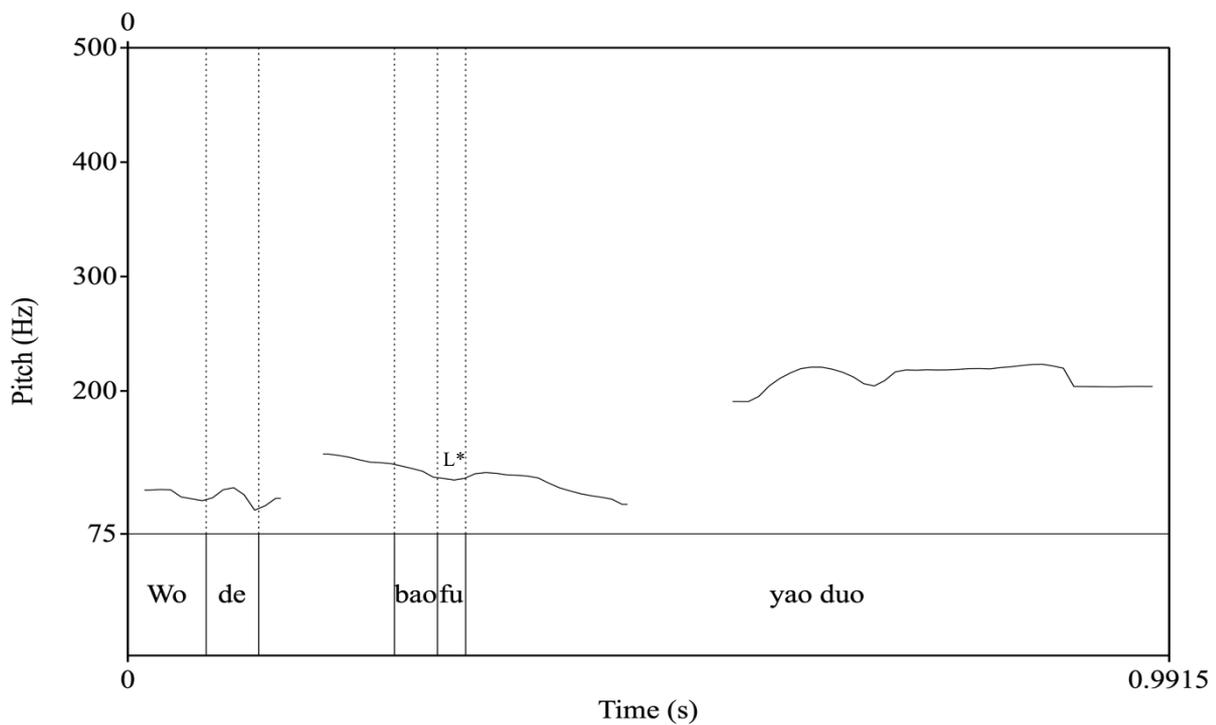


Figure 3.36: *Baofu as a C-Topic – L\**

In conclusion, it can be argued that intonational contours of C-Topics change according to the tone of the rightmost syllable of the Topic constituent.

Importantly, these data also show the existence of a similarity between C-Topics and Focus in Mandarin Chinese. As a matter of fact, when a constituent is realized as a Focus in Chinese, it seems to “respect” its tonal features (cf. Xu 1999), similarly to what has been shown above for C-Topics. Hence, this similarity is finely predicted in the present account; indeed, it also occurs in languages like European Portuguese (Frota 2000) and Italian (cf. D’Imperio 2002, Frascarelli 2004). As a matter of fact, according to different scholars (among them Molnar 2002, Valduvi & Vilkuna 1998), contrast is not an inherent property of either Focus or Topic. Nevertheless, since the present analysis is not focused on Focus, this specific question is left open for further research.

Furthermore, it has been shown that a C-Topic ending in a 4<sup>th</sup> tone syllable shows an H+L\* contours, similarly to A-Topics. The data collected, however, do not show any difference between these two types of Topics (namely a 4<sup>th</sup> tone ending C-Topic and a 4<sup>th</sup> tone ending A-Topic). Also in this case, further research is needed to investigate whether and, in case, how Chinese native speakers disambiguate these two types of topical constituents.

### 3.3.4. Topics prosody: statistical analysis

To provide further evidence for the analysis proposed above, the data regarding the prosody of A-, G- and C-Topics have been also examined under the lens of statistical analysis (Pearson Correlation Coefficient).

Despite few exceptions (probably due to language external factors, as hesitations, puzzling, interruptions, etc.) showed in the Figures below, we can definitely argue for the existence of a strong positive correlation between type of Topic and F0 contour,  $r(850) = .75, p = < .01$ :

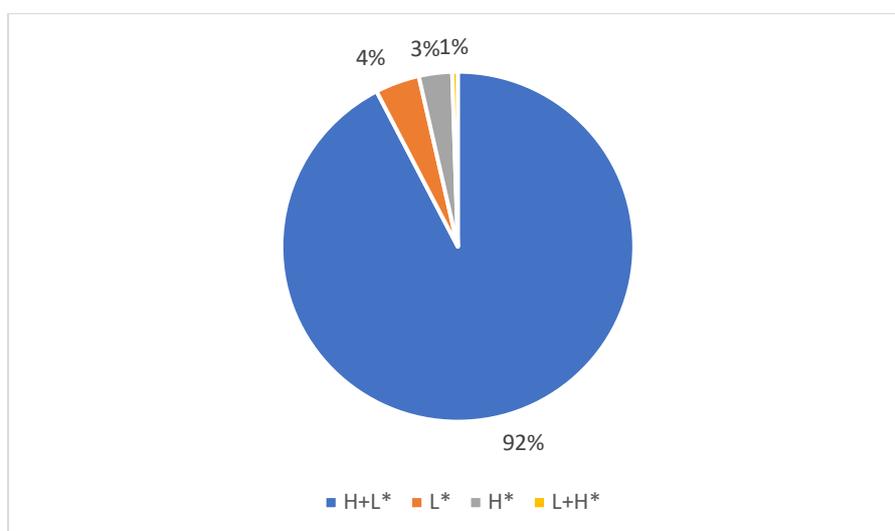


Figure 3.37: *The prosody of A-Topics*

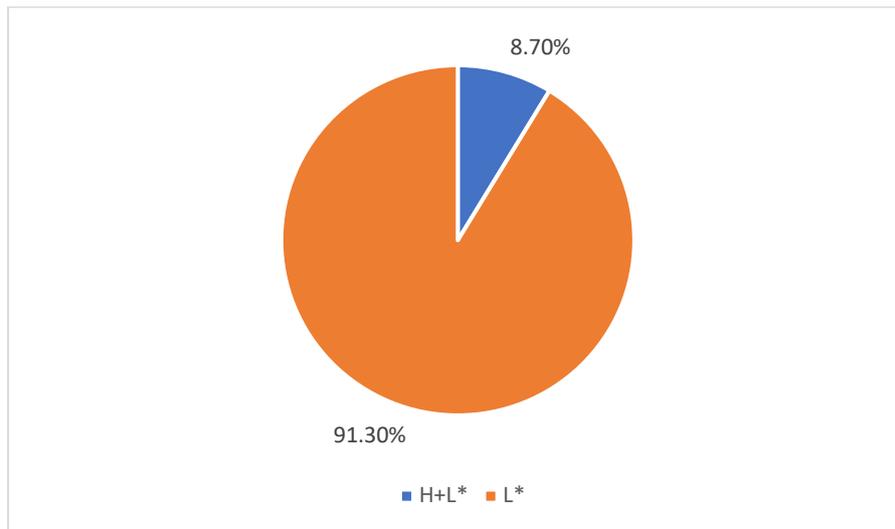


Figure 3.38: *The prosody of G-Topics*

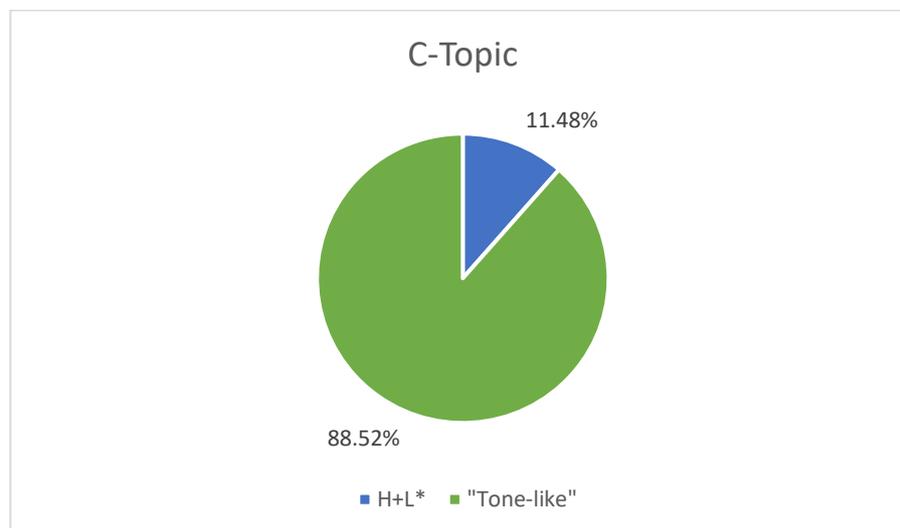


Figure 3.39: *The prosody of C-Topics*

In conclusion, statistics bears out and provides substantial support to the analysis proposed above on the prosody of Topics.

### 3.4. A-Topic chains and NSs

In Chapter 2 it has been argued that NSs are interpreted as co-referent to A-Topics. In this respect, let us now consider a few examples extracted from the oral corpus collected through the production experiment conducted for the prosodic analysis and the two interviews above mentioned.

In example (16) below (already partially examined in (6) above), Speaker 8 starts describing the scenes on the screen by introducing *Gaofei he Milaoshu* ('Goofy and Micky Mouse) and commenting that they meet in the countryside to play together (16a). Then, Speaker 8 shifts the Topic from the two characters to the countryside road (16b). Once the scene on the screen changes, Speaker 8

introduces the two characters again, this time using a pronoun (*tamen* ‘they’) as an A-Topic in example (16c), then keeping talking about them realizing an NS (16d):

(16) Speaker 8:

a. *Houlai, [Milaoshu he Gaofei]<sub>A-Topic1</sub> yiqi jieban dao xiancun wanr.*

b. *[Tianjian de xiao lu]<sub>A-Topic2</sub> feichang piaoliang.*

c. *[Tamen]<sub>A-Topic3</sub> you qu le haibian,*

d. *<tamen> = <sub>A-Topic3</sub> dai zhe zhangpeng he hua ... huaban.*

‘a. Later, **[Micky Mouse and Goofy]<sub>A-Topic1</sub>** have gone together to play in the village.

b. **[The small road of the farm]<sub>A-Topic2</sub>** is very beautiful.

c. **[They]<sub>A-Topic2</sub>** go to the beach,

d. **<they> = <sub>A-Topic3</sub>** bring a tent and a skate ... skateboard.’

In line with the present analysis, Figure 3.40 below shows that the full pronoun *tamen* in (16c) is realized with the typical H+L\* contour of A-Topics:

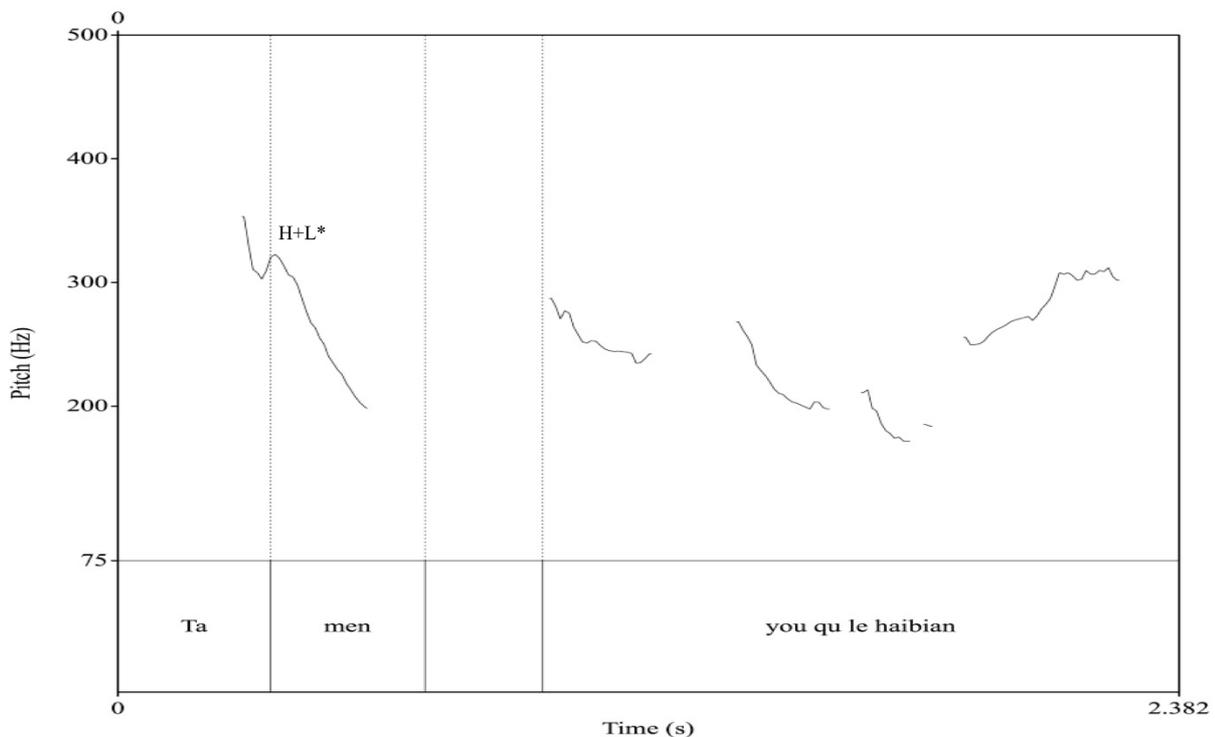


Figure 3.40: *Tamen as an A-Topic – H+L\* – (16c)*

Further evidence can be also provided by examples like (17), in which Speaker 3 is describing the second scene of the short video (Figure 3.7 above) and introduces the A-Topic with a pronoun (*tamen*) in the first sentence, while the following clauses all have NSs:

(17) Speaker 3:

- a. *yushi* [**tamen**]<sub>A-Topic</sub> *na zhe san*,
  - b. <**tamen**> *nazhe shouyinji*,
  - c. <**tamen**> *nazhe chonglang banr*.
  - d. <**Tamen**> *jiu xiang haibian ben qu*.
- ‘a. So [**they**]<sub>A-Topic</sub> take the umbrella,  
 b. <**they**> take the radio,  
 c. <**they**> take the surf board.  
 d. <**They**> are running through the sea.’

The discourse role of *tamen* in (17) is clearly supported by its H+L\* contour, illustrated in Figure 3.37:

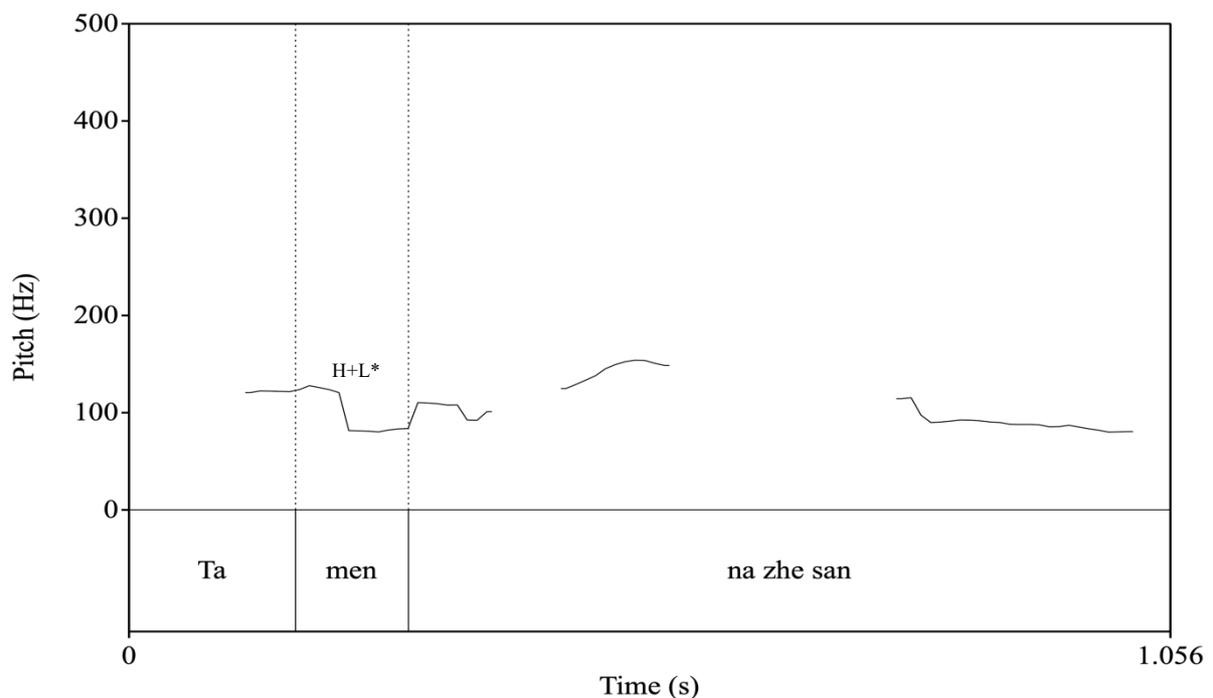


Figure 3.41: *Tamen* as an A-Topic – H+L\* – (17a)

Finally, let us consider example (9b) again, re-proposed below for convenience:

(18) [*Zhe ge*]<sub>A-Topic</sub> [*wo*]<sub>G-Topic</sub> *juede* <*zhe ge*> =<sub>A-Topic</sub> *ye shi yi ge jihui*

‘[This (thing)]<sub>A-Topic</sub>, [I]<sub>G-Topic</sub> think <this thing> =<sub>A-Topic</sub> is also an opportunity.’

As already said above, on the one hand, the A-Topic *zhege* is realized with an H+L\* contour and, as such, interpreted as an A-Topic, serving as an antecedent for the NS in the embedded clause under the bridge verb *juede* (‘think’). On the other hand, the DP *wo* (‘I’) in the matrix clause is realized with typical L\* contour of G-Topics and, as such, it does not interfere in the A-Topic chain instantiated by the A-Topic *zhege*. Consider Figure 3.42 below (= Figure 3.25 above):

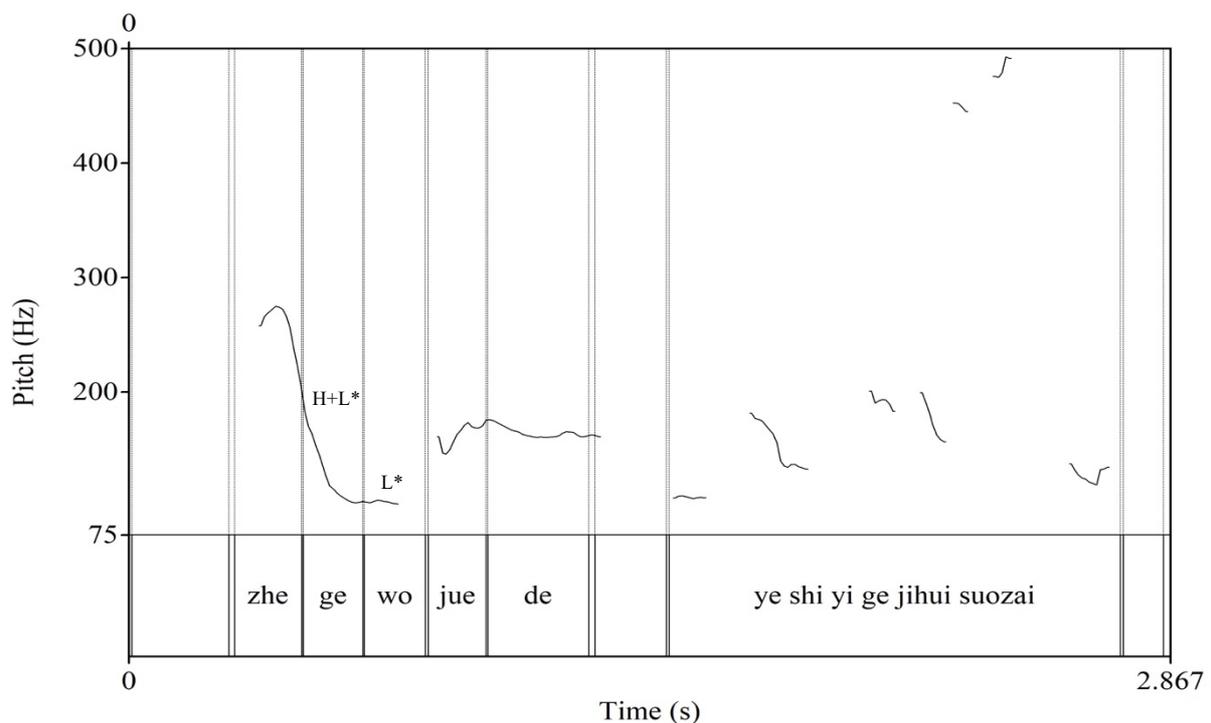


Figure 3.42: *A-Topic + G-Topic + NS*

It can be finally argued that (non-lexical) prosody plays an important discourse-related function in the distinction between different Topic types also in a tone language like Mandarin Chinese. Specifically, we claim that a left-peripheral constituent realized with an H+L\* contour is interpreted as an A-Topic, which instantiates a Topic chain and allows for the interpretation of the following NSs.

### 3.5. The syntax of Topics: an updated hierarchy

In §1.2.2. of the present work, a Topic hierarchy has been proposed (re-proposed below in (19)) based on the different studies and proposals discussed in chapter 1:

(19) [ShiftP A-Topic [FrameP FS [ContrP C-Topic [FocP [GB [FamP G-Topic/FS [TP ]]]]]]]]

To check whether this hierarchy can also account for the information-structural array of Mandarin Chinese, let us consider the following excerpts from the experiment and the interviews used in this investigation.

Since in the previous section it has already been shown that an A-Topic can precede a G-Topic (example (18) above), let us now focus on other combinations as the one illustrated in (20), and its intonational contour (Figure 3.43), in which an A-Topic (*wo* ‘I’) precedes a 4<sup>th</sup> tone ending C-Topic (*zhege* ‘this’), thus both showing an H+L\* contour:

(20) [*Wo*]<sub>A-Topic</sub> [*zhe ge*]<sub>C-Topic</sub> *dei chengqing yixia*.  
 1SG            this CL            need clarify    once  
 ‘[I]<sub>A-Topic</sub> [this (thing)]<sub>C-Topic</sub> need to clarify a bit (not anything else).’

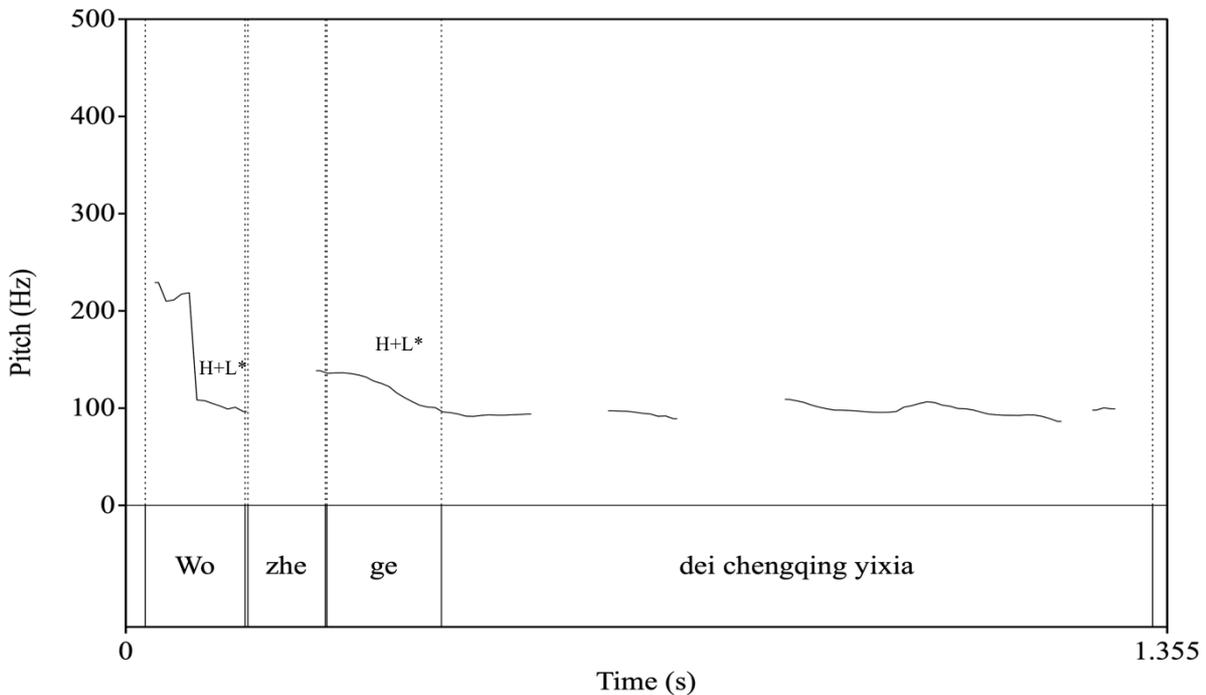


Figure 3.43: *A-Topic + C-Topic*

The data analyzed so far show that an A-Topic precedes both a C-Topic and a G-Topic, in line with the hierarchy in (19). Furthermore, according to the same hierarchy, a G-Topic is lower than a C-Topic. This proposal also seems to be confirmed by evidence like the following, in which the 4<sup>th</sup> tone ending C-Topic *zhege zhuantai* (‘this condition’, contrasted with other conditions the speaker was talking about), precedes the G-Topic *wo* (‘I’):

- (21) [*Zhe ge zhuangtai*]<sub>C-Topic</sub> [*wo*]<sub>G-Topic</sub> *ruguo zai hui-dao ... wo bu dui le.*  
 this CL condition 1SG if again return to 1SG NEG right LE  
 ‘[(To) this condition]<sub>C-Topic</sub> if [I]<sub>G-Topic</sub> would go back ... I would be wrong.’

As expected, the former presents the typical intonational contour of a 4<sup>th</sup> tone ending C-Topic (H+L\*), while the latter is realized with the typical L\* F0 contour of G-Topics, as the Figure 3.44 shows:

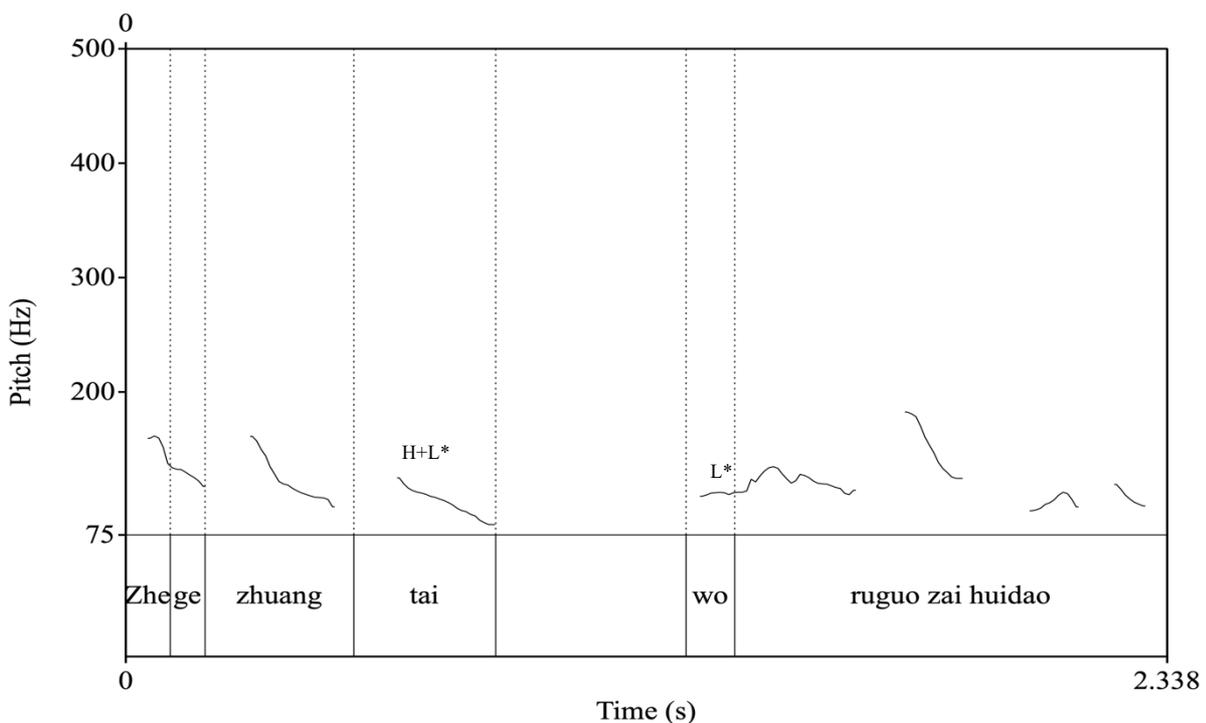


Figure 3.44: *C-Topic + G-Topic*

It can thus be argued that the A-Topic precedes both the G- and the C-Topic, and that the latter precedes the G-Topic, once again in line with the hierarchy proposed in (19).

Let us now examine the position of FrameP with respect to A-Topics. The first condition to be considered in this respect is that of an A-Topic (*Gaofei he Milaoshu* ‘Goofy and Micky Mouse’) preceding the relevant (temporal) Frame (*jintian* ‘today’)<sup>60</sup>:

<sup>60</sup> It should be noticed that the present analysis is only aimed to investigate the different prosodic features of the three types of Topics taken into consideration (namely, A-, C- and G-Topic). Therefore, no prosodic analysis will be provided for Frames.

- (22) [*Gaofei he Milaoshu*]<sub>A-Topic</sub> [*jintian*]<sub>Frame</sub> *you yi ge xin de jihua.*  
 Goofy and Micky Mouse today have one CL new DE plan  
 ‘[Goofy and Micky Mouse]<sub>A-Topic</sub> [today]<sub>Frame</sub> have a new plan.’

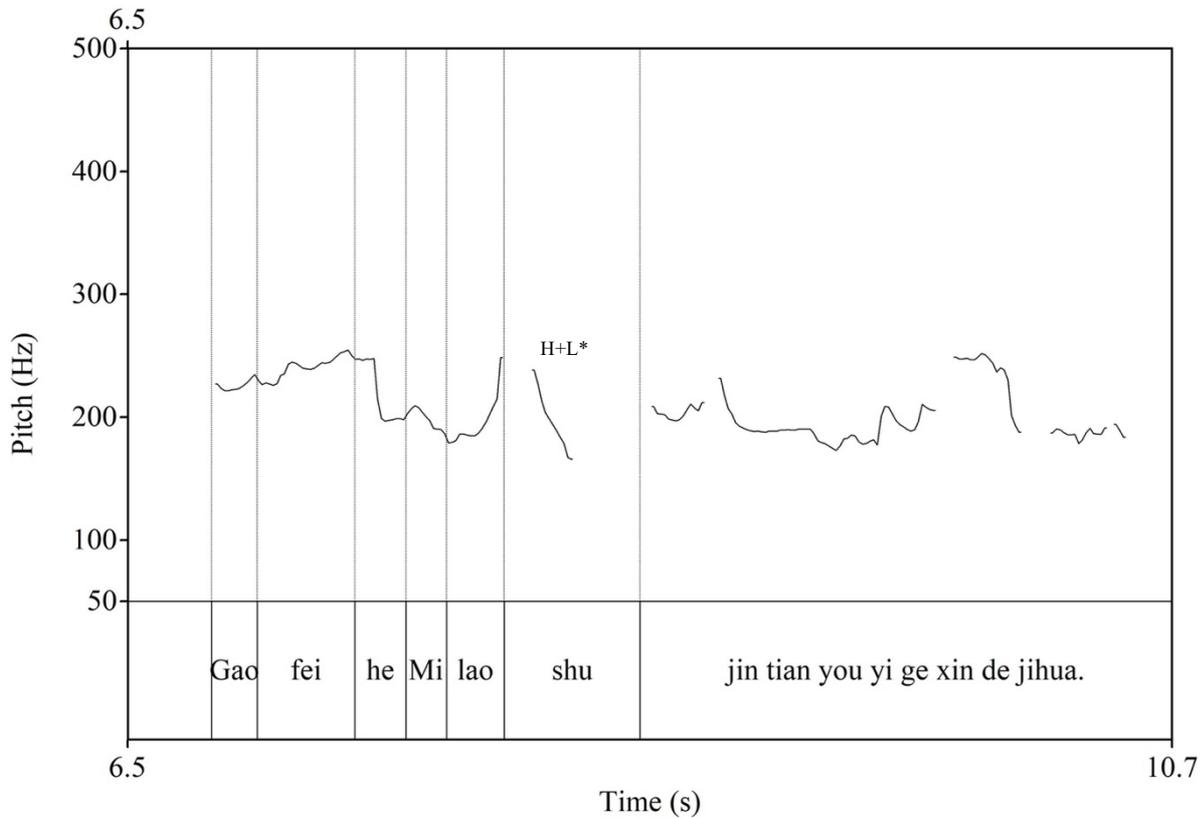


Figure 3.45: *A-Topic + Frame*

These data seem to be in line with the hierarchy proposed in (19). However, our analysis shows that an A-Topic can *also follow* a Frame, if this latter is a temporal Frame. This is shown by examples like (1) above, re-proposed below in (23) for convenience, with its intonational contour (Figure 3.46 below):

- (23) Speaker 3:

[*Zhe yi tian*]<sub>Frame</sub> [*Gaofei he Milaoshu*]<sub>A-Topic</sub> *zai yi tiao*  
 this one day Goofy and Micky Mouse at one CL  
*xiangjian xiao dao xiangyu.*  
 country little road meet

‘[This day]<sub>Frame</sub>, [Goofy and Micky Mouse]<sub>A-Topic</sub> meet on a little countryside road.’

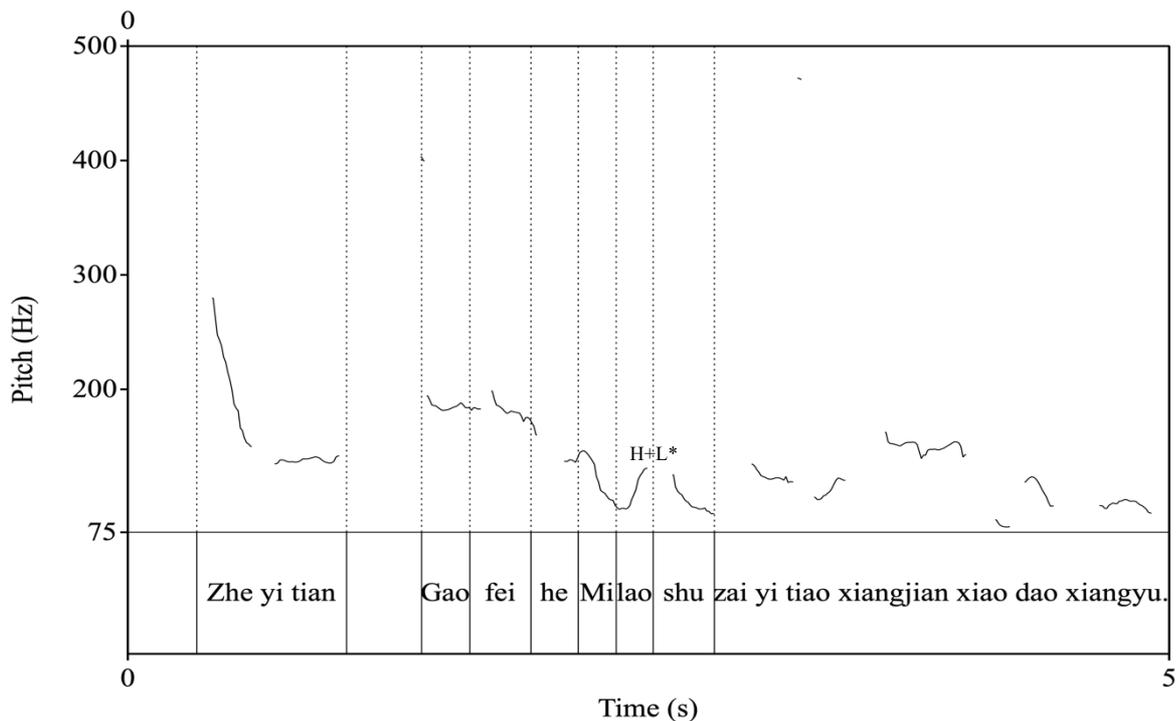


Figure 3.46: *Frame + A-Topic*

Given this double possibility for the reciprocal position between A-Topic and Temporal Frames, let us now investigate the position of C- and G-Topics with respect to FrameP.

As it has already been shown with example (7a-b) above, proposed again in (24) below, a C-topic follows the FrameP node. As a matter of fact, both the 1<sup>st</sup> tone syllable ending C-Topic1 *Gaofei* ('Goofy' with an H\* contour) and the 3<sup>rd</sup> tone syllable ending C-Topic2 *Milaoshu* ('Micky Mouse', with an H+L\*+H contour) follow two Frames, *xianzai* 'now' and *zhe shihou* 'this time' respectively:

(24) Speaker 1:

a. [*Xianzai*]<sub>Frame1</sub> [*Gaofei*]<sub>C-Topic1</sub> *dao hai-di qianshui*  
 now Goofy arrive sea-botto dive

b. *En* [*zhe ge shihou*]<sub>Frame2</sub> [*Milaoshu*]<sub>C-Topic2</sub> *ye jie ... xia dao hai-di.*  
 ehm this CL time Micky Mouse also jie descend RESULT sea-bottom

'[Now]<sub>Frame</sub> [Goofy]<sub>C-Topic1</sub> goes diving under the sea.

Ehm, [this time]<sub>Frame</sub> [Micky Mouse]<sub>C-Topic2</sub> goes under the see as well.'

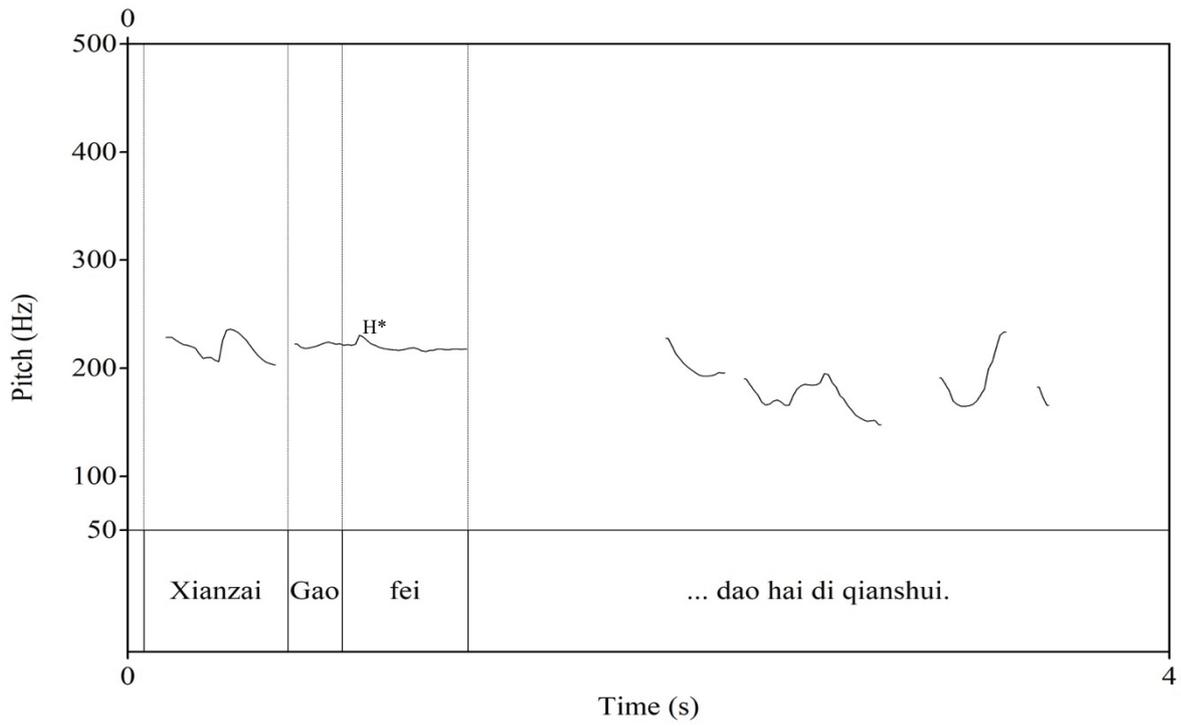


Figure 3.47: *FrameP* + *C-Topic* – (24a)

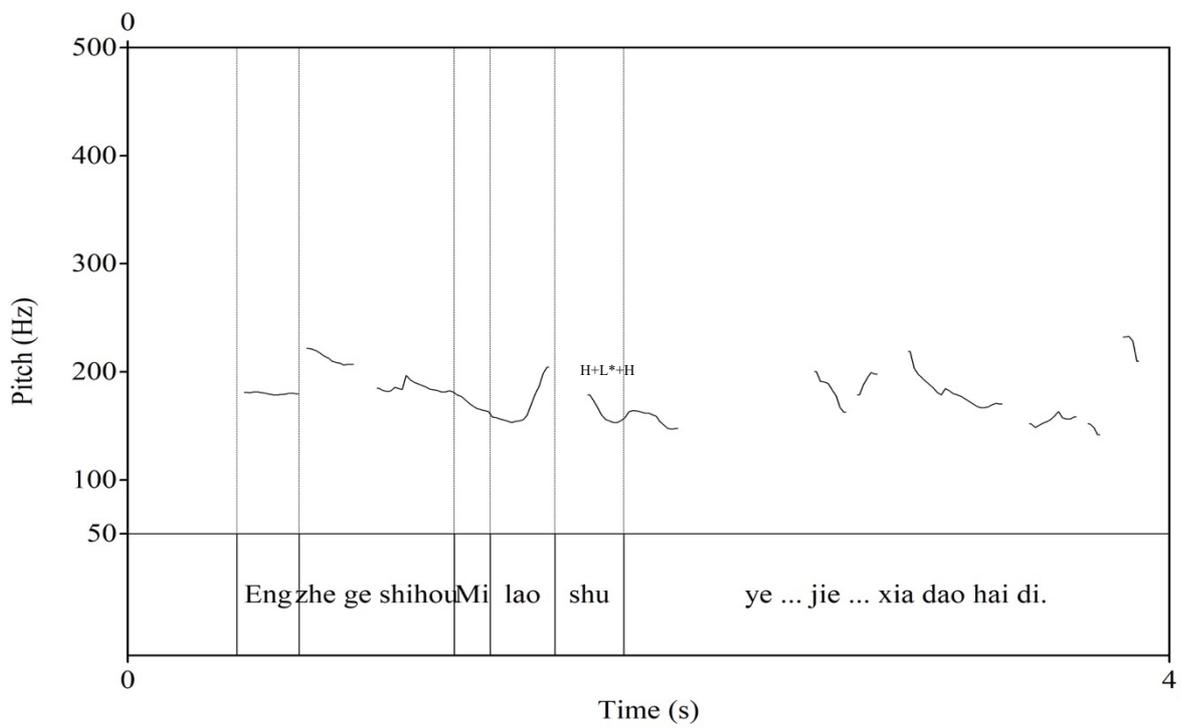


Figure 3.48: *FrameP* + *C-Topic* – (24b)

Considering that G-Topics follow the C-Topic, and that a C-Topic follows a FrameP, we should expect a G-Topic to follow FrameP in the hierarchy. This prediction is borne out by data, since no G-Topics preceding a Frame have been found in the corpus examined.

For further evidence, consider the following example, in which the L\* G-Topic (*tamen* ‘they’) follows the temporal adverbial clause, and its relevant Figure below:

- (25) [*Jin le jia yihou*]<sub>Frame</sub> [*tamen*]<sub>G-Topic</sub> *zai- yiqi zai huiyi*  
 enter PERF house after 3PL ZAI together ZAI recall  
*suo jingli de yi qie meihao de shiqing.*  
 SUO go through DE one CL beautiful thing  
 ‘[Once entered the house]<sub>Frame</sub> [they]<sub>G-Topic</sub> are recalling to their mind the beautiful things they experienced.’

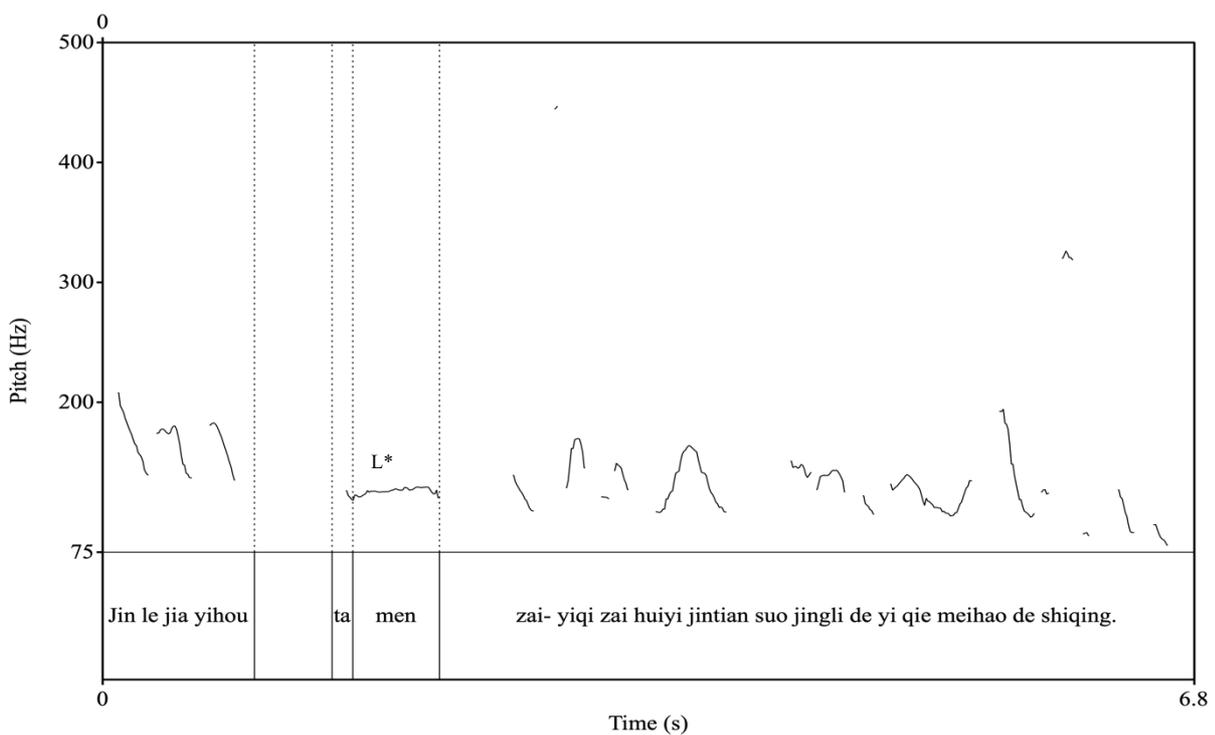


Figure 3.49: *FrameP* + *G-Topic*

Furthermore, these data are in line with the proposal put forth in the previous chapter, according to which both central adverbial clauses and A-Topics are derived via Move in Chinese. As a matter of fact, the Frame in (25) is a central temporal adverbial clause, hence subject to movement. Therefore, in this structural condition an overt A-Topic would obtain an agrammatical clause, contrary to a low toned G-Topic.

According to the data analyzed, it can thus be argued that the hierarchy proposed in (19) can also account for a language like Mandarin Chinese. However, sentences like (23) above seem to show that a further FrameP node (for temporal Frames, in some cases introduced by PPs) should be assumed above ShiftP. Of course, further research is needed to substantiate this proposal and examine whether and why this possibility is actually restricted to temporal Frames.

To conclude, since no left dislocated Topics and Hanging Topics have been found in the oral corpora used for the present analysis, and Focus has not been analyzed, the following hierarchy can be proposed for Mandarin Chinese, excluding FocP, GP and possible nodes for Hanging Topics:

(26) [<sub>FrameP</sub> FS [<sub>ShiftP</sub> A-Topic [<sub>FrameP</sub> FS [<sub>ContrP</sub> C-Topic [<sub>FamP</sub> G-Topic [<sub>TP</sub> ]]]]]]]

## 4. Conclusions

### 4.1. Research goals and results of the experiments

The present work was intended to investigate whether

- (i) the Topic Criterion and the Topic Chain Condition repeated below for convenience in (1) and (2) respectively – validated for consistent and partial pro-drop languages in Frascarelli (2007 and subsequent works) – can also account for the interpretation of NSs in a radical pro-drop language like Chinese, and
- (ii) different types of Topics (namely, A-, G- and C-Topic) are located in different positions in the split-CP area and are characterized by specific prosodic features, despite Chinese being a tone language.

#### (1) TOPIC CRITERION

- a) [+aboutness] is connected with Extended Projection Principle (EPP) feature in the high Topic field that yields a specific discourse-related property, namely ‘Aboutness’.
- b) The [+aboutness] Topic matches with an argument in the main clause through AGREE.
- c) When continuous, the [+aboutness] Topic can be null (i.e., silent)

#### (2) TOPIC-CHAIN CONDITION (Frascarelli 2018: 19)

- a. An A-Topic chain can only be started from a root (or root-like) C-Domain.
- b. The A Topic heading the Topic chain can be silent.

As for the working hypothesis (i), the data collected through the acceptability and the oral production experimental tests conducted for the present analysis have shown that the interpretation of NSs depends on the creation of (A-)Topic chains in Chinese as well. Evidence can be provided by examples like (3) below, in which the two relevant NSs are interpreted as co-referents to the overt A-Topic *tamen* (‘they’) in the first (leftmost) clause:

- (3) *yushi* [**tamen**]<sub>A-Topic</sub> *na zhe san*, <**tamen**> *nazhe shouyinji*, <**tamen**> *nazhe chonglang banr*.  
‘So [**they**]<sub>A-Topic</sub> take the umbrella, <**they**> take the radio, <**they**> take the surf-board.’

Nevertheless, the acceptability of NSs in Mandarin Chinese also seems to depend on three additional factors, namely: ambiguity, locality and the realization of a Topic shift. In particular, no more than one feasible antecedent should be offered, so as to avoid ambiguity (bleeding acceptability). In the case of ambiguity, the context can help interpretation; nevertheless, nonlocal antecedents and

Topic shifts should be avoided in any context. Finally, data show that non-local antecedents are less favored than Topic shifts.

Therefore, the following Acceptability Hierarchy has been proposed for Chinese:

(4) ambiguity < non-local antecedent < Topic shift

Furthermore, the data examined show that a distinction between central and peripheral adverbial clauses also holds for a language like Chinese. Specifically, the former is derived by Move from original Merge in the split-IP zone to a node in the C-domain (which, according to Frascarelli (2018) can be assumed to be FrameP), while the latter is externally merged in the split-CP area, in line with Haegeman (2004 and following works).

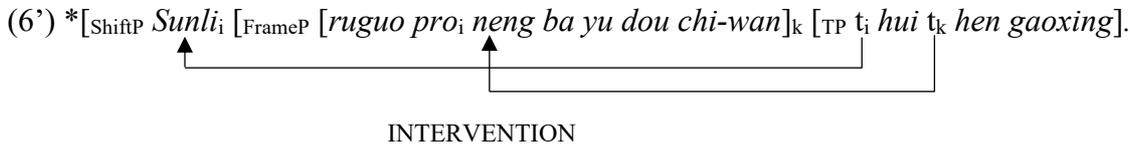
Importantly, this analysis can also provide empirical support to the fact that an A-Topic in Chinese is derived by Move. As a matter of fact, when an A-Topic precedes a peripheral (concessive) adverbial clause like in (5), the sentence is judged as acceptable:

(5) [*Sunli*]<sub>i</sub>, *suiran* pro *tongguo le gaokao*,  
 Sunli although pro pass PERF university admission exam  
*danshi haishi bu gaoxing*.  
 but still NEG happy.  
 ‘Sunli, although (she) passed the university admission exam, (she) is still not happy.’

(5') [<sub>ShiftP</sub> [*Sunli*]<sub>i</sub>, [<sub>FrameP</sub> [*suiran pro tongguo le gaokao*], [<sub>TP</sub> *t<sub>i</sub> haishi bu gaoxing*.]]]

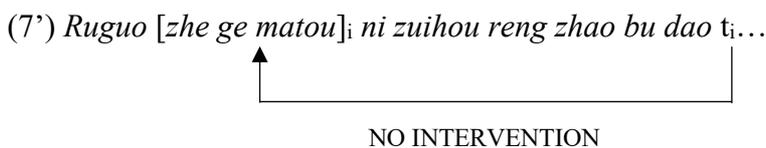
On the contrary, when an A-Topic precedes a central (conditional) adverbial clause like in (6), the sentence is rated as not acceptable. This can be explained in the light of the fact that the movement of both the A-Topic and the conditional adverbial clause to the C-domain triggers Intervention effects, as it is shown in (6'), thus affecting the acceptability of the relevant sentence:

- (6) \*Sunli, *ruguo pro neng ba yu dou chi-wan, hui hen gaoxing.*<sup>61</sup>  
 Sunli if pro can ba fish all eat-finish can very happy  
 LIT: ‘Sunli, if (she) can finish all the fish, (she) will be happy.’



However, contrary to Haegeman (2004), it is claimed that conditional adverbial clauses are not subject to OP movement in Chinese, since a constituent in the (conditional) adverbial clause can be topicalized in Chinese (unlike English) below *ruguo* (‘if’), which is thus analyzed as a C°. Consider example (7) and its structure in (7’):

- (7) *Ruguo zhe ge matou ni zuihou reng zhao bu dao, bie wangji hai you wo de “gupo wu” [...]*  
 If this CLASS wharf 2.SG last still find NEG RIS NEG forget still have  
 1.SG DE grandfather’s sister house  
 Lit: ‘If at the end that wharf you won’t find, don’t forget there is also the house of my grandfather’s sister.’



Finally, the analysis of data shows that a distinction between bridge and factive verbs must be also assumed for a language like Chinese, in line with (B&F 2010). Indeed, contrary to factive verbs, bridge verbs are endowed with illocutionary force, thus allowing for A-Topics to be realized in the CP area of their complements. Nevertheless, when a context suggests an antecedent for the embedded NS that is different from the matrix A-Topic, speakers’ interpretation change accordingly (as it is shown in example (8) and in its relevant structure in (8’)), though acceptability is negatively affected:

<sup>61</sup> For simplicity and uniformity with the analysis conducted so far, we define this NS as *pro* in (6). However, we will resume and refine the analysis of this empty category later on in the present chapter.

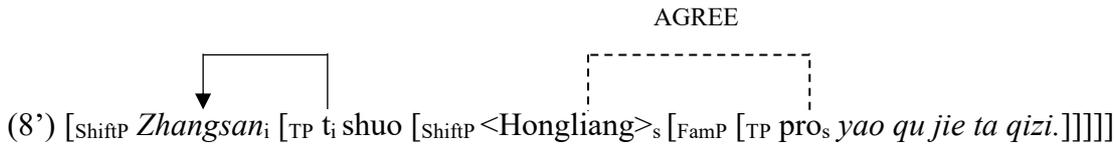
(8) [*Zai huiyi qijian Hongliang turan zhan-qi-lai pao le chu*]

[During the meeting, Hongliang stood up abruptly and ran out of the room]

Zhangsan shuo pro yao qu jie ta qizi.

Zhangsan say pro have to go pick up 3.SG wife

‘Zhangsan said (he) has to go and pick up his wife.’



On the other hand, since no A-Topic is allowed in the complement of a factive verb (like in (9) below), no Topic shift can be implemented and interpretation is not at stake. Nevertheless, acceptability is bleeded as a consequence of an “interpretative crash” between context and information-structure:

(9) [*Hongliang gaosu Zhangsan ta zuijin you kunnan, ta shiye le erqie ta nü'er Sunli xiang chuguo xuexi.*]

[Hongliang told Zhangsan that he has been having some difficulties lately, he lost his job and his daughter would like to study abroad.]

?Zhangsan hen yihan pro bu neng gei Sunli qian.

Zhangsan very regret pro NEG can give Sunli money

‘Zhangsan regrets that (he) cannot give money to Sunli.’

(9') ?[<sub>ShiftP</sub> ZS<sub>i</sub> [<sub>TP</sub> t<sub>i</sub> hen yihan [<sub>ShiftP</sub> <HL> [<sub>FamP</sub> <ZS><sub>k=i</sub> [<sub>TP</sub> pro<sub>k</sub> bu neng gei Sunli qian.]]]]]

#### 4.2. Results of the prosodic analysis

As for the working hypothesis (ii), the data collected through the oral production experiment and the analysis of the two interviews (cf. Chapter 3) show that different types of Topics are realized with different F0 contours also in a tone language like Mandarin Chinese.

Specifically, the pitch accent seems to have a prominence-landing function on the rightmost syllable of the Topic constituent that is consistently realized with a complex H+L\* contour, in the case of A-Topics, or with an L\* F0, in the case of G-Topics, independently of their tone (1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> or neutral).

On the contrary, C-Topics in Chinese do not have a specific intonational contour, as the shape of the F0 contour of the rightmost syllable of this type of Topic seems to be determined by its lexical tone. Therefore, a 1<sup>st</sup> tone syllable is realized with an H\* contour, a 2<sup>nd</sup> tone syllable with an L+H\* F0, a 3<sup>rd</sup> tone syllable has a H+L\*+H shaped contour and, finally, a 4<sup>th</sup> tone syllable presents an H+L\* F0.

Furthermore, the data collected for the prosodic analysis also support the necessity to postulate the existence of Topic chains (cf. (3) above), allowing for the interpretation of the following NSs. As a matter of fact, when an NS is realized, it refers to a previous DP constituent that is marked with the typical H+L\* intonational contour of A-Topics.

In this respect, consider the example in (10) below, in which the speaker realizes a Topic shift from *tianjian de xiao lu* ('the small road of the farm') to *tamen* ('they'), then producing a sentence with an NS refereeing to the last A-Topic (namely, *tamen*):

- (10) [*Tianjian de xiao lu*]<sub>A-Topic1 (H+L\*)</sub> *feichang piaoliang*. [*Tamen*]<sub>A-Topic2 (H+L\*)</sub> *you qu le haibian*,  
 <tamen> = A-Topic2 *dai zhe zhangpeng he hua ... huaban*.  
 '[The small road of the farm]<sub>A-Topic1 (H+L\*)</sub> is very beautiful. [They]<sub>A-Topic2 (H+L\*)</sub> go to the beach, <they> = A-Topic3 bring a tent and a skate ... skateboard.'

#### 4.3. Topic hierarchy in Mandarin Chinese

The analysis of the data collected also show that a FS can either precede (iff temporal) or follow an A-Topic, as is shown in examples (11) and (12) respectively, while they always precede C- and G-Topics (examples (13) and (14) respectively):

- (11) [*Zhe yi tian*]<sub>Frame</sub> [*Gaofei he Milaoshu*]<sub>A-Topic</sub> *zai yi tiao*  
 this one day Goofy and Micky Mouse at one CL  
*xiangjian xiao dao xiangyu*.  
 country little road meet  
 '[This day]<sub>Frame</sub>, [Goofy and Micky Mouse]<sub>A-Topic</sub> meet on a little countryside road.'
- (12) [*Gaofei he Milaoshu*]<sub>A-Topic</sub> [*jintian*]<sub>Frame</sub> *you yi ge xin de jihua*.  
 Goofy and Micky Mouse today have one CL new DE plan  
 '[Goofy and Micky Mouse]<sub>A-Topic</sub> [today]<sub>Frame</sub> have a new plan.'

- (13) a. [*Xianzai*]<sub>Frame1</sub> [*Gaofei*]<sub>C-Topic1</sub> *dao hai-di qianshui*  
 now Goofy arrive sea-bottom dive
- b. *En [zhe ge shihou]*<sub>Frame2</sub> [*Milaoshu*]<sub>C-Topic2</sub> *ye jie ... xia dao hai-di.*  
 ehM this CL time Micky Mouse also jie descend RESULT sea-bottom  
 ‘[Now]<sub>Frame</sub> [Goofy]<sub>C-Topic1</sub> goes diving under the sea.  
 Ehm, [this time]<sub>Frame</sub> [Micky Mouse]<sub>C-Topic2</sub> goes under the see as well.’
- (14) [*Jin le jia yihou*]<sub>Frame</sub> [*tamen*]<sub>G-Topic</sub> *zai- yiqi zai huiyi*  
 enter PERF house after 3PL ZAI together ZAI recall  
*suo jingli de yi qie meihaode shiqing.*  
 SUO go through DE one CL beautiful thing  
 ‘[Once entered the house]<sub>Frame</sub> [they]<sub>G-Topic</sub> are recalling to their mind the beautiful things  
 they experienced.’

Furthermore, A-Topics always precede C- and G-Topics (as it is shown in (15) and (16) respectively), and G-Topics always follow C-Topics, like in (17):

- (15) [*Wo*]<sub>A-Topic</sub> [*zhe ge*]<sub>C-Topic</sub> *dei chengqing yixia.*  
 1SG this CL need clarify once  
 ‘[I]<sub>A-Topic</sub> [this (thing)]<sub>C-Topic</sub> need to clarify a bit (not anything else).’
- (16) [*Zhe ge*]<sub>A-Topic2</sub> [*wo*]<sub>G-Topic</sub> *juede <zhe ge> ye shi yi ge jihui*  
 this CL 1SG think this CL also be one CL opportunity  
 ‘[This (thing)]<sub>A-Topic2</sub>, [I]<sub>G-Topic</sub> think <this thing> is also an opportunity.’
- (17) [*Zhe ge zhuangtai*]<sub>C-Topic</sub> [*wo*]<sub>G-Topic</sub> *ruguo zai hui-dao ... wo bu dui le.*  
 this CL condition 1SG if again return to 1SG NEG right LE  
 ‘[(To) this condition]<sub>C-Topic</sub> if [I]<sub>G-Topic</sub> would go back ... I would be wrong.’

To conclude, the present data allow us to assume the following peripheral hierarchy for Mandarin Chinese:

- (4) [FrameP FS [ShiftP A-Topic [FrameP FS [ContrP C-Topic [FamP G-Topic [TP ]]]]]]

#### 4.4. Open questions for further research

Despite the analysis of central and peripheral adverbial clauses leads us to conclude that an A-Topic is derived by Move in Chinese, the data collected do not provide sufficient systematic evidence that this derivation can be also assumed for other types of Topics (i.e., C- and G-Topics). Therefore, further research is needed to investigate the nature and derivational properties of C- and G-Topics, along with Frames and different types of adverbial clauses.

As for prosodic analysis, we have seen that close similarities exist between the 4<sup>th</sup> tone A- and C-Topics, since in both cases they are realized with an H+L\* contour. However, additional data should be collected in this respect, so as to delve into intonational phenomena and investigate whether and, in case, how Chinese native speakers can disambiguate these two types of Topic constituents.

Moreover, an additional left-open question concerns C-Topics, since they do not show a specific intonational contour. In fact, their F0 contour seems to depend on the tone of their rightmost syllable. As it has been shown in Chapter 3, these features show close similarities with Foci, which are realized according to their tonal properties (cf. Xu 1999). Further research should be thus dedicated to this issue, so as to check whether (and how) Chinese native speakers can distinguish C-Topics and Focus DPs in a sentence initial position.

Finally, the cases of C-Topics ending with a neutral final syllable were too scanty to make a reliable generalization. Additional data should be collected in future works to check whether neutral tone syllables show a specific intonational contour when being the rightmost syllable of a C-Topic, or if their F0 depends on other factors like, for instance, the tone of the syllable that precedes them.

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### **Sitography**

Interview 1 (Ma Yun), (2021, August 30)

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Interview 2 (Yue Yunpeng), (2021, August 30)

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