

The acceptability and interpretation on Null Subjects in Italian L1 learners of Chinese L2.

An interface (syntax-prosody) analysis of Topic chains in adverbial clauses.

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Aim of this work

- investigate the acceptability and interpretation of referential null subjects (NSs) in peripheral and central adverbial clauses for Italian L1 learners (ILs) of Chinese L2;
- compare ILs' data with Chinese native speakers (CNSs)'s in order to evaluate differences and similarities from an information-structural point of view.

1. Null subject languages: an information-structural approach

The interpretation of null subjects in an IS approach

Frascarelli (2018): the interpretation of a referential NS depends on a matching relation (AGREE) with a specific type of Topic: the Aboutness-shift (A'-Topic (Frascarelli, 2007).

The A-Topic:
Position: merged in the highest Topic position in the split C-domain (ShiftP) and characterized by a raising contour (L*+H) in the languages examined so far for this respect (Italian, Spanish, German, Somali, Tagalog).
Feature specification: Shift* is specified for the [aboutness]; [shift] features. Hence, the A-Topic is endowed with the discourse property of introducing/shifting "what the sentence is about" (Reinhart 1981).

(1) [ForceP [Shift[shift, aboutness] [FrameP [ContrP [FocP [FamP [FinP [TP
→ **the A-Topic is an entity** providing the specific "file card" (Heim 1982) in the mental folder in which relevant information is to be stored.

→ **the A-Topic is a conversational move** insofar as topic selection is a speech act itself (cf. Krifka 2001: 25); consequently, its realization is **restricted to root clauses**, since only root clauses are endowed with illocutionary force.

(2) **Interface Root Restriction** (Bianchi and Frascarelli 2010, [41])
Information Structure phenomena that affect the conversational dynamics (CG management) must occur in clauses endowed with illocutionary force that implement a conversational move.

Topic Criterion and the formation of Topic chains

Every predication (i.e. non-thetic) sentence must have a topic (cf., among others, Kuroda 1965; Lambrecht 1994, Krifka 2007). Consequently:

i) every root (or root-like) clause must realize an A-Topic in its C-domain;
ii) according to Generative Grammar, the AGREE relation is local;
iii) discourse analysis implies a **multi-clausal domain**.

→ When an A-Topic is maintained continuous across sentences, it needs not be overtly realized in all the subsequent C-domains → silent (null) A-Topics.

The Topic Criterion (3) and the Topic Chain Condition (4) are thus assumed:

(3) Topic Criterion (Frascarelli 2007 [35])
a) The high Topic field in the C-domain contains a position in which the [shift] feature is encoded and matched (via AGREE) by the local (3rd person) NS.
b) When continuous, the A-Topic can be null (i.e., silent).

(4) 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.

Working hypothesis

Central and peripheral adverbial clauses in Chinese and in Italian are subject to different structural derivations, affecting the interpretation of NSs in Chinese by ILs.

2. The Experiment

Structure and informants

	TOT	Age (av)	sex		education		field		Linguistics competence
CNSs	129	25	M	F	univ.	other	human.	other	Yes
ILs	21	25	0%	100%	100%	0%	100%	0%	100%

Table 1: Background data on informants

- 9 target sentences + 3 distractors;
- When relevant, tokens were provided **twice** in the questionnaire:
 - out-of-the-blue sentences;
 - with a context;
- Acceptability was expressed on a Likert scale, from 0 to either 4 or 6
- Only after a positive evaluation would a sub-question follow, asking for the antecedent of the null/overt subject pronoun in the target sentence.

Background for the present investigation: Frascarelli & Casentini (2019)

Radical NS languages: no verbal inflection; the subject, as well as the object, can be unexpressed (cf. D'Alessandro, 2015).

The most important difference between consistent and radical NS languages rests on the **use and acceptability of silent topics**:

→ The "ideal antecedent" for an NS in radical Chinese is an **overt, local A-Topic, merged in a root clause**.

(5a) Zhangsan shuo [e]/ta yao qu jie ta qizi.
Zhangsan say [e]/3SG have to go pick up 3SG wife
'Zhangsan said [e]/he has to go and pick up his wife.'

	Acceptability Value 3 + 4	Interpretation
[e]	87%	Zhangsan Somebody else
ta	84%	82% 2%

Table 2: NS and pronoun under a bridge verb

(5a') [ShiftP Zhangsank [TP [e]k shuo [ShiftP <Zhangsank> [TP [e]k yao qu jie ta qizi]]]

(5b) Zai huiyi qijian Hongliang turan zhan-qilai pao le chu.
in meeting time Hongliang abruptly stand up run PERF go out
During the meeting, Hongliang stood up abruptly and ran out (of the room)

Zhangsan shuo [e]/ta yao qu jie ta qizi.
'Zhangsan said [e]/he has to go and pick up his wife.'

	Acceptability Value 3 + 4	Interpretation
[e]	58%	Zhangsan Hongliang
ta	67%	19% 39% 52%

Table 3: NS and pronoun under a bridge verb with context

(5b') [ShiftP Zhangsank [TP [e]k shuo [ShiftP <Hongliang> [TP [e]k/z yao qu jie ta qizi]]]

NS
→ Acceptability decreases: the difference between values (3 & 4) attested here and in (5a) is statistically very significant (p = 0.0003).
→ **Interpretation**: the embedded null A-Topic *Hongliang* (cf. (5b')) is not significantly preferred (p = 0.6650) to Zhangsan, **despite the context**. Chance answers show that speakers are confused.

Overt Pronoun
→ Acceptability suffers also in this case, showing the **relevance of Topic chains for overt subjects as well**: as for interpretation.
→ **Obviation effects** are attested w.r.t. the matrix A-Topic.

6. The prosody of Chinese: some background for analysis

Mandarin Chinese tones and tone sandhi

Image 1: tones of Mandarin - Chao tone letters

According to (among others) Lee (2002), in Mandarin Chinese, sandhi is described as **right-headed**, hence the rightmost tone **does not change** in combinations:

213 + 213 → 35 + 213

Image 2: T3 + T3

213 + 213 + 213 → 35 + 35 + 213 or 21 + 35 + 213

Image 3: T3 + T3 + T3

213 + (55/35/21) → 213 + (21/35/21)

Image 3: T3 + T3 + T3 + T3

Considering that:

- Pitch accents have a prominence-lending function on the stressed syllables with which they are associated (cf. Pierrehumbert, 1980).
- Mandarin sandhi is **right-headed** → the dominant tone is on the right.

Proposal

In Chinese, **pitch accents have a prominence-lending function on the rightmost tone**.

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Central and peripheral adverbial clauses

Haegeman (2002, 2010, 2012): the distinction between *central* and *peripheral* adverbial clauses:

(a) The former modify the proposition expressed by the clause with which they are related; they resist root phenomena, a restriction that originates from their nature as relative clauses (which include Operator movement);

(b) the latter provide background propositions to be processed as the privileged discourse context for the proposition expressed in the associated clause; they are not derived by Operator movement and are compatible with root phenomena.

→ These two clausal types differ in both external and internal syntax.

In the present experiment pre-matrix position has been tested for:

- conditional adverbials (central type);
- concessive adverbials (peripheral type).

3. Results of the experiment

Conditional adverbial clauses

Let us first consider the case in which the A-Topic precedes a conditional clause:

(6) Sunli_i ruguo [e] neng ba yu dou chi-wan, [e] hui hen gaoxing.
Sunli if [e] can ba fish all eat-finish [e] can very happy
'Sunli, if [e] can finish all the fish, [e] will be happy.'

	Acceptability	Conditional clause	Interpretation
	Values 3 + 4	Sunli	Somebody else
CNSs	31%	86%	7% 86%
	Values 5 + 6	Sunli	Somebody else
ILs	18%	55%	0% 0% 50%

Table 4: pre-matrix conditional with a NS in adverbial and matrix clause

→ This sentence type is not accepteb by both groups.

However, if the A-Topic is silent and a referential subject is realized in the matrix clause, the target sentence is acceptable:

(7) Ruguo [e] neng ba yu dou chi-wan, Sunli hui hen gaoxing.
if [e] can ba fish all eat-finish Sunli can very happy
'If [e] can finish all the fish, Sunli will be happy.'

	Acceptability	Interpretation
	Values 3 + 4	Sunli
CNSs	87%	28% 56%
	Values 5 + 6	Sunli
ILs	28%	100% 0%

Table 5: pre-matrix conditional with a NS in the adverbial clause

It should be noticed that:

- in this case CNSs' acceptance is higher than ILs' (even though the difference is not truly significant: p = 0.0323)
- and
- CNSs are inclined to interpret the NS in the adverbial clause as co-referent to the silent A-Topic ('Somebody else'), whereas ILs select the subject of the matrix clause as the most feasible antecedent
- hence
- L1 seems to affect **interpretation** rather than (more than) acceptability.

Proposal

Given that a conditional adverbial clause is merged in the Split-TP zone and then moved to the left periphery (possibly, in Spec,FrameP), in line with Cinque (1999):

(a) *ruguo* is a **C' head** (not an operator, *contra* Haegeman 2010, 2012);

(b) the A-Topic moves from Spec,TP to Spec,ShiftP, triggering **intervention effects** on adverbial movement;

→ a **local (silent) A-Topic** is preferred as a chain head in this structural condition because it does not imply movement, hence no intervention effects can arise.

Therefore, we suggest the following derivation to account for (6):

(6') [_{Split} [Sunli]_i] [_{FrameP} [ruguo [e] neng ba yu dou chi-wan]_{i,adj}] [_{TP} t_i hui t_{adj} hen gaoxing]]

Let us focus on the interpretation of the NS sitting in the subject position of a conditional adverbial clause like (7) above.

- Remember that **Topic chains include the presence of low-toned DP**s.
- Specifically, **syntactic subjects**, apparently serving as antecedents, are in fact **low copies** of an A-Topic in the C-domain (hence, they are **G-Topics**).

This can provide the key to explain the difference between CNSs and ILs:

- In a sentence like (7) the adverbial clause A'-moves to the left periphery (cf. (6')).
- This movement interferes in the chain linking the (silent) A-Topic in the matrix C-domain and the embedded G-Topic (*Sunli*), which mediates in the AGREE relation with the *pro* in the adverbial clause.

(7') [[(silent) A-Topic ([Ruguo pro neng ba yu dou chi-wan)]_{adj}] Sunli hui t_{adj} hen gaoxing]

→ On the contrary, conditional clauses are **not subject to movement** in Italian, hence, no intervention effect is at stake on the topic chain illustrated in (7') and the AGREE relation is not affected.

4. Conclusion

- The A-Topic in Chinese is subject to A'-movement
- CNSs' acceptability of NSs is subject to **information-structural requirements** for interpretation at the interfaces: **locality** (avoiding intervention effects) and the realization of **overt (= PF visibility) A-Topics**.

As for adverbial clauses:

(i) **central clauses serve as a Frame-setters and show the properties of relative clauses**;

(ii) **concessive clauses are merged as subordinate clauses in the C-domain**.

→ **From an acquisitional perspective, L1 can affect interpretation but not acceptability.**

7. The experiment: the prosody of Topics and topic chains

The experiment

Informants: 6 Chinese native speakers were asked to describe a short story running on a PowerPoint presentation in which Goofy and Micky Mouse are enjoying a day at the seaside.

The video consists of 8 scenes (slides + movements), in which the two characters perform a sequence of actions which could induce the production of A-, C- and G-Topics. Specifically they: (1) meet in front of a house (together); (2) bring different items to the seaside (together); (3) build a castle in the sand (together); (4) swim underwater (one appears before the other); (5) eat an ice-cream (ice-creams have different colors); (6) go back home (together); (7) relax in the living room (in different ways); (8) go to sleep (with different objects in their hands).

We collected a total of **93 sentences** with overt Topics (either A-Topic or G-Topic), which were then analyzed through the PRAAT software.

In order to support the results emerging from the test, a second analysis was conducted on the data collected from two interviews and a monologue found on the web (**33 sentences** items).

The A-Topic

- In our data, when a new topic is introduced, it is always signaled by a **complex tone**, with a **final fall of the Fundamental Frequency (F0)**.
- This kind of tonal event can be described as a **H+L***.
- This contour is realized consistently, independent of the underlying tone.

Image 5: A-Topic - H+L* contour (1)

(13) Di er tian, Goofy he Miaooshu xiangyu zai mu wu qian.
'The following day, Goofy and Micky Mouse meet in front of the wooden house.'

The G-Topic

- G-Topics are always realized with a **L* contour** (consistent cross-linguistically).

Image 6: A-Topic - H+L* contour (2)

(14) Dao le wan shang, yueliang he xingxing dou chu lai le.
Lit: '(Once) night has arrived, the moon and the stars come out.'

Image 7: G-Topic - L* contour

(15) Tamen yiqi yao qu chu wu nian.
'They want to go to have fun together.'

Topic chains: an example

The topic chains produced by our informants are consistent with the topic chains condition (4). As an illustration, consider the following examples:

- 1 Goofy he Miaooshu (A-Topic H+L*) zai haibian mmm wanr shazi.
- 2 Tamen (G-Topic L*) zai shatan shang zhu ... jianzhou ... jianzao le yi zuo chengbao.
- 3 Tamen (G-Topic L*) wanr de hen kaixin.

1 'Goofy and Micky Mouse (A-Topic) are playing with sand on the beach.
2 They (G-Topic) are one the beach building ... building ... building a castle.
3 They (G-Topic) are joyfully playing.'

→ The topic chain is started by an A-Topic.
→ G-Topics (in the form of pronouns) are realized for **topic continuity**.

Notice that a pronoun is not always realized with an L* contour. Consider the following example:

- 1 Haiyi you xiao yu you guo.
- 2 En zhe ge shihou Miaooshu (A-Topic H+L*) ye jie ... xia dao haishi.
- 3 Xianzai tamen (A-Topic H+L*) lai dao haibian chi binglingling.

1 'In the sea a small fish swims.
2 At this time Micky Mouse (A-Topic) also 'jie' ... goes under the sea.
3 Now they (A-Topic) arrived on the beach and (are) eat(ing) an ice-cream.'

→ When the pronoun is not used for topic continuity, but to propose a **Topic shift**, it is marked as an A-Topic: **as expected**.

Image 8: Topic shift

(16) Xianzai tamen lai dao haibian chi binglingling.
'Now, they arrived on the beach ... (they) are eating ice-cream.'

Conclusion : Prosodic interface

This preliminary prosodic analysis provides evidence for the fact that:

(i) a **systematic connection exists** between prosody and discourse, also in a tone language like Chinese;

(ii) the realization of discourse-connected tonal contours is **not influenced by the underlying (lexical) tone**;

(iii) **G-Topics are low-toned** crosslinguistically.

❖ Nevertheless, the complex tone associated with the **A-Topic** is not the same as the tone emerged from the analyses realized so far on typologically different languages (Italian, Somali, German, Spanish, Tagalog), possibly due to phonological properties of Chinese. **The source of such tonal difference** is left open for future research.