

## **Topic-drop vs. pro-drop: Null Subjects in Chinese Native Speakers' L3 Italian**

The present study investigates the acquisition of null subjects by Mandarin Chinese native speakers (hereinafter Chinese NSs), with different levels of L2 English proficiency, at initial stages of L3 Italian acquisition. The aim is to find out if, when acquiring Italian null subjects, Chinese NSs resort to their L1, considering the (at least apparent) similarity shared by the two languages with respect to the availability of some form of null arguments. The study also explores whether, given the typological similarity between L2 English and L3 Italian, the former could represent a viable, although misleading, source of transfer. Four groups of Chinese NSs all at the same stage of L3 acquisition but differing with respect to their L2 English proficiency level, were tested. The results of an acceptability judgment task showed that the group with the lowest L2 proficiency, in two conditions (i.e., declarative and *wh*-question), was the most accurate in rejecting overt subjects, whereas in the third condition (i.e., expletive), they did not perform as accurately. However, the overall high acceptance of null subjects prevents us from concluding that L2 English acted as the sole source of transfer for learners with a high(er) proficiency: L1 transfer and classroom/textbook input might have contributed to shaping the acquisition of the L3.

**Keywords:** *Null subjects, L3 acquisition, Italian, Mandarin Chinese, pro-drop, topic-drop*

### **1. Introduction**

In the last two decades, studies on L3 acquisition have been growing in number and interest in this topic has become stronger. In particular, what researchers have focused on the roles played by previously acquired languages (namely L1 and L2) in the acquisition of a subsequent language (L3). Several theoretical frameworks have been proposed, but there is no consensus on which one is more valid. To date, most of the studies conducted in this area of research have provided support for models that take into account both previously acquired languages as potential sources of transfer depending on either typological or structural similarities between the L1 or L2 on one side, and the L3 on the other. These models include the Typological Primacy Model (Rothman, 2011), the Scalpel Model (Slabakova, 2016) and the Linguistic Proximity Model (Westergaard et al., 2016).

The present study investigates the acquisition of null subjects by a hitherto understudied population, i.e. Mandarin Chinese native speakers (hereinafter Chinese NSs), with different levels

of L2 English proficiency, who are learning Italian as an L3. The aim is to find out if, when acquiring null subjects in Italian (pro-drop), NSs of Chinese (topic-drop) resort to their L1, considering the at least apparent similarity shared by the two languages with respect to the availability of some form of null arguments. This study also explores whether, given the typological similarity between L2 English and L3 Italian, the former could represent a viable, although misleading, source of transfer.

A preliminary survey conducted on twenty oral and twenty written samples confirmed previous informal field-observations attesting a tendency, on the part of Chinese NSs, to overproduce overt subjects (especially in the form of pronouns) in contexts where, in Italian, they are ungrammatical or pragmatically odd. This behavior appears somehow anomalous, as null sentential subjects are available in Chinese, although their licensing strategy and distribution are not exactly the same as in Italian. Furthermore, the availability of an L2 perceived as more typologically similar to the L3 might lead learners to generalize the rules regulating the distribution of null arguments in the L2 to the L3, thus developing an obligatory overt subject/topic interlanguage grammar (ILG), as proposed by Kong (2015).

In order to see if and how Chinese and English respectively influence the acquisition of Italian, four groups of Chinese NSs, all at the same stage of L3 acquisition and only differing with respect to their L2 proficiency level, were tested and compared. When the L2 proficiency level is extremely low, it is likely that English will not be a viable source of transfer. Conversely, if the proficiency is higher, transfer from L2 is more likely to occur. The results of an acceptability judgment task showed that in fact the group with the lowest L2 proficiency, in two out of three conditions, was the most accurate in rejecting ungrammatical overt subjects. However, the overall

high acceptance of null subjects prevents us from concluding that L2 English served as the sole source of transfer for learners with a higher proficiency.

By investigating an unusual triad of languages and, most importantly, by focusing on the understudied relation between topic-drop and pro-drop languages, this study hopes to provide a valuable contribution to the growing field of L3 acquisition.

This paper is organized as follows: Section 2 provides an overview of the syntax of null arguments in pro-drop, topic-drop and overt-subject languages; Section 3 offers a literature review on native and non-native acquisition of null arguments; Section 4 presents the study; Section 5 reports the results; Sections 6 and 7 are dedicated to the discussion of the findings and the conclusion, respectively.

## **2. The syntax of null arguments**

### **2.1 Null Arguments in pro-drop, topic-drop, and overt subject languages**

According to Huang (1984) the distribution and reference of null arguments in natural languages should be approached by recognizing the existence of two distinct parameters: pro-drop and topic-drop.

Typically, pro-drop languages display a rich inflectional morphology which allows for subjects to be dropped because Agreement (Agr), a feature of Inflection (INFL), governs the empty category (*pro*). In other words, subjects can be dropped whenever there is overt agreement that helps to recover them. Rizzi (1986) argued that the licensing of *pro* takes place under head government, i.e. the null element in subject position is governed by INFL and identified through the rich agreement specification. Strictly speaking, *pro* is a pronominal empty category which is either free or locally bound by a subject<sup>1</sup>.

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<sup>1</sup> In (split)ergative languages, the empty category (*pro*) can be also bound by the object in cases where the verb agrees with the object, which can therefore be dropped, as recoverable via Agr.

Alexiadou and Anagnostopoulou (1998) propose that null subjects require a nominal D-feature, located in the head of AgrP, to be checked against the D-feature in a thematic element. In addition to the feature checking claim, Park (2004) suggests that null subjects are allowed by the [+interpretable] agreement feature, encoded in the verb-ending, which is nominal and has semantic content.

Conversely, overt-subject languages, like English, possess a [-interpretable] agreement feature which does not allow subjects to remain phonetically unrealized. The only allowed null argument is PRO, i.e. the subject of non-finite embedded clauses, which does not receive case and is bound by the matrix subject or the matrix object<sup>2</sup>.

In both pro-drop and overt-subject languages, objects typically cannot be dropped and must be phonetically realized as their  $\theta$ -feature is strong and must be checked at the syntactic level (Park, 2004)<sup>3</sup>.

INFL/Agr is not the only available licensing head for null arguments and, in fact, topic-drop languages, despite possessing a [-interpretable] agreement feature, do allow null arguments. In such languages, empty categories are licensed by a discourse-bound operator located in [Spec, CP]. Huang (1984) gives a split classification of the empty categories available in topic-drop languages, arguing that null subjects are *pro*, i.e. A-bound pronominals, whereas null objects are variables  $\bar{A}$ -bound by a topic. Still following Huang's analysis, since topics are not arguments, object empty categories are not pronominals and they are not even real empty categories as the object, before deletion, moves to a topic position where it is eventually dropped. Conversely,

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<sup>2</sup> Cases of subject ellipsis are attested only in informal/colloquial registers (cf. "diary style", e.g. Haegeman & Ihsane, 2001), where the omission of the subject pronoun is accepted at the beginning of a clause only if it is obvious who or what we are referring to.

<sup>3</sup> Brazilian Portuguese is an exception to this general rule as, with respect to null objects, behaves like topic-drop languages. Moreover, in (split)ergative languages, when the verb agrees with the object, this can be null as recoverable via Agr (cf. fn.1, p.3).

subjects are fully-fledged *pro* empty categories since, in their case, there is no movement at all. This pioneering analysis of topic-drop languages was revised over time as it failed to explain what could possibly prevent subjects, but not objects, from moving to a topic position before deletion. A better way to capture the status of both types of null arguments available in topic-drop languages is to concede the existence of an empty operator, generated in either subject or object positions, that moves to [Spec, CP] leaving behind an empty category (i.e. trace) which receives case and is  $\bar{A}$ -bound by it. The identification of the empty operator is ensured by a known topic, previously established in discourse (Guasti, 2016: 210). Thus, in topic-drop languages, both null subjects and null objects are dropped topics.

## 2.2 Null Arguments in Italian

In Italian, null subjects are the default, i.e. they are not only allowed but actually required in unmarked utterances, as shown by the following examples:

- (1) *Ultimamente pro leggo molto.*  
Lately *pro* read.1.SG a lot  
'I've been reading a lot lately.'
- (2) *Marco ha detto che pro arriva domani.*  
Marco has said that *pro* arrive.3.SG tomorrow.  
'Marco said he'll be back tomorrow.'
- (3) *pro Nevica.*  
*pro* snow.3.SG  
'It's snowing.'

As shown by the examples above, the information needed to identify the sentential subject is encoded in the verb ending. The use of an overt subject pronoun in lieu of *pro* in any of the examples provided would not just be unnecessary, but would also result in unnatural, pragmatically odd, and even ambiguous utterances. For instance, in (1), the presence of an overt subject pronoun, i.e. *io* 'I', would suggest a contrastive focus, as if the speaker were stating that he or she read a lot as opposed to another person who did not do the same; however, since a term of comparison is not

present, the use of an overt pronoun is not justified. As for (2), the use of pronoun *lui* ‘he’ in the embedded clause would make the sentence sound ambiguous in that it would be interpreted as an external referent, different from the matrix subject *Marco*. Furthermore, if pronoun *lui* is stressed, we would have a contrastive focus reading, i.e. Marco is stating that he, as opposed to someone else, will be back tomorrow. Lastly, since pro-drop languages characteristically lack expletives, the insertion of any sort of overt pronoun in (3) will yield an ungrammatical sentence.

Crucially, in Italian, null and overt subjects are not in free variation and their distribution is regulated by both universal and language-specific syntactic and pragmatic conditions<sup>4</sup>. Italian allows overt subject pronouns only in specific circumstances, such as marked utterances (e.g. clefts, topicalizations, and contrastive focus (4)), switch references (5), cases where verb morphology is opaque and does not help to recover the subject (e.g. subjunctive), or when subjects are followed by determiners (e.g. numerals, relative clauses, etc.).

- (4) *Ieri io ho lavorato sodo, tu invece cosa hai fatto?*  
 Yesterday I have.1.SG worked hard you instead what have.2.SG done  
 ‘Yesterday I worked hard, what have you done?’
- (5) *Marco<sub>k</sub> dice che lui<sub>j/\*k</sub> farà tardi .*  
 Marco say.3.SG that he do.3.SG late  
 ‘Marco<sub>k</sub> says he<sub>j/\*k</sub>’ll be late.’

Lastly, in Italian, whenever a verb requires an object, this must be phonetically realized, whether in the form of a noun, a tonic pronoun or a clitic.

### 2.3 Null Arguments in Chinese

Chinese is a typical topic-drop language which allows maximal freedom with respect to the use of both null subjects and null objects, as exemplified below:

- (6) *Zuótiān zài wàimiàn Ø chī le fàn*  
 Yesterday at outside Ø eat PFV rice  
 ‘Yesterday (I) ate out.’

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<sup>4</sup> Null subject pronouns (*pro*) can be compared to English unstressed subject pronouns, whereas overt subject pronouns are focused in the same way as stressed pronouns.

- (7) A: *Nǐ rènshì Zhāngsān ma?*  
 You know John INT  
 ‘Do you know John?’  
 B: *Ø Rènshì Ø*  
 Ø know Ø  
 ‘Yes, I know him’
- (8) *Ø Hǎo lěng a!*  
 Ø good cold EXCL  
 ‘It’s SO cold!’

Subjects and objects can be dropped anytime, as long as their referents are known to the hearer (i.e. hearer-old/discourse-old information), inferable, or recoverable from the context. However, Chinese is a topic-prominent language, which means that sentences are likely to begin with a topic that can coincide with the grammatical subject and can be expressed by a noun phrase or a personal pronoun. Unlike in Italian, arguments in Chinese can be overtly realized even if they are not topicalized, focused, or emphasized, and there are neither strict rules nor well-defined syntactic/pragmatic constraints that restrict or forbid the use of overt pronouns<sup>5</sup>, albeit with the exception of expletives which must be null (cf. (7)). Example 9, below, presents two sentences differing only with respect to the use of the subject.

- (9) a. *Zuotian Ø kan le liang ben shu.*  
 Yesterday Ø read PFV two CL book  
 b. *Zuotian wo kan le liang ben shu.*  
 Yesterday I read PFV two CL book  
 ‘Yesterday I read two books.’

If, based on the context, we can establish that the null subject in (9a) refers to the speaker (the most natural interpretation), and if the overt subject in (9b) is not stressed, then the two sentences have the same exact meaning. In Italian, whenever a subject pronoun is realized overtly, the utterance is intended as marked (cf. (4)). The different pragmatic use and degree of tolerance of overt subjects in the two languages is mirrored by their frequency of production. The

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<sup>5</sup> The usual “rule-of-thumb” is to omit identical subject pronouns in close proximity.

proportional usage of null to overt subjects is about 50/50 in Mandarin Chinese and 70/30 in (standard) Italian (Valian, 1991, Wang et al., 1992).

The acquisition of null arguments in L1 and L2 has been extensively studied by scholars. However, not many studies have looked into the acquisition of null arguments in a pro-drop L2/L3 by NSs of a topic-drop language. The next section provides a review of the relevant literature on both native and non-native acquisition of null arguments.

### **3. Acquisition of null arguments**

#### **3.1 Native acquisition of null arguments**

Guasti (2002, 2016) provides an extensive overview of the positions taken by scholars since the mid-1980 with respect to the issue of acquisition of null arguments in L1. In order to explain the subject omission observed in child-English, researchers initially advanced parametric accounts, suggesting that children acquiring L1 start off with a default value of a given parameter which, thanks to input, will eventually reset if not corresponding to the target. Hyams (1986) first hypothesized a pro-drop account, arguing that children have a default positive value for the pro-drop parameter, i.e. in Universal Grammar (UG) null subjects are the default. However, due to discrepancies in the distribution of null subjects in child-English and pro-drop languages, Hyams (1991) revised her account, suggesting that children's non-target-like use of null subjects is the reflex of the positive setting of the topic-drop parameter. Despite the revision, this approach was still problematic because, if in UG topic-drop is the default, then child-English should also systematically display null objects, which instead were produced at a much lower rate than null subjects (Wang et al., 1992).

Against parametric approaches, Yang (2002, 2018) argues that attempts to explain the null-argument stage with a parameter missetting were ineffective because, in child-English, the use and

distribution of null arguments are not exactly the same as in pro-drop or topic-drop languages, in which children reach adult-like command of argument use very early (Valian, 1991, Wang et al., 1992). In Yang's Variational Model (ibid.), the learning process is not viewed as an abrupt switch from one grammar to another but rather as a gradual change determined by the probabilistic distribution of input data. The non-target-like omission of subjects (and occasionally objects) in child-English could be best accounted for by conceding that null arguments are relatively "easy" to acquire. Supposedly, children tend to rely on less complex (unmarked) systems available in UG (e.g. topic-drop) until adequate amount and type of language-specific data lead them to suppress the non-target grammar.

### 3.2 Non-native acquisition of null arguments

The hypothesis based on the swiftness of acquisition of an unmarked as opposed to a marked system (i.e. null vs. overt arguments) could also explain the findings of several L2 studies (Phinney, 1987, Kanno, 1998, Pérez-Leroux & Glass, 1999, Rothman & Iverson, 2007, Rothman & Cabrelli-Amaro, 2010, Judy, 2011). All these studies reported that English NSs, early on, show near-native command of null arguments in different L2s, whereas NSs of pro-drop/topic-drop languages, even at higher levels of L2 English proficiency, recurrently omit obligatory subjects, and especially expletives.

The idea that *pro* is referentially simpler than its overt counterpart led researchers to pay more attention to the acquisition of overt subjects, and thus to partially neglect the acquisition of the complex pragmatic properties regulating the use of *pro*, as pointed out by Clements & Domínguez (2017). Several studies (Polio, 1995, Pérez-Leroux & Glass, 1999, Montrul & Rodríguez-Louro, 2006, Domínguez, 2013) observed that even null argument acquisition can be

challenging and found advanced learners overproduce/overaccept null subjects, whereas beginners overproduce overt subjects.

The bulk of the literature on non-native acquisition of null arguments has focused on pro-drop L1s and overt-subject L2s, or vice versa, whereas studies involving NSs of topic-drop languages are far less common. Among these, three in particular are noteworthy: Polio (1995), Liceras & Díaz (1999), and Kong (2015).

Polio (1995) tested NSs of Japanese and English (respectively a topic-drop and an overt-subject language) on argument production in L2 Chinese. She found that L2ers did not use null arguments as often as NSs and their use increased with proficiency. Following her account, overt arguments are overproduced by learners in order to achieve more clarity and to “take time” while formulating a sentence<sup>6</sup>. In addition, this overuse might also be induced by classroom input, which does not always mirror the language employed by NSs in natural conversation. Interestingly, no significant difference was observed between the two learner groups, although with respect to the use of null arguments, Japanese and Chinese (both topic-drop) pattern very similarly. Perhaps other critical differences between these two languages, e.g. case marking and word order, might have prevented Japanese NSs from recognizing the similarities shared by L1 and L2 with respect to null argument distribution.

A second study which merits attention is Liceras & Díaz (1999). They observed the production of null subjects in Spanish by NSs of several topic-drop and overt-subject languages, including Chinese, Japanese, English, and French. Despite the diverse range of L1s investigated, they did not find significant between-group differences that could allow for the postulation of a

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<sup>6</sup> “The first possible reason for such an overuse of pronouns is that the speakers seem to use pronouns to pause while thinking about the rest of the sentence. [...] Chen (1986) found that pausing could also account some NS uses of pronouns.” (Polio, 1995:370).

possible facilitative role played by a topic-drop language in the acquisition of null subjects in a pro-drop language. In fact, Japanese NSs produced the highest number of overt subjects. This could represent a meaningful piece of evidence supporting the hypothesis that, despite superficial similarities shared by pro-drop and topic-drop languages, the types of empty categories available are intrinsically different, such that null topics do not easily remap onto null subjects. However, these findings should be interpreted cautiously because production, as a testing method, has many uncontrollable variables and, even among the controls, the production of null subjects was quantitatively very diverse. Moreover, having only three participants per group could not allow for any reliable generalization.

The third study of direct relevance to the current project is Kong (2015), which is quite unique study in that it deals with L3 acquisition and takes into consideration an unusual pool of languages: L1 Chinese (topic-drop), L2 English (overt-subject), L3 Spanish (pro-drop), and L3 French (overt-subject). Using a grammaticality judgment task, Kong tested Chinese NSs (English L2ers) at the initial stage of L3 French/Spanish acquisition on null arguments in both matrix and embedded clauses. The L3ers performed in a native-like fashion with respect to matrix subjects, i.e. French L3ers rejected null subjects and Spanish L3ers accepted them, but they all failed to reject null objects across the board. Furthermore, French L3ers overaccepted non-target null subjects in embedded clauses.

Considering the Spanish L3ers' performance, Kong hypothesized that null subjects may have been acquired by the learners as they showed 100% accuracy in their performance. This could be explained by the relative ease of acquisition of null subjects and/or with transfer from L1 Chinese, which allows null arguments. This second possibility would also explain the acceptance of null objects (grammatical in L1, but not in L2 and L3). However, Kong did not test Spanish

L3ers on ungrammatical overt subjects, so it is impossible to establish if these learners, along with mastering the use of null subjects, also acquired the constraints on the use of overt subjects. The present study aims to fill this gap.

Building on evidence from a previous study (Kong, 2005), Kong explained the French L3ers' success in recognizing the necessity of matrix overt subjects at a native-like rate by hypothesizing the existence of an obligatory subject/topic ILG. Learners, supposedly, would have developed it while acquiring L2 English and subsequently transferred it to L3 French. In such an ILG, Chinese NSs would interpret matrix overt subjects as topics while transferring a mechanism typical of their L1, namely the topic-chain<sup>7</sup>, to bind other arguments in the sentence, thus allowing for null objects and null embedded subjects to be dropped.

Slabakova (2016) refers to Kong's (2015) findings as representative of a type of cross-linguistic transfer which cannot be explained by models based on typological similarity, wholesale transfer, or facilitative transfer. Models of L3 acquisition are discussed in detail in the next section.

### **3.3 Models of L3 acquisition**

A good portion of the research on L3 acquisition has pointed out the crucial role played by typological proximity in cross-linguistic transfer. Initially studies were mainly concerned with the acquisition of the lexicon, and eventually the idea of typological proximity was extended to morphosyntax. Leung (1998) advanced the Interlanguage Transfer Hypothesis, which elaborates on the concept of psychotypology<sup>8</sup> and appeals to the Full Transfer Full Access hypothesis

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<sup>7</sup> The topic-chain is the continuity of a topic across consecutive clauses in discourse. Since in the test items matrix overt subjects occupied the left-periphery topic position, Chinese NSs might have interpreted them as topics, thereby ensuring the identification of null objects and embedded null subjects.

<sup>8</sup> Psychotypology refers to the assumed typological distance between two of the available languages, as perceived by the learner. It is usually related to the learners' understanding of structural similarities and differences between the two compared languages. Psychotypology generally comes from the learners' own metalinguistic awareness when they discover that certain structures of the target language are similar to the corresponding structures of one of the previously acquired languages.

(Schwartz & Sprouse, 1996), suggesting that full transfer occurs at the initial stage of L3 acquisition from the (psycho)typologically closest language. The L3 initial state is therefore seen as the steady state of a previously acquired language perceived as the typologically closest to the L3. Recently, the Interlanguage Transfer Hypothesis has been developed into more refined typological proximity models. The Typological Primacy Model (TPM, Rothman 2011) suggests that early on in L3 acquisition, the Language Acquisition Device selects either L1 or L2 as the basis for the initial grammatical state. The choice, made once and for all, is based on which of the two available languages is perceived as typologically more similar to the L3 and the initial transfer happens wholesale. Rothman (2011) discusses the mechanisms that allow the parser to evaluate typological/structural proximity and argues that the source of transfer is chosen according to similarity in (hierarchically) lexicon, phonology, morphology, and surface syntactic structures. Once the parser has detected the language that seems typologically closer to the L3, it transfers the complete grammar of this language to the L3, irrespective of the “cost” of such operation, i.e. it might not be the most effective or advantageous choice. The TPM focuses on the initial stages of L3 acquisition when learners’ knowledge and grammar are still rudimentary, but the parser already has some means to make a decision.

The most recent models discussing the influence that previously learned languages might exert on the acquisition of an L3 are the Scalpel Model (Slabakova, 2016) and the Linguistic Proximity Model (LPM, Westergaard et al., 2016). These two models share the same fundamental views and were formulated in response to the limitations of the Cumulative Enhancement Model (Flynn et al., 2004), i.e. lack of appreciation of non-facilitative transfer, and of the TPM, i.e. failure

to account for transfer from the typologically more distant language<sup>9</sup>. The LPM maintains that the decisive factor triggering the transfer is the similarity of abstract linguistic properties, and not the general typological proximity or the order of acquisition. The Scalpel Model similarly recognizes the critical role played by linguistic similarities, but it also emphasizes the importance of experiential and input factors. Both models allow for facilitative as well as non-facilitative transfer, and maintain that all previously acquired languages are available throughout the L3 acquisition process and concur in influencing it. Furthermore, both models conceive of transfer as based on structural similarities between the L3 and one (or both) of the previously acquired languages with respect to particular properties. L3 acquisition therefore involves incremental property-by-property learning and not the wholesale transfer of one of the previously acquired grammars, based on the overall typological proximity, as suggested by the TPM.

#### **4. The study**

##### **4.1 Research questions and hypotheses**

The present study investigates the acquisition of null subjects by Chinese NSs, with different proficiency levels in L2 English, learning Italian as an L3. The aim of this study is to find out if a topic-drop L1 (Chinese) plays a facilitative role in the acquisition of a pro-drop L3 (Italian) prevailing over the possible transfer from an overt-subject L2 (English), perceived as typologically more similar to the L3.

The research questions guiding the present study are:

RQ1. Will learners at initial stages of L3 Italian acquisition show knowledge of null subjects?

RQ2. Will L2 English proficiency influence acceptance of overt subjects in L3 Italian?

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<sup>9</sup> Some exemplar studies attesting transfer from the typologically further language are Hermas (2015), who found L1 Arabic as the source of transfer in the acquisition of L3 English despite the availability of L2 French; and Jin (2009), who observed transfer from L1 Chinese on L3 Norwegian, despite the availability of L2 English.

Relative to RQ1, the prediction is that the availability of null arguments (i.e. dropped topics) in Chinese will likely exert a facilitative influence in the acquisition of Italian null subjects, despite the different licensing strategies of the two types of empty categories. This prediction is also supported by Kong's (2015) findings relative to the Spanish L3 group.

As for RQ2, the prediction is that if the level of English proficiency is high enough, transfer triggered by the perceived typological proximity between L2 and L3 might occur and it will show in the overacceptance of overt subjects.

With respect to the L3 acquisition models discussed in section 3.3, if the TPM proves to be right, i.e. wholesale transfer from the typologically more similar language will occur, then, assuming that English is perceived as typologically closer to Italian (both being Indo-European languages), we should see a high acceptance of overt subjects, a low acceptance or a total rejection of null subjects, and a high acceptance of overt expletives, at least in the performance of those participants who possess a relatively high proficiency level.

On the other hand, if we follow the Scalpel model and LPM, a property-by-property transfer based on similarity of abstract linguistic properties will occur, therefore the relevant property or properties should be “carved out” from L1 Chinese (since, as Italian, it allows null arguments of some sort). If this happens, we should observe a high acceptance of null subjects, a relatively high acceptance of overt subjects, and a total rejection of overt expletives<sup>10</sup>.

## 4.2 Participants

Fifty-four Chinese NSs learners<sup>11</sup> of L3 Italian were recruited from an intensive language program in Italy. This program, called Marco Polo-Turandot, is the product of an agreement

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<sup>10</sup> In the unlikely, yet still possible, case that Chinese is perceived as typologically more similar to Italian, we would observe a pattern similar to that predicted by the Scalpel model/LPM. Testing additional structures, e.g. null objects (allowed in Chinese, but not in Italian or English), could help us to establish which model proves in fact more accurate.

<sup>11</sup> Nine participants were excluded during the analysis (see Section 5, p.18).

between the Italian and Chinese governments stipulated in 2005. It was designed to provide Chinese students with the linguistic knowledge necessary to enroll in a BA or MA program at an Italian university. The Marco Polo-Turandot courses from which participants for the present study were recruited were held in the two northern Italian cities of Pavia and Milan, and had comparable arrangements. They both offered 25 hours of Italian language per week, taught by qualified Italian native instructors who do not know Chinese and exclusively used Italian in the classroom. The textbooks<sup>12</sup> adopted by the two courses was the same. All the recruited learners participated in the experiment during their 8<sup>th</sup> week of class and shared a similar linguistic background: all of them had very limited exposure to Italian and no formal Italian instruction prior to the beginning of the course, and none of them had been to Italy before. They all tested into the lowest level of the language program, i.e. A1 of the CEFR<sup>13</sup>, and at the time of the experiment they had received between 175 and 180 hours of contact instruction. The participants' answers to a questionnaire investigating intensity of interaction (Bardovi-Harlig & Bastos, 2011) revealed that all of them had only Chinese roommates, spoke Italian outside of class about two hours per day, used mainly English to communicate with other international students, and watched Italian TV only occasionally.

As for L2 English, in China it is part of the standard curriculum and is taught from 3<sup>rd</sup> through 12<sup>th</sup> grade, usually by Chinese teachers, who typically follow a translation-based method in which rote-learning is strongly encouraged. Because using the number of years spent studying English did not represent a reliable method to determine learners' proficiency, an English cloze-test was administered. This cloze-test, already employed by Kong (2005, 2015), consisted of an

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<sup>12</sup> Costamagna et al. (2009), *Io e l'Italiano*, Milan: Mondadori; and Bettinelli et al. (2011), *Buona Idea – Livello elementare*, Turin: Pearson.

<sup>13</sup> The Common European Framework of Reference for Languages (CEFR) is an international standard for describing language ability on a six-point scale, from A1 for beginners, up to C2 for near native users.

adapted portion of the Oxford Placement Test (Allan, 1992); it specifically targeted learners' knowledge of the use of subject pronouns in English and featured 35 blanks that had to be populated with subject pronouns. The participants' scores ranged from 0 to 33 (out of a possible 35). Since natural breaks in the distribution of scores were found, it seemed reasonable to follow them in order to delineate the proficiency groups. Also, the score-range criterion adopted by Kong (2005) was followed as closely as possible, although his subjects possessed an overall higher proficiency. Nonetheless, this score-range criterion was used to establish four relevant proficiency levels: the advanced group (L2ADV, score range: 26-33) included nine subjects; the intermediate group (L2INT, scores range: 20-23) included ten subjects; the elementary group (L2ELE, score range: 12-18) included twelve subjects; the group with the lowest level of proficiency, defined as pre-elementary (L2PRE, score range: 0-9), contained fourteen subjects.

Lastly, fifteen Italian monolinguals born, raised and currently residing in Tuscany (Italy) were recruited. Their performance represented the baseline used to validate the test items and used as a reference to compare the learners' performance. Hereinafter, they will be referred to as controls.

Information about the participants and their performance on the English cloze-test is reported in Table 1.

**Table 1.** Participants involved in the study

	<i>n</i>	Females	Males	Age		Cloze-test Score		
				Mean	SD	Range	Mean	SD
L2 Advanced(L2ADV)	9	8	1	20;04	2.18	26-33	29.11	2.37
L2 Intermediate(L2INT)	10	6	4	22;11	2.42	20-23	21.70	1.25
L2 Elementary(L2ELE)	12	9	3	21;03	2.90	12-18	14.92	1.98
L2 Pre-elementary(L2PRE)	14	7	7	21;06	2.26	0-9	5.64	3.08
Controls(CTRL)	15	9	6	38;03	13.52			

### 4.3 Procedure and materials

Data were collected by means of a paper-and-pencil acceptability judgement task. This experimental design was utilized in order to test quickly many students within a controlled task setting, for which a production task would likely have been too challenging given the students' limited L3 skills. Participants were asked to rate the acceptability of each sentence by using a Likert scale from 1 to 4, where 1 equals "absolutely unnatural/unacceptable" and 4 "absolutely natural/acceptable". The range of four-response options, instead of a binary scale, was provided to prompt the selection of a more informative response in the case where a participant felt that an item was (un)acceptable but hesitated to choose one of the two "extreme" ratings. In an effort to determine why an item may have been rated as unnatural/unacceptable, participants were asked to signal the problematic element/spot in each of such items; in this part of the task, they were left free to do so however they preferred, as long as their marking was clear and informative.

The task instructions were provided in Chinese and the examples in both Chinese and Italian. The test items, presented in Italian only, were randomized. The participants performed the task in their classrooms and had 30 minutes to complete it. Afterward, they completed the English cloze-test described in the previous section, and a language-background questionnaire. This consisted of 10 questions designed to investigate not only each learner's language background but also their level of intensity of interaction in Italian (Bardovi-Harlig & Bastos, 2011). The whole procedure lasted about one hour. The participants were not remunerated but received extra credit that was factored into their course grades.

The controls took the test in their homes; they received instructions and examples in Italian only; the test items had been randomized just like for the learner groups. They were asked to

complete a brief questionnaire investigating age, sex, and level of education. The whole procedure lasted 15 minutes.

#### 4.3.1 Acceptability Judgment Task (AJT)

The AJT test battery included 32 experimental items equally distributed among four categories: matrix subjects, embedded subjects, expletives, and subjects in *wh*-questions. Each category included eight items: four featuring a null subject in a syntactic/pragmatic context requiring a null subject and four an overt subject in a syntactic/pragmatic context that does not require/allow it. Table 2 offers examples of both kinds of tokens for each category. The test battery also included 14 fillers, six grammatical and eight ungrammatical with respect to word order.

**Table 2.** Types and tokens included in the AJT test battery

Type	Example	<i>n</i> tokens
<b>Matrix Null Subject</b>	<i>Simone è pigro e di solito dorme tutto il giorno.</i> 'Simone is lazy and usually <i>pro</i> sleep.3.SG all day'	4
<b>*Matrix Overt Subject</b>	<i>*Lei è dottoressa e lei aiuta i malati.</i> 'She is a doctor and she helps the sick.'	4
<b>Embedded Null Subject</b>	<i>I bambini dicono che sei cattivo.</i> 'The kids say that <i>pro</i> are.2.SG mean'	4
<b>*Embedded Overt Subject</b>	<i>*Loro dicono che loro sono bravi.</i> 'They say that they are good.'	4
<b>Null Expletive</b>	<i>Piove molto qui.</i> ' <i>pro</i> rain.3.SG a lot here.'	4
<b>*Overt Expletive</b>	<i>*Si nevicava spesso in montagna.</i> 'It snows often in the mountains.'	4
<b><i>wh</i>-question w/Null subject</b>	<i>Quanto sei alto?</i> 'How <i>pro</i> are.2.SG tall?'	4
<b>*<i>wh</i>-question w/Overt subject</b>	<i>*Dove voi andate in vacanza?</i> 'Where do you go on vacation?'	4

*Note:* The starred types include only ungrammatical/pragmatically odd tokens.

The tokens in the categories featuring matrix and embedded subjects were all biclausal declaratives. They had to be biclausal in order to provide a context and a reference which would make it plausible/natural for subjects to be dropped (in well-formed tokens) and implausible/unnatural odd for subjects to be overtly expressed (in pragmatically odd tokens). Matrix subjects were either null or overt subjects in the second of two conjoined matrix clauses, whereas embedded

subjects were either null or overt subjects in a subordinate clause. All the tokens featuring expletives, *wh*-questions, and the fillers were monoclausal. Since Italian does not have expletives, the impersonal pronoun *si* was used as a “replacement” in tokens featuring an overt expletive<sup>14</sup>. As for *wh*-questions, the *wh*-word always occupied the sentence-initial position, whether the subject was overt or null, and it was always an adjunct, as a subject cannot be dropped when it is a *wh*-word.

All the test items were created in accordance with the grammatical structures and lexicon that had been introduced by the textbook and covered in class by the time of the experiment.

## 5. Data analysis and results

Those participants ( $n=9$ ) who left blank the English assessment and/or who performed the AJT without signaling an error in any of the sentences rated as ungrammatical/unnatural were excluded from the analysis<sup>15</sup>. A total of 45 of Italian L3ers were included in the analysis. Task-response ratings of 3 and 4, on one hand, and 1 and 2, on the other, were collapsed and considered as acceptances and rejections, respectively. Acceptances were coded as 1 and rejections as 0. For the learner groups, acceptances with corrections and rejections without corrections were not taken into account as considered non-informative; the controls performed the task as expected and none of their answers was discarded. Raw count data for each item type is given in Tables 3 and 4 below.

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<sup>14</sup> The pronoun *si* is used in certain impersonal constructions such as *Si vive bene in Italia?* ‘Do **people** live well in Italy?’ or *Si pensa che John sia colpevole.* ‘**People** think John is guilty’.

<sup>15</sup> This decision was made as such responses were uninformative in that, since participants did not correct the flawed portion, it could not be ascertained whether the reason they rejected the sentence was in fact the presence of an ungrammatical or pragmatically odd overt subject or something else.

**Table 3.** Raw count data (percentage): Ratings 1–4

CTRL=Controls

L2ELE=Chinese NSs w/elementary L2 proficiency

L2ADV=Chinese NSs w/advanced L2 proficiency

L2PRE=Chinese NSs w/pre-elementary L2 proficiency

L2INT=Chinese NSs w/intermediate L2 proficiency

		RATING							
Group	Type	1		2		3		4	
<b>CTRL</b>	Matrix Null	1	(1.7%)	0	(0.0%)	3	(5.0%)	56	(93.3%)
	Matrix Overt	27	(45.0%)	27	(45.0%)	4	(6.7%)	2	(3.3%)
	Embedded Null	1	(1.7%)	1	(1.7%)	1	(1.7%)	57	(95.0%)
	Embedded Overt	41	(68.3%)	14	(23.3%)	2	(3.3%)	3	(5.0%)
	Null Expletive	0	(0.0%)	1	(1.7%)	4	(6.7%)	55	(91.7%)
	Overt Expletive	56	(93.3%)	3	(5.0%)	0	(0.0%)	1	(1.7%)
	<i>Wh</i> -question w/null subject	0	(0.0%)	1	(1.7%)	0	(0.0%)	59	(98.3%)
	<i>Wh</i> -question w/overt subject	48	(80.0%)	10	(16.7%)	0	(0.0%)	2	(3.3%)
<b>L2ADV</b>	Matrix Null	3	(10.7%)	2	(7.1%)	3	(10.7%)	20	(71.4%)
	Matrix Overt	2	(6.7%)	0	(0.0%)	6	(20.0%)	22	(73.3%)
	Embedded Null	10	(29.4%)	1	(2.9%)	4	(11.8%)	19	(55.9%)
	Embedded Overt	2	(6.5%)	3	(9.6%)	3	(9.6%)	23	(74.2%)
	Null Expletive	6	(21.4%)	2	(7.1%)	7	(25.0%)	13	(46.4%)
	Overt Expletive	2	(6.5%)	1	(3.2%)	9	(29.0%)	19	(61.3%)
	<i>Wh</i> -question w/null subject	5	(13.9%)	0	(0.0%)	2	(5.6%)	29	(80.6%)
	<i>Wh</i> -question w/overt subject	2	(5.6%)	0	(0.0%)	4	(11.1%)	30	(83.3%)
<b>L2INT</b>	Matrix Null	6	(16.2%)	2	(5.4%)	6	(16.2%)	23	(62.2%)
	Matrix Overt	2	(5.6%)	3	(8.3%)	7	(19.4%)	24	(66.7%)
	Embedded Null	11	(27.5%)	3	(7.5%)	8	(20.0%)	18	(45.0%)
	Embedded Overt	0	(0.0%)	3	(8.1%)	10	(27.0%)	24	(64.9%)
	Null Expletive	8	(23.5%)	3	(8.8%)	11	(32.4%)	12	(35.3%)
	Overt Expletive	4	(11.1%)	3	(8.3%)	9	(25.0%)	20	(55.6%)
	<i>Wh</i> -question w/null subject	5	(13.2%)	1	(2.6%)	4	(10.5%)	28	(73.7%)
	<i>Wh</i> -question w/overt subject	1	(2.5%)	2	(5.0%)	6	(15.0%)	31	(77.5%)
<b>L2ELE</b>	Matrix Null	4	(9.1%)	4	(9.1%)	7	(15.9%)	29	(65.9%)
	Matrix Overt	7	(17.9%)	2	(5.1%)	8	(20.5%)	22	(56.4%)
	Embedded Null	6	(13.3%)	3	(6.7%)	14	(31.1%)	22	(48.9%)
	Embedded Overt	12	(30.8%)	2	(5.1%)	5	(12.8%)	20	(51.3%)
	Null Expletive	7	(18.4%)	5	(13.2%)	7	(18.4%)	19	(50.0%)
	Overt Expletive	4	(10.0%)	3	(7.5%)	10	(25.0%)	23	(57.5%)
	<i>Wh</i> -question w/null subject	7	(15.6%)	3	(6.7%)	2	(4.4%)	33	(73.3%)
	<i>Wh</i> -question w/overt subject	8	(18.6%)	5	(11.6%)	6	(14.0%)	24	(55.8%)
<b>L2PRE</b>	Matrix Null	4	(8.3%)	7	(14.6%)	11	(22.9%)	26	(54.2%)
	Matrix Overt	8	(19.0%)	11	(26.2%)	6	(14.3%)	17	(40.5%)
	Embedded Null	5	(10.0%)	5	(10.0%)	12	(24.0%)	28	(56.0%)
	Embedded Overt	12	(30.7%)	7	(17.9%)	6	(15.3%)	14	(35.9%)
	Null Expletive	15	(28.8%)	7	(13.5%)	9	(17.3%)	21	(40.4%)
	Overt Expletive	3	(7.1%)	3	(7.1%)	15	(35.7%)	21	(50.0%)
	<i>Wh</i> -question w/null subject	9	(17.6%)	3	(5.9%)	9	(17.6%)	30	(58.8%)
	<i>Wh</i> -question w/overt subject	11	(20.8%)	8	(15.1%)	3	(5.7%)	31	(58.5%)

**Table 4.** Raw count data (percentage): Acceptance

CTRL=Controls

L2ELE=Chinese NSs w/elementary L2 proficiency

L2ADV=Chinese NSs w/advanced L2 proficiency

L2PRE=Chinese NSs w/pre-elementary L2 proficiency

L2INT=Chinese NSs w/intermediate L2 proficiency

<b>Group</b>	<b>Type</b>	<b>Acceptance</b>		<b>Rejection</b>	
<b>CTRL</b>	Matrix Null	59	(98.3%)	1	(1.7%)
	Matrix Overt	6	(10.0%)	54	(90.0%)
	Embedded Null	58	(96.7%)	2	(3.3%)
	Embedded Overt	5	(8.3%)	55	(91.7%)
	Null Expletive	59	(98.3%)	1	(1.7%)
	Overt Expletive	1	(1.7%)	59	(98.3%)
	Wh-question w/Null Subject	59	(98.3%)	1	(1.7%)
	Wh-question w/Overt Subject	2	(3.3%)	58	(96.7%)
<b>L2ADV</b>	Matrix Null	23	(82.1%)	5	(17.9%)
	Matrix Overt	28	(93.3%)	2	(6.7%)
	Embedded Null	23	(67.6%)	11	(32.4%)
	Embedded Overt	26	(83.9%)	5	(16.1%)
	Null Expletive	20	(71.4%)	8	(28.6%)
	Overt Expletive	28	(90.3%)	3	(9.7%)
	Wh-question w/Null Subject	31	(86.1%)	5	(13.9%)
	Wh-question w/Overt Subject	34	(94.4%)	2	(5.6%)
<b>L2INT</b>	Matrix Null	29	(78.4%)	8	(21.6%)
	Matrix Overt	31	(86.1%)	5	(13.9%)
	Embedded Null	26	(65.0%)	14	(35.0%)
	Embedded Overt	34	(91.9%)	3	(8.1%)
	Null Expletive	23	(67.6%)	11	(32.4%)
	Overt Expletive	29	(80.6%)	7	(19.4%)
	Wh-question w/Null Subject	32	(84.2%)	6	(15.8%)
	Wh-question w/Overt Subject	37	(92.5%)	3	(7.5%)
<b>L2ELE</b>	Matrix Null	36	(81.8%)	8	(18.2%)
	Matrix Overt	30	(76.9%)	9	(23.1%)
	Embedded Null	36	(80.0%)	9	(20.0%)
	Embedded Overt	25	(64.1%)	14	(35.9%)
	Null Expletive	26	(68.4%)	12	(31.6%)
	Overt Expletive	33	(82.5%)	7	(17.5%)
	Wh-question w/Null Subject	35	(77.8%)	10	(22.2%)
	Wh-question w/Overt Subject	30	(69.8%)	13	(30.2%)
<b>L2PRE</b>	Matrix Null	37	(77.1%)	11	(22.9%)
	Matrix Overt	23	(54.8%)	19	(45.2%)
	Embedded Null	40	(80.0%)	10	(20.0%)
	Embedded Overt	20	(51.3%)	19	(48.7%)
	Null Expletive	30	(57.7%)	22	(42.3%)
	Overt Expletive	36	(85.7%)	6	(14.3%)
	Wh-question w/Null Subject	39	(76.5%)	12	(23.5%)
	Wh-question w/Overt Subject	34	(64.2%)	19	(35.8%)

Separate analyses were run for different clause types, namely biclausal declaratives, *wh*-sentences, and sentences containing expletives.

### 5.1 Biclausal Declaratives

The data were entered into a logistic mixed model in SPSS. Model fitting began by including independent variables of Group, Null (i.e. whether a subject pronoun was null or overt) and Matrix (whether the null or overt subject was in the matrix or embedded clause of a biclausal declarative), all their higher order interactions, and a dependent variable of Acceptance. Random intercepts were included for Participants and Item<sup>16</sup>, and the Satterthwaite approximation<sup>17</sup> was used to calculate *F* statistics. For pairwise comparisons, *p* values were adjusted using Sequential Sidak correction. The model was progressively backwards-fit such that non-significant fixed effects and interactions were removed. During this process, the term Matrix was removed; the final model contained the variables of Null, Group, and their interaction.

There was a significant main effect of Null ( $F(1,18) = 7.780, p = .012$ ) and a significant two-way interaction of Group\*Null ( $F(4,218) = 18.320, p < .0001$ ). With respect to the acceptance of both null and overt subjects all the learner groups differed significantly from the controls as shown in Table 5.

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<sup>16</sup> As per Barr et al. (2013), random-effects structures were kept as maximal as possible in all models run. This applies also to the other two analyses.

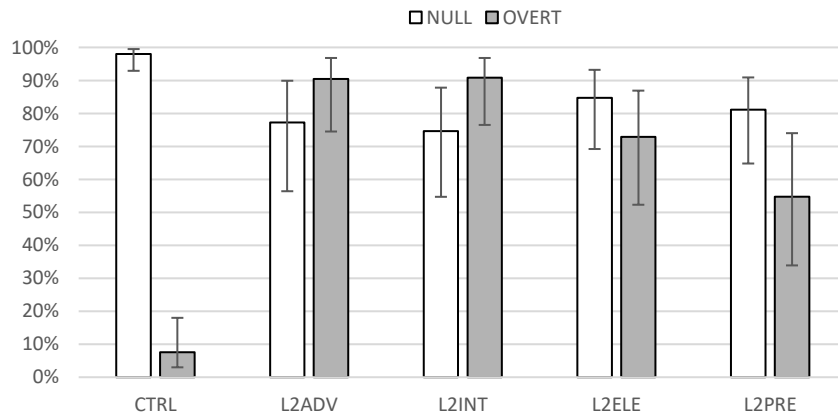
<sup>17</sup> The Satterthwaite approximation is a formula used in a two-sample t-test to estimate effective degrees of freedom for a probability distribution formed from several independent normal distributions where only estimates of the variance are known.

**Table 5.** Pairwise contrasts Group\*Null

CTRL=Controls  
 L2ADV=Chinese NSs w/advanced L2 proficiency  
 L2INT=Chinese NSs w/intermediate L2 proficiency  
 L2ELE=Chinese NSs w/elementary L2 proficiency  
 L2PRE=Chinese NSs w/pre-elementary L2 proficiency

	Contrast	Adjusted Estimate (log odds)	Adjusted Significance	95% Confidence Interval	
				Lower	Upper
<b>Null</b>	CTRL-L2ADV	-4.732	3.221E-11	-6.078	-3.385
	CTRL-L2INT	-4.787	4.252E-12	-6.086	-3.489
	CTRL-L2ELE	-3.483	3.987E-9	-4.595	-2.371
	CTRL-L2ELE	-2.682	1.714E-6	-3.752	-1.612
<b>Overt</b>	CTRL-L2ADV	2.691	.000	1.193	4.189
	CTRL-L2INT	2.832	.000	1.381	4.284
	CTRL-L2ELE	2.201	.003	.745	3.657
	CTRL-L2ELE	2.457	.001	1.034	3.880

Model estimates of probability of acceptance for null and overt subjects in biclausal declaratives and 95% confidence intervals are given in Figure 1 below.

**Figure 1.** Model estimates of probability of acceptance of null and overt subjects in biclausal declaratives and 95% confidence intervals.

CTRL=Controls  
 L2ADV=Chinese NSs w/advanced L2 proficiency  
 L2INT=Chinese NSs w/intermediate L2 proficiency  
 L2ELE=Chinese NSs w/elementary L2 proficiency  
 L2PRE=Chinese NSs w/pre-elementary L2 proficiency

As shown by the graph in figure 1, all groups were likely to accept null subjects at a high rate, and the learner groups were also likely to accept overt subjects (which were strongly disliked by the controls) at a very high rate. In particular the two groups with a higher English proficiency were likely to accept overt subjects at a higher rate than null subjects. Their estimated acceptance

of overt subjects was significantly different not only from that of the controls (see Table 5), but also from that of the two groups with a lower English proficiency: L2ADV vs. L2PRE (odds ratio<sup>18</sup> [OR] = 7.77,  $p = .001$ ); L2INT vs. L2ELE (OR = 3.68,  $p = .038$ ); L2INT vs. L2PRE (OR = 8.2,  $p = .001$ ).

As for the difference between the acceptance of null vs. overt within each group, in biclausal declaratives, null subjects were significantly more likely to be accepted than overt subjects only by the controls (OR = 604.25;  $p < .0001$ ) and by the group with the lowest L2 proficiency (OR = 3.54;  $p = .037$ ). For all the other groups, the difference in the acceptance of null vs. overt subjects was not significant (all  $p$ 's  $> .09$ ).

## 5.2 *wh*-questions

The data for *wh*-questions were entered into a logistic mixed model in SPSS. Model fitting began by including independent variables of Group and Null (i.e. whether a subject pronoun was null or overt), their higher order interaction, and a dependent variable of Acceptance. Random intercepts were included for Participants and Item, and the Satterthwaite approximation was used to calculate  $F$  statistics. For pairwise comparisons,  $p$  values were adjusted using Sequential Sidak correction.

There was a significant main effect of Group ( $F(4,78) = 3.705$ ,  $p = .008$ ) and Null ( $F(1,9) = 5.984$ ,  $p = .038$ ) and a significant two-way interaction of Group\*Null ( $F(4,452) = 9.705$ ,  $p < .0001$ ). With respect to the acceptance of overt subjects, but not of null subjects, all the learner groups differed significantly from the controls as shown in Table 6.

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<sup>18</sup> Odds ratios serve as a measure of effect size in logistic regression. The 7.77 odds ratio here means that the odds of acceptance of overt subjects are 7.77 times greater for the group with the highest L2 proficiency than for the group with the lowest L2 proficiency.

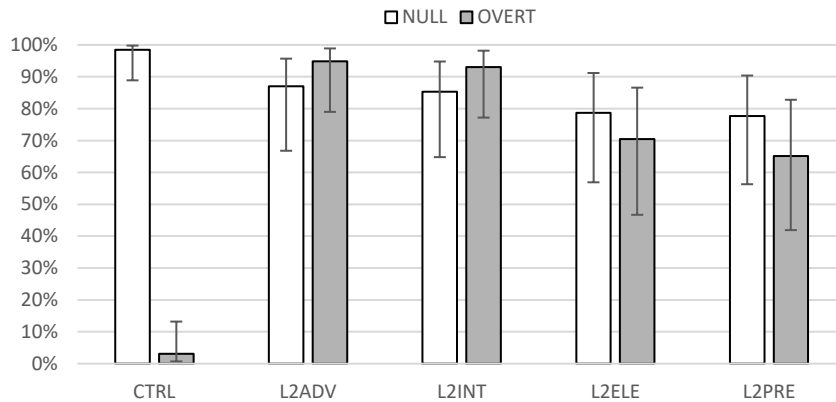
**Table 6.** Pairwise contrasts Group\*Null

CTRL=Controls  
L2ADV=Chinese NSs w/advanced L2 proficiency  
L2INT=Chinese NSs w/intermediate L2 proficiency  
L2ELE=Chinese NSs w/elementary L2 proficiency  
L2PRE=Chinese NSs w/pre-elementary L2 proficiency

	Contrast	Adjusted Estimate (log odds)	Adjusted Significance	95% Confidence Interval	
				Lower	Upper
<b>Overt</b>	CTRL-L2ADV	-6.377	2.947E-8	-9.312	-3.441
	CTRL-L2INT	-6.051	1.046E-8	-8.782	-3.320
	CTRL-L2ELE	-4.317	2.044E-6	-6.577	-2.057
	CTRL-L2ELE	-4.071	4.398E-6	-6.242	-1.901

Model estimates of probability of acceptance for null and overt subjects in monoclausal *wh*-questions and 95% confidence intervals are given in Figure 2.

**Figure 2.** Model estimates of probability of acceptance of null and overt subjects in *wh*-questions and 95% confidence intervals.



CTRL=Controls  
L2ADV=Chinese NSs w/advanced L2 proficiency  
L2INT=Chinese NSs w/intermediate L2 proficiency  
L2ELE=Chinese NSs w/elementary L2 proficiency  
L2PRE=Chinese NSs w/pre-elementary L2 proficiency

In this condition, the pattern is similar to that observed in the previous condition: all learner groups, contrary to the controls, were likely to accept overt subjects at a very high rate and the two groups with a higher English proficiency, again, were likely to accept overt subjects at a higher rate than null subjects. Their estimated acceptance of overt subjects was significantly different not only from that of the controls but also from that of the group with the lowest English proficiency: L2ADV vs. L2PRE (OR = 10.02,  $p = .030$ ) and L2INT vs. L2PRE (OR = 7.23,  $p = .030$ ).

As for the difference between the acceptance of null vs. overt subjects within each group, in *wh*-questions, null subjects were significantly more likely to be accepted than overt subjects only by the controls (OR = 2020.5,  $p < .0001$ ). For all the other groups, the difference in the estimated acceptance of null vs. overt subjects was not significant (all  $p$ 's  $> .30$ ).

### 5.3 Expletives

As was done for the other variables tested, the data for expletives were entered into a logistic mixed model in SPSS. Model fitting began by including independent variables of Group and Null (i.e. whether a subject pronoun was null or overt), their higher order interaction, and a dependent variable of Acceptance. Random intercepts were included for Participants and Item, and the Satterthwaite approximation was used to calculate  $F$  statistics. For pairwise comparisons,  $p$  values were adjusted using Sequential Sidak correction.

Main effects of Group and Null were both not significant, but their interaction was significant: Group\*Null ( $F(4,411) = 10.533$ ,  $p < .0001$ ). With respect to the acceptance of both null and overt subjects, all the learner groups performed significantly differently from the controls as shown in Table 7.

**Table 7.** Pairwise contrasts Group\*Null

CTRL=Controls

L2ADV=Chinese NSs w/ advanced L2 proficiency

L2INT=Chinese NSs w/ intermediate L2 proficiency

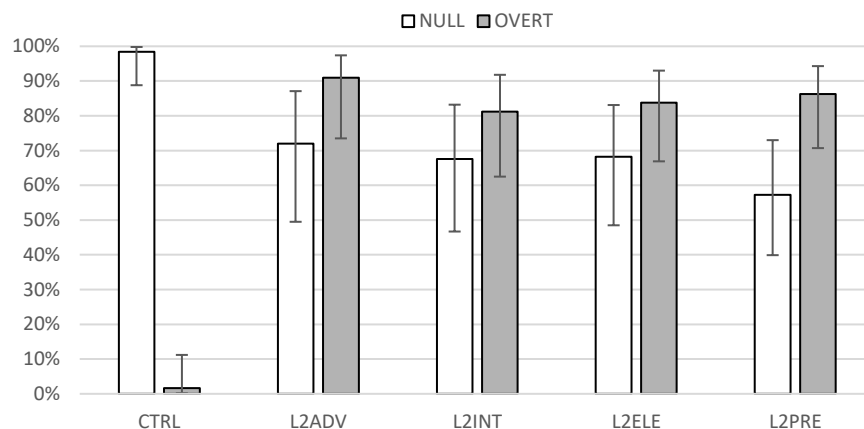
L2ELE=Chinese NSs w/ elementary L2 proficiency

L2PRE=Chinese NSs w/ pre-elementary L2 proficiency

		Contrast Estimate (log odds)	Adjusted Significance	95% Confidence Interval	
				Lower	Upper
<b>Null</b>	CTRL-L2ADV	3.143	.039	.096	6.190
	CTRL-L2INT	3.355	.023	.273	6.437
	CTRL-L2ELE	3.324	.023	.271	6.377
	CTRL-L2ELE	3.795	.005	.764	6.826
<b>Overt</b>	CTRL-L2ADV	-6.403	2.156E-6	-9.819	-2.986
	CTRL-L2INT	-5.553	8.681E-6	-8.595	-2.512
	CTRL-L2ELE	-5.733	4.304E-6	-8.818	-2.647
	CTRL-L2ELE	-5.931	2.248E-6	-9.074	-2.788

Model estimates of probability of acceptance for null and overt expletives in monocausal declaratives and 95% confidence intervals are given in Figure 3 below.

**Figure 3.** Model estimates of probability of acceptance of null and overt expletives and 95% confidence intervals.



CTRL=Controls

L2ELE=Chinese NSs w/elementary L2 proficiency

L2ADV=Chinese NSs w/advanced L2 proficiency

L2PRE=Chinese NSs w/pre-elementary L2 proficiency

L2INT=Chinese NSs w/intermediate L2 proficiency

In this condition, we observe a slightly different pattern, as all the learner groups were more likely to accept overt expletives (ungrammatical in Italian) than null expletives. No significant difference in the acceptance of null or overt expletives was found between the learner groups.

As for the difference between the acceptance of null vs. overt expletives within each group, the controls were significantly more likely to accept null than overt expletives (OR = 3561.72;  $p < .0001$ ). Once again, the group with the lowest L2 proficiency was the only learner group to display a significant difference in the acceptance of null vs. overt expletives, but, interestingly, in this condition, the trend was completely opposite to that of the controls, i.e. overt expletives were significantly more likely to be accepted than null expletives. (OR = 4.71,  $p = .005$ ).

## 6. Discussion

The results of the AJT show that Chinese learners at the initial stage of L3 Italian acquisition have, understandably, not fully acquired the syntactic and pragmatic constraints regulating the distribution of null and overt subjects in the target language. A general observation

about the performance of all four learner groups, irrespective of their L2 proficiency, is that they always accepted overt subjects at a significantly higher rate than the controls, a trend already observed by Polio (1995) and Montrul & Rodríguez-Louro (2006), among others. However, it is noteworthy that, among all the learner groups, in the biclausal declarative condition, the group with the lowest L2 proficiency accepted overt subjects at the lowest rate. The difference between this group's acceptance of null and overt subjects reached significance and followed the same pattern as controls, i.e. null subjects accepted at a significantly higher rate than overt subjects. Conversely, the group with the highest L2 proficiency accepted overt subjects at the highest rate, immediately followed by the intermediate L2 proficiency group. Both groups accepted overt subjects at a higher rate than null subjects, whereas the two groups with a lower English proficiency accepted null subjects at a higher rate than overt ones (targetlike behavior). As for null subjects, although all learner groups' acceptance rates were rather high, they were still significantly different from those of the controls.

In the *wh*-question condition, all learner groups' acceptance rates of null subjects were high and, in this case, not significantly different from the controls; overt subject acceptance was still very high and significantly different from the controls. Again a "two-by-two" trend was observed, with the two groups with a higher L2 proficiency accepting overt subjects at a higher rate than null subjects, and the two groups with a lower L2 doing the opposite. However, in this condition, the difference between the acceptance rates of null and overt subjects was not significant for either group. The data analysis revealed that several learners rated as unacceptable grammatical *wh*-questions featuring null subjects and signaled the *wh*-word as the problematic element; some even corrected the sentence by moving the *wh*-word to the end of it. This behavior, and the general

skepticism in accepting *wh*-questions featuring null subjects, could be explained by the fact that Chinese is a *wh*-in-situ language and *wh*-words do not move at the PF level.

In the third and last condition, expletives, all four learner groups performed less accurately with respect to null subjects and accepted them at a lower rate than overt subjects, which were continuously accepted at a high rate. With respect to the acceptance of both null and overt subjects, the learner groups differed significantly from the controls, but not from each other<sup>19</sup>. Only for one learner group did the difference between the acceptance rates of null and overt subjects reach significance: this was, once again, the group with the lowest L2 proficiency, but this time the trend was opposite to that of the controls, i.e. overt subjects were accepted at a significantly higher rate than null subjects. The overall diminished accuracy in null subject acceptance observed in this condition might have been caused by the fact that, although learners had already encountered several types of verbs requiring null expletives at the time they took the experiment, they might have actually acquired only a select few of them, e.g. weather verbs. Expletives, after all, are not very frequent in the input. It looks like the lack of familiarity with some of the structures employed in the test items misled the learners in the acceptance of overt expletives (ungrammatical in both Italian and Chinese), and, curiously, made them more hesitant in recognizing the grammaticality of null expletives. In particular, the issue was not with weather verbs, e.g. *piove* 'it rains', but with the impersonal verb *bisogna* 'it is necessary', which had already been introduced in the students' classes, but which they had perhaps not practiced and thus did not recognize.

In light of these findings and observations, it is reasonable to advance the conclusion that L2 English might have exerted a certain influence on the acquisition of Italian subjects, considering that in two conditions, a two-by-two trend was detected. The two groups with a higher L2

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<sup>19</sup> Remember that in the other two conditions, L2ADV and L2INT's overt subject acceptance rates differed significantly from L2PRE's acceptance rate.

proficiency performed very similarly and accepted overt subjects at higher rate than null subjects, whereas the two groups with a lower L2 proficiency patterned together and showed the exact opposite behavior. Furthermore, the overt subject acceptance rates of the two groups with a higher L2 proficiency were significantly different from that of the group with the lowest L2 proficiency.

Besides transfer from L2 English, however, there are other factors to consider in order to explain the over-acceptance of overt subjects, the first being classroom input. Typically, learners at such an early stage of L3 acquisition cannot reliably interpret verb endings to recover null subjects. Therefore, teachers, in order to ease comprehension, sometimes produce and stress overt subjects (especially in the form of pronouns) more than they normally would in natural conversation.

Another factor to take into account is textbook input. Even though the textbook adopted by both courses offers a large number of texts reproducing the natural use of language, when it comes to presenting verb conjugations, overt subject pronouns are always included next to the related verb forms. This format is also found in some exercises designed to practice verb conjugations, where overt subject pronouns loom before the blank that is supposed to be populated with the appropriate inflected verb form. It should also be mentioned that Chinese learners tend to heavily rely on their textbook as this is the way they are typically taught in their country, where foreign language teaching still strongly encourages memorization.

However, the fact that, in two conditions, the two groups with a higher L2 proficiency accepted overt subjects at a higher rate than the two groups with a lower L2 proficiency suggests that English may be a contributing factor in the differences in performance. It seems reasonable to exclude the hypothesis that a wholesale transfer from L2 English occurred because if it did, learners would have not accepted null subjects at such a high rate. It would perhaps be more

realistic to concede that both L1 and L2 are implicated in the acquisition of null arguments in L3. While Chinese is likely to ease the acceptance of null subjects, it still takes time for those learners who possess a relatively high L2 proficiency to inhibit the overt-subject grammar they might have developed while learning English. Furthermore, we should not forget that Chinese is more “tolerant” of overt subjects, and this might be a plausible reason to account for the overall relatively high acceptance rate.

Going back to the original research questions, the first asked whether learners at initial stages of L3 Italian acquisition show knowledge of null subjects. Considering that learners were generous in accepting null subjects, we could infer that they were aware of their availability in L3 Italian, although they had not yet mastered all the principles regulating their distribution. Even if we cannot prove that it was Chinese alone that promoted this knowledge, it seems reasonable to hypothesize that the availability of null arguments in the L1 might have encouraged the acceptance of null subjects in the L3. Another contributing factor could have been the relative “ease” of acquisition of null arguments which, as an unmarked system, are believed to be the default in UG (Yang 2002, 2018). In addition, because the learners were living in Italy, they were inevitably exposed to a large amount of naturalistic input, in which null subjects are extremely frequent.

The second research question asked whether L2 English proficiency could influence acceptance of overt subjects in L3 Italian, resulting in participants with a higher L2 proficiency overaccepting non-target overt subjects. As shown by the results, the two groups with a higher level of L2 proficiency, in general, accepted overt subjects at a significantly higher rate than the two groups with a lower L2 proficiency, and this very well might have to do with the influence exerted by English. However, with respect to the predictions made by the different L3 acquisition models considered here, the hypothesis of a wholesale transfer from English, à la TPM, cannot be

supported because the two groups with a higher L2 proficiency, while accepting non-target overt subjects at a very high rate, also readily accepted null subjects. To explain this discrepancy, we may want to suggest that learners with a more ingrained knowledge of English had over time developed an overt-subject ILG which takes time to be inhibited. This presumably does not apply to learners with a lower L2 proficiency, who might have never developed such an ILG and therefore need not block it. Furthermore, L1 grammar could be involved in the acquisition of L3 Italian, acting as a double-edged sword: on one hand, it eases the acceptance of null subjects, and on the other, it does not serve as efficiently in inhibiting the use of overt subjects, which in Chinese are tolerated and used more than in Italian.

Lastly, even the Scalpel Model and the LPM do not seem to fully capture and explain the data: if a property-by-property transfer based on similarity of abstract linguistic properties had occurred, the relevant properties, as previously mentioned, should have been transferred from L1 Chinese and therefore, along with a high acceptance of null subjects and a relatively high acceptance of overt subjects, we should have also observed a total rejection of overt expletives, which we did not find.

## **7. Conclusion**

This study considered the acquisition of null subjects in a pro-drop L3 (Italian) by four groups of NSs of a topic-drop L1 (Chinese) at different proficiency levels of an overt-subject L2 (English). The results of an AJT show that the prediction regarding the facilitative role played by the availability of null arguments (i.e. dropped topics) in L1 Chinese may be realized, as learners accepted null subjects at a high rate. However, other possible factors, such as UG and naturalistic input, must also be considered.

As for the prediction regarding the possible transfer from L2 English for learners possessing a higher L2 proficiency, it was not borne out with respect to the hypothesis of a wholesale transfer. In certain conditions, learners with a higher L2 proficiency accepted overt subjects at a higher rate than learners with the lowest L2 proficiency, but they also widely accepted null subjects. Such differences in performance can be accounted for by recognizing the existence of several factors, e.g. L1 transfer and classroom/textbook input, that together with the influence exerted by the L2 contribute to shaping the acquisition of the L3.

More research is surely needed to fill the many gaps still existing in the field of L3 acquisition, especially with respect to languages that are not often put in relation to one another in terms of their acquisition by learners. As for this study, the hope is to have provided a valuable contribution to the advancement of this debate. The next step would be testing similar learner groups on null-subject production, which will help to clarify and possibly corroborate the current findings.

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