Topic drop and *pro* drop

C.-T. James Huang and Barry C.-Y. Yang
Harvard University | National United University

One major difference between Chinese-type and German-type languages is that the former allows extensive types of argument drop, while the latter is quite limited beyond the existence of a null topic. This study argues (a) that it is necessary to distinguish among phenomena that have sometimes been referred to with the undifferentiating term "radical *pro* drop"; (b) that the null topic is restricted to root clauses (CP edge) based on its locality properties; (c) that the Chinese-type null topic requires licensing at the CP edge by Internal Merge; and (d) that the CP edge requirement may be lifted only under conditions of last resort. Evidence comes from our new observation of locality effects showing a contrast between overt and null topics. Specifically, while the *pro* option is available with an overt topic, null topics must be brought to the CP edge via Internal Merge.

Keywords: topic drop, null topic, *pro* drop, null subject, MCP

1. Introduction

Since the null topic was identified along with *pro* drop in the early 1980s as a significant point of parametric variation among languages as in (1) (Huang 1984, inter alia), much work has investigated the construction in Chinese-type and German-type languages.

(1)   [*pro* drop]   and [null topic] parameters: four language types
      a. [+*pro* drop,   −null topic] = Italian, Spanish, etc.
      b. [+*pro* drop,   +null topic] = Chinese, Japanese, Portuguese, etc.
      c. [-*pro* drop,   −null topic] = English, French, etc.
      d. [-*pro* drop,   +null topic] = German, etc.

One major difference between them is that whereas the Chinese-type allows extensive types of argument drop (*pro* drop, argument ellipsis, "true empty category" (Li 2007, et seq.), etc.), which has led some to the undifferentiating term

"radical *pro* drop", the German-type is quite limited beyond the existence of a null topic. Consider German in (2). It has been pointed out that in spoken German a subject or an object pronoun can be dropped only when it is in the sentence-initial position (Ross 1982).

(2) German
    a. *ich habe ihn gestern   schon gesehen*
        I   have him yesterday already seen
    b. *ihn habe ich gestern   schon gesehen*
        him have I   yesterday already seen
    c. *gestern   habe ich ihn schon gesehen*
        yesterday have I   him already seen
    d. ___ *habe ihn gestern   schon gesehen*
           have him yesterday already seen
    e. ___ *habe ich gestern   schon gesehen*
           have I   yesterday already seen
    f. **ich habe* ___ *gestern   schon gesehen*
        I   have   yesterday already seen
    g. **ihn habe* ___ *gestern   schon gesehen*
        him have   yesterday already seen
    h. **gestern   habe* ___ *ihn schon gesehen*
        yesterday have   him already seen
    i. **gestern   habe ich* ___ *schon gesehen*
        yesterday have I   already seen
    j. ** ___ *habe* ___ *gestern   schon gesehen*
           have   yesterday already seen
    k. **gestern   habe* ___ ___ *schon gesehen*
        yesterday have   already seen

In each of the (a–c) sentences, the sentence-initial position, i.e., the topic position, is occupied by a subject or an object pronoun or a temporal phrase. In (d–e) the subject/object pronoun is deleted. Nonetheless, the deletion is restricted to the sentence-initial position as exhibited in the contrast between (d–e) and (f–i), an important observation made by Ross as a process of "Pronoun Zap". In (j–k) the subject pronoun and the object pronoun cannot be both deleted at the same time. Given the verb-second (V2) requirement of German that a finite verb must appear in the second position of a main clause, and the received view that the sentence-initial position houses the topic of a sentence, the pattern in (2) shows that a noun phrase may drop only from the topic position (as in (2d–e)), but not from any other argument positions (as in (2f–k)). That is, German has the parametric setting of [-*pro* drop, +null topic].

On the other hand, languages of the Chinese-type allow not only null topics but also *pro* drop. The former can be clearly observed from a well-known example of "Topic NP Deletion" in Chinese in (3) where deletion of a topic phrase (represented by "*e*") is possible under identity with one in a preceding sentence (Tsao 1977).

(3) [<u>*Zhongguo*</u>$_i$, *difang hen da.*] [e_i, *renkou   hen duo.*] [e_i, *tudi hen feiwo.*] [e_i,
     China   place very big   population very many   land very fertile
     qihou ye hen hao.] [e_i, *women dou hen xihuan.*]
     climate too very good   we   all   very like
     '[As for] China, [its] land area is very large. [Its] population is very big. [Its] land is very fertile. [Its] climate is also very good. We all like [it].'

                                                                 (Huang 1984: 549)

As for *pro* drop, Huang (1984) shows that both null subjects and null objects are allowed, with certain subject-object asymmetries in the potential reference of these null elements. Consider (4). In (4a) the null subject can be ambiguous as the indexes suggest. It may refer to either the matrix subject *Zhangsan* (personal name), or to a distinct topic which has been introduced in discourse but omitted (and hence null) from the current utterance. In (4b) the null object can only refer to the null topic.

(4) a. *Zhangsan$_i$ shuo* [$e_{i/j}$ *bu renshi Lisi*]
         Zhangsan say   not know Lisi
         'Zhangsan$_i$ said [he$_{i/j}$] did not know Lisi.'
     b. *Zhangsan$_i$ shuo* [*Lisi bu   renshi e*$_{*i/j}$]
         Zhangsan say   Lisi not know
         'Zhangsan$_i$ said Lisi did not know [him$_{*i/j}$].'

Huang suggests that the null subject in (4a) can be a *pro* (A-bound) or a variable (A-free) whereas the null object in (4b) should be exclusively a variable bound by a null topic. Under the relevant interpretation, then, (4b) in Chinese is represented as in (4b′) below, and (2e) in German is as in (2e′):

(4b′) [*e*]$_j$ [*Zhangsan shuo* [*Lisi bu renshi e$_j$*]]
           Zhangsan said Lisi not know

(2e′) [*e*]$_i$ [*habe ich e$_i$ gestern   schon   gesehen*]]
           have I   yesterday already seen

The subject-object asymmetry observed in (4a–b) is derived as a consequence of the Generalized Control Rule (GCR, Huang 1984; 1989), which co-indexes a *pro* with the closest noun phrase, and the Binding Principle B. Further research on

the asymmetry has led to various possible categorizations over the status of the null object:

(5) a. a variable bound by topic that is itself a *pro*   (Huang 1984; 1989)
     b. a *pro*   (Kuroda 1965)
     c. an elliptical VP-in-disguise   (Huang 1991; Otani & Whitman 1991)
     d. an elliptical NP   (Oku 1998)
     e. a "true empty category" (TEC)   (Li 2007)

Some linguists have suggested that while the German-type languages require that the null topic be licensed through the CP edge which serves as a point for discourse linking, the Chinese-type languages are not so restricted (e.g., Sigurðsson 2011; Sigurðsson & Maling 2010). Yet, due to the confounding factors of ellipsis and *pro* drop, the independent status of a null topic in Chinese-type languages is sometimes lost in recent research.

This study, unless otherwise noted, is mainly concerned with the corresponding relationship between the subject *pro* and the *argumental* null topic, leaving aside matters related to adjunct topics. We claim that with evidence from an array of data of locality effects, it is necessary to distinguish among phenomena that have sometimes been referred to with the undifferentiating term "radical *pro* drop" and topic drop in Chinese. It will be shown that topic drop is subject to stricter conditions than previously thought, and that the Chinese-type null topics also require licensing at the CP edge by Internal Merge (Chomsky 2001). This paper is organized as follows. §2 presents an array of locality effects of overt topic extraction. Some apparent counterexamples are revisited. §3 considers the additional conditions on topic drop that are not observed with overt topics. §4 views topic drop as a case of root clause phenomena. §5 proposes that topic drop be licensed at CP edge in Chinese. §6 concludes the paper.

2.   Topic extraction and locality constraints

Chinese is a topic-prominent language which, as the term suggests, heavily employs structures consisting of topics (what the sentence is about) and comments (what is being said about the topic) (Li & Thompson 1976, 1981; Tsao 1977, 1990). For instance, in (6) the sentences can be best analyzed as involving a sentence-initial topic phrase and a comment clause in which there is no obvious gap corresponding to the topic. Such a configuration is generally not found in subject-prominent languages.

(6) a. [_Topic_ *Na chang da-huo*], [_Comment_ *xingkui   xiaofang-dui*
          that CL   big-fire   fortunately fire-brigade
     lai-de-kuai].
     come-able-quickly
     '(As for) that big fire, fortunately the fire brigade came quickly.'

    b. [_Topic_ *Zhe ci kaoshi*], [_Comment_ *women yiding   hui renzhen xuexi*].
          this CL exam   we   definitely will earnest study
     '(As for) this exam, we definitely will study hard.'

    c. [_Topic_ *Hua   (a)*], [_Comment_ *ta zhi xihuan meiguihua*].
          flower TOP   she only like   rose
     '(As for) flowers, she only likes roses.'

It is also this topic-prominent characteristic that makes Chinese a so-called discourse *pro*-drop language whose dropped elements can be recovered from a preceding independent sentence in discourse as in (7), or from within the same sentence as in (8).

(7) a. Speaker A: *Zhangsan_i ne?*
              Zhangsan Q
              'Where is Zhangsan_i?'

    b. Speaker B: *e_i lai   le.*
                   come PERF
              '[He_i] has come.'

(8) a. *Zhangsan_i (a), e_i bu renshi Lisi.*
      Zhangsan TOP   not know Lisi
      'Zhangsan_i, [he_i] does not know Lisi.'

    b. *Lisi_i (a), Zhangsan bu renshi e_i.*
      Lisi TOP Zhangsan not know
      'Lisi_i, Zhangsan does not know [him_i].'

A topicalized constituent in Chinese is generally not clause-bounded. The sentence in (9) is grammatical when the topic *Zhangsan* is co-referential with an embedded empty subject. Even if it is dropped as in (10b), the long-distance dependency can still be maintained when the referent is prominent in the context.

(9) *Zhangsan_i (a), Wangwu shuo [e_i hui lai].*
    Zhangsan Top Wangwu say   will come
    'Zhangsan_i, Wangwu said [he_i] would come.'

(10) a. Speaker A: *Zhangsan_i ne?*
               Zhangsan Q
               'Where is Zhangsan_i?'

b.   Speaker B: [e]$_i$, *Wangwu$_j$ shuo* [e$_i$ *hui lai*].
                              Wangwu say   will come
                         'Wangwu$_j$ said [he$_i$] would come.'

A noteworthy property of topicalization in Chinese is that the topic may apparently be extracted from within a syntactic island, as illustrated by the grammaticality of the sentences in (11). In these sentences, extraction of a topic phrase appears to have occurred from within a relative clause (11a) or from the left branch of an NP (11b), violating the Complex NP Constraint (CNPC) and the Left Branch Condition (LBC), respectively.

(11) a.   *Zhangsan$_i$ (a),* [*xuduo* [e$_i$ *xie*] *de shu*] *dou hen changxiao.*
          Zhangsan TOP many   write DE book all   very well-sell
          'Zhangsan$_i$, many books that [he] writes sell very well.'

     b.   *Zhangsan$_i$,* [e$_i$ *baba*] *hen youqian.*
          Zhangsan,   father very rich
          'Zhangsan, [his] father is very rich.'

Nonetheless, Huang (1984; 1989) shows that there is a systematic left-right asymmetry in (12–16), showing that island violations are restricted depending on the position where an island is located. In the following (a)-sentences of (12–16), extraction is possible from an island in the subject position. However, in the (b)-sentences, extraction is not permitted from an island in the post-verbal position. In each of the (c) sentences, when the post-verbal island is preposed before the subject, extraction becomes possible again, rendering these sentences grammatical.

(CNPC)
(12) a.   *Zhangsan$_i$,* [[e$_i$ *chang-ge de shengyin*] *hen haoting*].
          Zhangsan   sing-song DE voice   very good-to-hear
          'Zhangsan$_i$, [his$_i$] voice of singing is very good.'

     b.   **Zhangsan$_i$,* [*wo hen xihuan* [e$_i$ *chang-ge de shengyin*]].
          Zhangsan I   very like   sing-song DE voice
          'Zhangsan$_i$, I like [his$_i$] voice of singing.'

     c.   *Zhangsan$_i$,* [e$_i$ *chang-ge de shengyin*]$_j$ [*wo hen xihuan t$_j$*].
          Zhangsan   sing-song DE voice   I   very like
          Lit. 'Zhangsan$_i$, [his$_i$] voice of singing, I like.'

(13) a.   *Zhangsan$_i$,* [[e$_i$ *xie   de shu*] *bu shao*].
          Zhangsan   write CL book not few
          'Zhangsan$_i$, books that [he$_i$] has written are numerous.'

   b. *$Zhangsan_i$, [*wo nian le   bu shao [e_i xie   de shu*]].
       Zhangsan I   read PERF not few   write CL book
       '$Zhangsan_i$, I have read many books that [he_i] has written.'

   c. *$Zhangsan_i$, [e_i *xie   de shu*]$_j$ [*wo nian le   bu shao t_j*].
       Zhangsan   write CL book I   read PERF not few
       Lit. '$Zhangsan_i$, many books that [he_i] has written, I have read.'

(14) a. *$Zhangsan_i$, [[*piping e_i de ren*]   *bu shao*]
        Zhangsan criticize   CL person not few
        '$Zhangsan_i$, people who criticize [him_i] are numerous.'

    b. *$Zhangsan_i$, [*wo renshi hen duo   [piping e_i de ren*]]
        Zhangsan I   know very many criticize   CL person
        '$Zhangsan_i$, I know many people that criticize [him_i].'

    c. *$Zhangsan_i$, [*piping e de ren$_i$*]$_j$ [*wo renshi hen duo t_j*]
        Zhangsan criticize CL person I   know very many
        Lit. '$Zhangsan_i$, many people that criticize [him_i], I know.'

(LBC)

(15) a. *$Zhangsan_i$, [e_i baba] hen youqian.*
        Zhangsan,   father very rich
        '$Zhangsan_i$, [his_i] father is very rich.'

    b. *$Zhangsan_i$, wo kanjian [e_i baba].*
        Zhangsan I saw   father.
        '$Zhangsan_i$, I saw [his_i] father.'

    c. *Zhangsan, [e_i baba]$_j$ wo kanjian le t_j.*
        Zhangsan   father I saw   PERF
        Lit. '$Zhangsan_i$, [his_i] father, I saw.

(16) a. *Na ge nühai$_i$, [e_i yanjing] hen haokan.*
        that CL girl   eyes   very pretty.
        'That $girl_i$, [her_i] eyes are very pretty.'

    b. *Na ge nühai$_i$, wo xihuan [e_i yanjing].*
        that CL girl   I like   eyes
        'That $girl_i$, I like [her_i] eyes.'

    c. *Na ge nühai$_i$, [e_i yanjing]$_j$, wo xihuan t_j.*
        that CL girl,   eyes,   I like
        Lit. 'That girl, [her] eyes, I like.'

An account proposed in Huang (1984) for the asymmetry hinges on the availability of *pro* and the minimality requirement of the GCR. That is, the (a)- and (c)-sentences with apparent island violations are grammatical when the topic is directly merged to the Spec of CP and is related to the main clause by coindexing with the closest available *pro* occupying the gapped position (represented by "*e*").

The (b)-sentences cannot be obtained through this non-movement route, because the *pro* is located within a post-verbal constituent, too far to be coindexed with the topic under the GCR. Since the movement option is also excluded by island constraints, the (b)-sentences are ruled out.

Interestingly, some data have been presented that seem to be at odds with the asymmetries of island sensitivity just described. Xu (1986; 2006) and Xu & Liu (1998) provide examples, as in (17), showing that extraction of a topic from a post-verbal island is still possible.

(17) a. *Na ben shu$_i$, wo renshi* [*henduo* [*kan-bu-dong   e$_i$*] *de ren*].
          that CL book I   know many   read-not-understand   DE person
          'That book$_i$, I know many people who cannot read [it$_i$].'

   b. *Zhexie hua$_i$,* [*wo dou mei-you jian-guo* [*xihuan e$_i$*] *de ren*].
          these picture I   all not-have see-EXP like   DE person
          'These pictures$_i$, I haven't seen anybody who likes [them$_i$].'

   c. *Zheme wanpi   de haizi$_i$,* [*wo zhao-bu-dao yuanyi shouyang e$_i$*] *de ren*].
          so   naughty CL child I   cannot-find willing adopt   DE person
          'Such a naughty child$_i$, I cannot find anybody willing to adopt [him$_i$].'

However, in the midst of the conflicting data, Zhang (2009) has carefully observed these asymmetries and points out that a crucial difference between (12–16) and (17) is that the latter involves "specific eventuality" which results from a focalized environment: negation, *dou* 'all', and certain complex expressions, etc.[1] If these elements are carefully teased apart as in (18–19), one can easily see that the ban on extraction from a post-verbal complex NP island is still valid.

(18) a. *Na ben shu$_i$, wo renshi* [*henduo* [*kan-bu-dong   e$_i$*] *de ren*].
          that CL book I   know many   read-not-understand   DE person
          'That book$_i$, I know many people who cannot read [it$_i$].'

   b. ?*Na ben shu$_i$, wo renshi* [*henduo* [*kan-de-dong   e$_i$*] *de ren*].
          that CL book I   know many   read-able-understand   DE person
          'That book$_i$, I know many people who can read [it$_i$].'

   c. ??*Na ben shu$_i$, wo renshi* [[*kan-de-dong   e$_i$*] *de ren*].
          that CL book I   know read-de-understand   DE person
          'That book$_i$, I know people who can read [it$_i$].'

   d. **Na ben shu$_i$, wo renshi* [[*kan e$_i$*] *de ren*].
          that CL book I   know read   DE person
          'That book$_i$, I know people who read [it$_i$].'   (Zhang 2009: 530)

[1] Zhang refers to the "specific eventuality" as "the realis events which are granted precise, designated positions in specific spacio-temporal frames in the real world" (Zhang 2009: 536, our translation).

(19) a. *Zheme wanpi   de haizi*$_i$*, wo zhao-bu-dao* [[*yuanyi shouyang e*$_i$] *de*
           so   naughty DE child, I   find-not-reach willing   adopt   DE
           ren].
           person
           'Such a naughty child$_i$, I cannot find anybody who is willing to adopt
           [him$_i$].'

      b. ?*Zheme wanpi   de haizi*$_i$*, wo zhao-dao-le* [[*yuanyi shouyang e*$_i$] *de*
           so   naughty DE child, I   find-reach-PERF willing   adopt   DE
           ren].
           person
           'Such a naughty child$_i$, I found someone who is willing to adopt [him$_i$].'

      c. ??*Zheme wanpi   de haizi*$_i$*, wo zhao-dao-le* [[*shouyang e*$_i$] *de ren*].
           so   naughty DE child, I   find-reach-PERF adopt   DE person
           'Such a naughty child$_i$, I found someone who adopted [him$_i$].'

                                                                          (Zhang 2009: 530)

Similar observations are also attested on left-branching constituents. In each of
the (a)-sentences of (20–22), the left-branching constituent is situated in the post-
verbal position and is awkward. When a focused element *zhi* 'only' is added in
the (b)-sentences, these sentences are all remedied. Likewise, the contrastive con-
stituents in (21c) and (22c) and the *lian* 'even' element in (22d) give rise to the
same remedying effect.

(20) a. **Zhangsan*$_i$*, wo kanjian le* [*e*$_i$ *hou naoshao*].
           Zhangsan I saw   PERF   back-of-head
           'Zhangsan$_i$, I saw the back of [his$_i$] head.'

      b. *Zhangsan*$_i$*, wo zhi kanjian le* [*e*$_i$ *hou naoshao*]
           Zhangsan I   only saw   PERF   back-of-head
           'Zhangsan$_i$, I only saw the back of [his$_i$] head.'   (Zhang 2009: 561)

(21) a. **Na ge nühai*$_i$*, wo xihuan* [*e*$_i$ *yanjing*]
           that CL girl   I   like   eyes
           'That girl$_i$, I like [her$_i$] eyes.'

      b. *Na ge nühai*$_i$*, wo zhi xihuan* [*e*$_i$ *yanjing*].
           that CL girl   I   only like   eyes
           'That girl$_i$, I only like [her$_i$] eyes.'

      c. *Na ge nühai*$_i$*, wo xihuan* [*e*$_i$ *yanjing*]; *zhe ge nühai*$_j$*, wo xihuan* [*e*$_j$ *bizi*].
           that CL girl   I   like   eyes   this CL girl, I   like   nose
           'That girl$_i$, I like [her$_i$] eyes; this girl$_j$, I like [her$_j$] nose.' (Zhang 2009: 561)

(22) a. **Na ge xuesheng*$_i$*, wo jide*   [*e*$_i$ *mingzi*].
           that CL student   I   remember   name
           'That student$_i$, I remember [his$_i$] name.'

    b. *Na ge xuesheng$_i$, wo zhi jide   [e$_i$ mingzi].*
        that CL student   I   only remember   name
        'That student$_i$, I only remember [his$_i$] name.'

    c. *Na ge xuesheng$_i$, wo jide   [e$_i$ mingzi]; bu jide   [e$_i$*
        that CL student   I   remember   name   not remember
        zhangxiang] le.
        looks   PERF
        'That student$_i$, I remember [his$_i$] name; don't remember [his$_i$] looks.'

    d. *Na ge xuesheng$_i$, wo lian [e$_i$ mingzi] dou wang le.*
        that CL student   I   even   name   all forget PERF
        Lit. 'That student$_i$, I, even [his$_i$] name, have forgotten.'   (Zhang 2009: 562)

Zhang's proposal is couched in functional-cognitive grammatical terms and can be summarized as follows:

(23) a. Both the extraction target and the extraction site must be in a state of being "activated" (receiving attention).

     b. The target must be higher in potential topicality, the extraction site must be lower in potential topicality and higher in being a focus.

     c. Definiteness of DP and specificity of events contribute to topicality of target, and relative opacity of the extraction site. Indefiniteness, focus particles, negation, contrast, etc., contribute to focus.

     d. Subjacency applies to topicalization extractions.

     e. Violation of Subjacency is tolerated only if the extraction site receives "extra activation".

Zhang's observations, in particular his generalization that "extra activation" makes island violation possible, are both important and insightful. In the framework we are assuming, constituents that receive "extra attention" or "extra activation" are focused constituents, which trigger LF movement to the left periphery of a sentence, to [Spec, FocusP] of the CP domain (Rizzi 1997).

    The idea of LF focus movement is not novel, and has its origin in Chomsky's (1976) account of weak crossover (WCO) effects, as illustrated in the paradigm below.

(24) a. *Who$_i$ does his$_i$ mother love t_i?

     b. *His$_i$ mother loves everyone$_i$.

     c. *His$_i$ mother loves someone$_i$.

     d. His$_i$ mother loves John$_i$.

     e. *His$_i$ mother loves JOHN$_i$.

(25) a. *Who$_i$ does the woman he$_i$ loved betray t_i?

     b. *The woman he$_i$ loved betrayed everyone$_i$.

   c. *The woman he$_i$ loved betrayed someone$_i$.
   d.   The woman he$_i$ loved betrayed John$_i$.
   e. *The woman he$_i$ loved betrayed JOHN$_i$.

Canonical WCO refers to a structure where a *wh*-constituent has overtly, but illegitimately, moved across a (non-commanding) co-referential pronoun as illustrated in (24a) and (25a). The ungrammatical status of these (a)-sentences is paralleled by their (b)- and (c)-counterparts with a quantificational object *everyone* and *someone* in place of *who*, but not by the (d)-sentences with referential object *John*. On the provision of Quantifier Raising (QR), which applies to *everyone, someone*, but not to *John*, Chomsky accounts for this state of affairs by what has come to be known as the Leftness Condition (LC), applied at the level of LF:

(26)   The Leftness Condition (LC):
       A variable cannot be the antecedent of a pronoun to its left.

Since *John* in (24d) and (25d) is not a quantificational NP, it does not undergo QR, hence the lack of WCO effects. However, when *John* bears focal stress as in (24e) and (25e), it behaves on a par with a quantificational NP. The same observation can be made of an *only*-NP:

(27)   a. *His$_i$ mother loves only John$_i$.
      b. *The woman he$_i$ loves betrayed only John$_i$.

Under Chomsky's (1976) treatment then, a focused constituent is a quantificational NP subject to QR, giving rise to LF representations like those in (28), in violation of the LC:

(28)   a. [$_{FocP}$ JOHN$_i$ [$_{TP}$ his$_i$ mother loved t_i]]
      b. [$_{FocP}$ JOHN$_i$ [$_{TP}$ the woman he$_i$ loved betrayed t_i]]
      c. [$_{FocP}$ only John$_i$ [$_{TP}$ his$_i$ mother loved t_i]]
      d. [$_{FocP}$ only John$_i$ [$_{TP}$ the woman he$_i$ loved betrayed t_i]]

That focused NPs are quantificational in nature also has its foundation in semantics. Since Rooth (1985), it has been widely accepted that focus is associated with alternatives that are (universally) quantified. Under the provision of QR, it is no wonder that focused NPs, but not non-focused referential arguments, exhibit WCO effects.

    Now let us return to Zhang's (2009) observations and consider some of his examples. The contrast shown between (20a) and (20b) arises because in (20b) the object [*pro hou-naoshao*] 'back of [*pro*'s] head' is put in exhaustive focus by the adverbial *zhi* 'only'. Assuming that in LF, [*pro hou-naoshao*] forms a phrase with

its focalizer *only* and together moves to [Spec, FocusP], we have the LF representation for (20b):

(29) $[_{Top}$ *Zhangsan*$_i]$ $[_{FocP}$ $[zhi$ pro_i $hou\text{-}naoshao]_j$ $[_{TP}$ *wo kanjian-le* $t_j]$
       Zhangsan   only   back-of-head   I   see-PERF

Note that this structure is no different, in all relevant respects, from the earlier (c)-examples we saw in (12–16), where an object island has been preposed before the subject. The focused phrase is brought by QR before the subject, and the base-generated topic can now be licensed by coindexing with *pro* under GCR. Other examples can be similarly treated. The LF representations of (c) and (c) are as given in (30–31). In each case, the *pro* within the focus-moved constituent can be co-indexed with the topic phrase, avoiding island effects.

(30) $[_{TopP}$ that girl$_i$ $[_{FocP}$ pro_i eyes$]_j$ $[_{TP}$ I like $t_j]$;
      $[_{TopP}$ this girl$_k$ $[_{FocP}$ pro_k nose$]_l$ $[_{TP}$ I like $t_l]$

(31) $[_{TopP}$ that student$_i$] $[_{FocP}$ even pro_i name$]_j$ $[_{TP}$ I have forgotten $t_j]$

To conclude, overt topicalization in Chinese may be formed by co-indexing *pro* with a base-generated topic. Co-indexation is subject to minimality conditions, therefore resulting in a systematic left-right asymmetry of apparent island violations. On the other hand, in English, given the unavailability of the *pro* option, no similar apparent island violations are possible. The only way to relate an extraction site to the topic position is by movement, which is restricted by Subjacency.

3.   Restrictions on topic drop

The preceding sections have discussed the distribution of overt topic constructions and their restrictions. This section shows that additional restrictions are imposed when the topics are null. To begin with, a topic can be optionally dropped in Chinese if it is prominent in the context. As such, the sentences in (32) can be ambiguous, depending on the context.

(32) $[e]_j$ *Zhangsan*$_i$ *shuo* $[e_{i/j}$ *hui lai*].
      Zhangsan say   will come
     'Zhangsan$_j$ said [he$_{i/j}$] would come.'

If there is no salient discourse referent around, the embedded null subject may refer to the matrix subject, *Zhangsan*, as the index "i" indicates (hereafter, the "subject reading"). When the topic is prominent in the discourse, for instance, with a previous utterance 'What about *Lisi*?' the null subject may refer to the topic

Lisi as the index "j" indicates (hereafter, the "topic reading"), even though it has no phonetic content in the sentence. In what follows we shall limit our discussion to the topic reading. To save space we shall assume contexts similar to (33) where *Lisi* is the salient topic in the discourse.

(33) Speaker A: *Lisi$_j$ ne?*
       Lisi Q
       'What about Lisi?'
     Speaker B: a. *Zhangsan$_i$ shuo* [e_j *du-guo   yuyanxue*].
          Zhangsan say   study-EXP linguistics
          'Zhangsan$_i$ said [he$_j$] had studied linguistics before.'
       b. *Zhangsan$_i$ shuo* [e_j *hen xihuan na fu hua*].
          Zhangsan say   very like   that CL painting
          'Zhangsan$_i$ said [he$_j$] liked that painting very much.'

Now, consider the following sentences. It is interesting to note that the topic reading disappears when the null subject is immediately preceded by another topic phrase. More specifically, the null subject can only refer to the matrix subject, *Zhangsan*.

(34) a. *Zhangsan$_i$ shuo* [$_{CP}$ *yuyanxue$_k$* [$e_{i/*j}$ *du-guo e_k*]].
       Zhangsan say   linguistics   study-EXP
       'Zhangsan$_i$ said [he$_{i/*j}$] had studied linguistics before.'
     b. *Zhangsan$_i$ shuo* [$_{CP}$ [*na fu hua*]$_k$ [$e_{i/*j}$ *hen xihuan e_k*]].
       Zhangsan say   that CL painting   very like
       'Zhangsan$_i$ said [he$_{i/*j}$] liked that painting very much.'

The null subject here is unlike an unpronounced pronominal since if it is phonetically realized the topic-reading is easily available.

(35) a. *Zhangsan$_i$ shuo* [$_{CP}$ *yuyanxue$_k$* [*ta$_{i/j}$ du-guo e_k*]].
       Zhangsan say   linguistics   he study-EXP
       'Zhangsan$_i$ said he$_{i/j}$ had studied linguistics before.'
     b. *Zhangsan$_i$ shuo* [$_{CP}$ [*na fu hua*]$_k$ [*ta$_{i/j}$ hen xihuan e_k*]].
       Zhangsan say   that CL painting he   very like
       'Zhangsan$_i$ said he$_{i/j}$ liked that painting very much.'

One may speculate that it is because the intervening topic blocks the linking from the null subject to the discourse. However, such a speculation is valid only if construal with a null topic is intended. When the intended discourse topic is overtly realized as in (36), the topic-reading surfaces again.

(36) a. *Lisi*$_j$ *(a), Zhangsan*$_i$ *shuo* [$_{CP}$ *yuyanxue*$_k$ [*e*$_j$ *du-guo*   *e*$_k$]].
          Lisi$_j$ Top Zhangsan say   linguistics   study-EXP
          Lit. 'Lisi$_j$, Zhangsan$_i$ said [he$_j$] had studied linguistics before.'

  b. *Lisi*$_j$ *(a), Zhangsan*$_i$ *shuo* [$_{CP}$ [*na fu hua*]$_k$ [*e*$_j$ *hen xihuan e*$_k$]].
          Lisi Top Zhangsan say   that CL painting   very like
          Lit. 'Lisi$_j$, Zhangsan$_i$ said [he$_j$] liked that painting very much.'

The blocking effect under investigation also carries over to indirect *wh* interrogatives and factive complements. In (37) the null subject is embedded in a *wh*-interrogative clause selected by an interrogative predicate *xiang-zhidao* 'want-know', and the topic-reading is illegitimate. In (38) the null subject is embedded in a factive complement, and the topic reading is also blocked.[2]

(*Wh*-interrogative)
(37) a. *Zhangsan*$_i$ *xiang-zhidao* [*e*$_{i/*j}$ *hui yujian shei*].
          Zhagnsan want-know   will meet   who
          'Zhangsan$_i$ wonders whom [he$_{i/*j}$] will meet.'

  b. *Zhangsan*$_i$ *xiang-zhidao* [*e*$_{i/*j}$ *qu-guo nali*].
          Zhagnsan want-know   go-EXP where
          'Zhangsan$_i$ wonders where [he$_{i/*j}$] has been.'

(Factive complement)
(38) a. *Zhangsan*$_i$ *fajue/dezhi* [*e*$_{i/*j}$ *zhong letou   le*].
          Zhagnsan realize/learn   win   lottery PERF
          'Zhangsan$_i$ realized/learned that [he$_{i/*j}$] had won the lottery.'

  b. *Zhangsan*$_i$ *fajue/dezhi* [*e*$_{i/*j}$ *kao-shang daxue   le*].
          Zhagnsan realize/learn   pass   university PERF
          'Zhangsan$_i$ realized/learned that [he$_{i/*j}$] had passed the exam for a university.'

Still, an overt topic merged to the top of the sentence saves the topic reading mentioned above. As (39) and (40) show, the null subject now refers to the overt topic phrase. They also indicate that to derive the topic reading for a null subject in these constructions the topic phrase must not be dropped, contrary to what is expected from (10) and (33) above.[3]

---

2. In fact, (37) consists of a *wh*-island and (38), a factive island. Both of them have long been recognized as island constructions banning movement. Therefore, the Internal Merge approach adopted in this study (see § 5) also explains why they do not allow the topic reading.

3. One may wonder how (39–40) can avoid GCR violation. If we have the overt topic phrase first merged to the embedded CP and then moved to the sentence-initial position, there will be no GCR violation since the GCR is satisfied in the beginning. This can be further evidenced with the following two independent observations. First, in (12b) there is no legitimate CP posi-

(39) a. *Lisi$_j$ (a), Zhangsan$_i$ xiang-zhidao* [*e$_j$ hui yujian shei*].
      Lisi TOP Zhagnsan want-know   will meet who
      'Lisi$_j$, Zhangsan$_i$ wonders whom [he$_j$] will meet.'

    b. *Lisi$_j$ (a), Zhangsan$_i$ xiang-zhidao* [*e$_j$ qu-guo nali*].
      Lisi TOP Zhagnsan want-know   go-EXP where
      'Lisi$_j$, Zhangsan$_i$ wonders where [he$_j$] has been.'

(40) a. *Lisi$_j$ (a), Zhangsan$_i$ fajue/dezhi* [*e$_j$ zhong letou le*].
      Lisi TOP Zhagnsan realize/learn   win lottery PERF
      'Lisi$_j$, Zhangsan$_i$ realized/learned that [he$_j$] had won the lottery.'

    b. *Lisi$_j$ (a), Zhangsan$_i$ fajue/dezhi* [*e$_{i/*j}$ kao-shang daxue le*].
      Lisi TOP Zhagnsan realize/learn   pass   university PERF
      'Lisi$_j$, Zhangsan$_i$ realized/learned that [he$_j$] had been admitted to a university.'

The ban on topic drop can be further extended to constructions invovling relative clauses, NP complements, and adverbial clauses, as shown in (41–43). More specifically, discourse-linking fails if the topic is dropped when it is supposed to be connected to a subject gap within an island. For instance, none of them can be used as a reply or a continuation of a sentence like "Now, let's talk about *Lisi*," when the subject gap is intended to refer to "*Lisi*".

(41) Relative clause
    a. *[$_{DP}$*Xuduo* [$_{CP}$ *e xie*] *de shu*] *dou hen changxiao*.
             many   write DE book all very well.sell
      'Many books that [he] writes sell very well.'

---

tion immediately above the complex NP object for the topic *Zhangsan* to be merged to, and, therefore, it can only be merged to the sentence-initial position, leading to GCR violation. Second, if the topic can move from the embedded CP to the matrix CP as illustrated in (i.a), it should be ruled out when it is further embedded in an island. The example in (i.b) shows that it is indeed so.

  (i) a. *Lisi$_i$ (a), Zhangsan renwei* [$_{CP}$ *t$_i$* [$_{IP}$ *e$_i$ hui cizhi*]].
       Lisi Top Zhangsan think   will resign
       'Lisi$_i$, Zhangsan thinks [he$_i$] will resign.'

     b. **Lisi$_i$ (a),* [$_{DP}$ [$_{CP}$ *e$_j$ renwei* [$_{CP}$ *t$_i$* [$_{IP}$ *e$_i$ hui cizhi*]] *de ren$_j$*]] *tai tianzhen le*.
       Lisi Top   think   will resign DE person too naive   PERF
       'Lisi$_i$, the *person* who thinks [he$_i$] will resign is too naive.'

b. *[$_{DP}$ *Xuduo* [$_{CP}$ *e jiao-guo*] *de xuesheng*] *xianzai dou hen you*
       many   teach-EXP DE student   now   all   very have
    chengjiu.
    achievement
    'Many students that [he] has taught before are now having great achieve-
    ments.'

(42) NP complement
 a. *[$_{DP}$ [$_{CP}$ *e cizhi*] *de yaoyan*] *man-tian fei.*
             resign DE rumor   full-day   fly
    'The rumor that [he] has resigned spreads everywhere.'
 b. *[$_{DP}$ [$_{CP}$ *e jiehun*] *de xiaoxi*] *shi zhende.*
             marry DE news   be real
    'The news that [he] has been married is real.'

(43) Adverbial clause
 a. *[*Yinwei e$_i$ mei lai   xuexiao*], *laoshi$_j$ hen shengqi.*
    because   not come school   teacher very angry
    'Because [he$_i$] didn't come to the school, the teacher$_j$ was very angry.'
 b. *[*Meidang e$_i$ du   shu   shi*], *women$_j$ dou bu neng chu   sheng.*
    whenever   read book then we   all   not can make sound
    'Whenever [he$_i$] is studying, we$_j$ cannot make noise.'

On the contrary, with the topic overtly spelled out the same constructions are
grammatical:[4]

(44) Relative clause
 a. *Lisi$_i$ (a)*, [$_{DP}$ *xuduo* [$_{CP}$ *e$_i$ xie*]   *de shu*] *dou hen changxiao.*
    Lisi Top   many   write DE book all   very well.sell
    'Lisi$_i$, many books that [he$_i$] writes sell well.'
 b. *Lisi$_i$ (a)*, [$_{DP}$ *xuduo* [$_{CP}$ *e$_i$ jiao-guo*] *de xuesheng*] *xianzai dou hen you*
    Lisi Top   many   teach-EXP DE student   now   all   very have
    chengjiu.
    achievement
    'Lisi$_i$, many students that [he$_i$] has taught before are now having great
    achievements.'

---

(45) NP complement

    a. *Lisi$_i$ (a),* [$_{DP}$ [$_{CP}$ *e$_i$ cizhi*] *de yaoyan*] *man-tian fei.*
        Lisi Top   resign DE rumor   full-day   fly
        'Lisi$_i$, the rumor that [he$_i$] has resigned spreads everywhere.'

    b. *Lisi$_i$ (a),* [$_{DP}$ [$_{CP}$ *e$_i$ jiehun*] *de xiaoxi*] *shi zhende.*
        Lisi Top   marry DE news   BE real
        'Lisi$_i$, the news that [he$_i$] has been married is real.'

(46) Adverbial clause

    a. *Lisi$_i$ (a),* [*yinwei e$_i$ mei lai   xuexiao*], *laoshi$_j$ hen shengqi.*
        Lisi Top because   not come school   teacher very angry
        'Lisi$_i$, because [he$_i$] didn't come to the school, the teacher$_j$ was very angry.'

    b. *Lisi$_i$ (a),* [*meidang e$_i$ du   shu shi*], *women$_j$ dou bu neng chu   sheng.*
        Lisi Top whenever   read book then we   all not can   make sound
        'Lisi$_i$, whenever [he$_i$] is studying, we$_j$ cannot make noise.'

These constructions are worth noting, as they distinctly do not exhibit the left-right asymmetry discussed in the previous section. To recapitulate, in §2 it is shown that there exists a systematic left-right asymmetry whereby extraction from a subject or a preposed island is legitimate but not from a post-verbal island. Yet, (41–43) show that even if the extraction is from the subject or the sentence-initial position, they are still awkward when the topic is dropped. This means that topic drop is subject to more restrictions and, again, the null topic construal and the overt one diverge in the availability of the topic reading. While an overt topic may be admitted via external merge and construed with a gap under the GCR giving rise to some apparent island violations, a null topic can be obtained only by internal merge, thus exhibiting full island effects.

4. Main clause phenomenon

The conclusion reached above implies that, regardless of its origin, a null topic must be moved to the root clause, and the movement cannot terminate within an embedded clause. This must be the case for each of the ill-formed sentences in (41–43). If movement of a null topic could terminate within an island, there would be no island violation and no way to rule out these sentences. This means that the null topic construal is sensitive to the Main Clause Phenomena (MCP) in the spirit of Haegeman (2012; 2014), recalling the phenomena of "root transformations" in the early works of Emonds (1970; 1976) and Hooper & Thompson (1973). This study does not intend to provide a full account of MCP. Instead, we show that the null topic construction in Chinese can be subsumed as a case of

MCP, which in turn sheds some light on the mechanism behind null topic construal.

In English it has been claimed that topicalization, as in (47), is not desirable in certain embedded contexts, i.e., an effect of MCP.

(47) data from Haegeman (2012; 2014)
    a. *When <u>this song</u> I heard last week, I remembered my first love.
                                                (temporal adverbial)
    b. *If <u>these exams</u> you don't pass, you won't get the degree.
                                               (conditional clause)
    c. *Mary realizes that <u>this book</u>, John read. (factive predicate)
    d. *John raised the possibility that <u>Mary</u>, your antics would upset.
                                               (appositive clause)
    e. *These are the students to whom, <u>your book</u>, I would recommend in the
        next semester.   (relative clause)
    f. *That <u>this book</u>, Mary read thoroughly is true.   (sentential subject)
    g. *Robin knows where, <u>the birdseed</u>, you are going to put. (wh-interrogative)

Similar constructions of topicalization in Chinese, on the contrary, do not exhibit MCP effects (Kao 2013). In (48) the object underlined in each of the sentences has undergone topicalization in the embedded clause and these sentences are all grammatical.

(48) a. [*Dang <u>na</u> <u>shou</u> <u>ge</u>   Zhangsan changwan de shihou*], *Lisi jiu   ku le.*
       when this CL   song Zhangsan sing-finish DE time   Lisi then cry PERF
       Lit. 'When, <u>that song</u>, Zhangsan finished singing, Lisi cried.
                                             (temporal adverbial)
    b. [*Ruguo <u>zhe</u> <u>ci</u> <u>kaoshi</u> ni   mei tongguo*], *laoshi   hui hen shengqi.*
       if   this CL exam   you not pass   teacher will very angry
       Lit. 'If, <u>this exam</u>, you do not pass, the teacher will be very angry.'
                                             (conditional clause)
    c. *Zhangsan fajue* [<u>*zhe*</u> <u>*ben*</u> <u>*shu*</u> *Lisi zao jiu   du-guo   le*].
       Zhangsan found this CL   book Lisi early then read-EXP PERF
       Lit. 'Zhangsan found, <u>this book</u>, Lisi had read before.'   (factive predicate)
    d. *Zhangsan chufa-le*   [*xuduo* [<u>*zuoye*</u>   *mei jiao*]   *de xuesheng*].
       Zhangsan punish-PERF many   homework not submit DE student
       Lit. 'Zhangsan punished many students who, <u>the homework</u>, did not sub-
       mit.'   (relative clause)
    e. *Laoshi xiang-zhidao* [<u>*zuoye*</u>   *shei mei jiao*].
       teacher want-know   homework who not submit
       Lit. 'The teacher wants to know who, <u>the homework</u>, did not submit.'
                                                (*wh*-interrogative)

A plausible account may suggest that whereas in English there is no more room in the embedded CP to host the topicalized phrase, in Chinese its CP domain is 'rich' enough to do so, as it is a topic-prominent language. Or with the Split-CP framework (Rizzi 1997) the MCP effects in English may be attributed to the defectiveness of the left periphery of CP. Specifically, certain slots are unavailable in the embedded CP domain (Haegeman 2006). Chinese, on the other hand, employs a more articulated structure in CP. It follows that the MCP effects are absent in Chinese.

However, such an observation only applies to overt topics. When it comes to the null topics, their distributions point to the opposite direction, as demonstrated earlier in this section that a null topic is excluded if its associated empty argument is located within a certain embedded context, mostly islands. Granted that, a null topic cannot be formed at some position within an island and be interpreted in-situ as marking a discourse topic. It must be brought to the Spec position of the root CP via movement. That is, an overt topic may be formed by External Merge (or Merge, Chomsky 2001) and side-step Subjacency by being coindexed with a *pro*, but a null topic cannot be licensed in the same way. Given the locality effects observed, it seems that it can only be created by Internal Merge (IM, or Move, Chomsky 2001); hence any island on the path of movement will rule out its derivation. In other words, the null topic in Chinese exhibits a case of MCP. This confirms again that null topics are distinct from overt ones.

We have shown that the key factor to the above observation lies in the (non)existence of an overt topic phrase at the main clause edge, which has much to do with discourse context and is characteristic of Chinese, a discourse-configurational language (Kiss 1995). In the next section we shall see how the generalizations reached above fit with recent conceptions about connecting elements of the sentence with discourse contexts through the left periphery of the CP.

5.   Connecting to the CP edge

In the Government and Binding (GB) era in the '80s, the empty subject position is usually considered taken by a *pro* due to the requirement of the Extended Projection Principle (EPP) which states that a syntactic subject must be present in a sentence (Chomsky 1981; 1982). The interpretation of *pro* depends on some information that the sentence can provide (Taraldsen 1978, 1980; Jaeggli 1982). In agreement languages such as Italian in (49), the recovery of the subject pronouns is determined via the agreement morphology on the verb (Borer 1986; Alexiadou & Anagnostopoulou l998; Kato l999; Holmberg 2005; Alexiadou 2006; Barbosa 2009).

(49) (io) parlo   'I speak'
      (tu) parli   'you.sg speak'
      (egli) parla   'he/she speaks'
      (noi) parliamo   'we speak'
      (voi) parlate   'you.pl speak'
      (essi) parlano   'they speak'

In agreementless languages such as Chinese, the null subjects can still occur in the absence of verbal agreement. The recovery of the subjects would have to resort to the salient antecedents in the context and is regulated by some principles of identification, GCR, for instance (Huang 1984; 1989). It seems that the discrepancy between two types of languages cannot be resolved since the difference lies in the presence/absence of agreement morphology, an observational fact that is true of the surface structure.

In recent years, some linguists have argued that even in agreement-rich languages, null subjects must still be linked to discourse topics to get identified (Frascarelli 2007; Sigurðsson & Maling 2008; Sigurðsson 1993, 2011; see also Cole 2009, 2010). For instance, Sigurðsson (1993) observes from Old Icelandic that, although it is a language with rich inflectional morphology, its null subjects have no direct relationship with verbal agreement. Instead, it is determined by preceding noun phrases (see also van Gelderen 2000; Axel 2007). In Italian Frascarelli (2007) points out that the interpretation of null subjects derives from an Aboutness-Shift topic which sits at ShiftP of the CP domain (see also Frascarelli & Hinterhölzl 2007).

(50) $[_{\text{ShiftP}}$ $\text{DP}_{[\text{aPn}]}$ $[\text{Shift}°$ $[$ … $[_{\text{AgrSP}}$ $[\text{Agr}°$ $[_{vP}$ $\text{pro}_{[\text{aPn}]}$ $[_{VP}$ $]]$ … $]]$ $]]]$
      $\underset{\text{[+aboutness] [φ-features]}}{\underset{\text{---------- AGREE -------------}}{}}$

The head of ShiftP contains an uninterpretable edge feature [+aboutness], an extended EPP feature, which needs to be checked. In Minimalist Program (Chomsky 1995; 2000; 2001), an uninterpretable feature is an imperfection and must be checked/valued under the provision of Agree, and therefore, be eliminated prior to Spell-Out as a requirement of Full Interpretation. Given this, the Shift-head with the uninterpretable feature probes and agrees with the subject *pro* as a goal by way of feature valuation, and therefore, gets checked.

Similarly, Sigurðsson (2011) suggests that a C/edge linking (CLn) device is required in licensing the null arguments in Germanic languages. Specifically, to match the CLn features ("speaker" feature (Λ_A), "hear" feature (Λ_P), and [Top] feature, etc.) in the CP domain, the null arguments would have to raise to the edge

of CP domain in order to be successfully interpreted by the generalization in (51) (see also Sigurðsson & Maling 2008).

(51)   C/Edge-Linking Generalization
       Any definite argument, overt or silent, positively matches at least one CLn in
       its local C-domain, CLn $\in \{\Lambda_A, \Lambda_P, \text{Top}, ...\}$.

If null subjects can be licensed via linking to CP in agreement languages, and if what is previously observed for null topics in Chinese is on the right track, there is good reason to speculate that Chinese may also follow a similar route for licensing their null subjects.

To see this, let us start with the topic construal. In the spirit of Miyagawa (2010), we shall assume the existence of a topic feature, [uTop], on the matrix C-head in Chinese topic construal. We propose that topic licensing in Chinese is carried out via the checking of the [uTop] feature. Given this, there are two ways to check/value the [uTop] feature. The first one is by way of (External) Merge. Specifically, the [uTop] on the C-head is part of the numeration and is pending for valuation (Chomsky 2001). When there is an overt topic phrase XP encoded with the interpretable topic feature [iTop] available in the Lexicon, the External Merge is adopted. The topic phrase is merged to [Spec, CP] to satisfy the feature checking/valuation process as illustrated in (52). The "aboutness" notion of a topic construction is, then, satisfied by co-indexing the topic with a *pro* under the provisions of GCR.

(52)
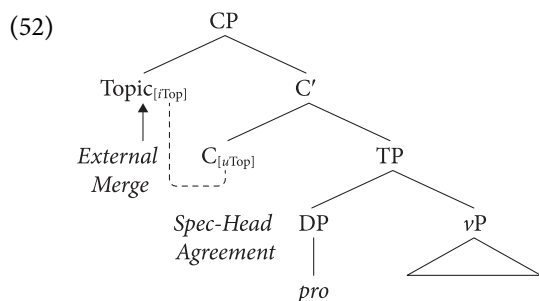
The second way is to employ Internal Merge. When the overt topic is not available in the Lexicon, to get valued, the [uTop] resorts to IM. The C-head probes downward to find the subject *pro* as an appropriate goal and attracts it as illustrated in (53) (or a certain feature of it, e.g., the [+D] feature (Roberts 2010) due to the requirement of EPP-/D-feature checking). This constitutes the topic-drop construal whose topic is restricted to the root clause, hence with a full range of island effects as shown.

(53)
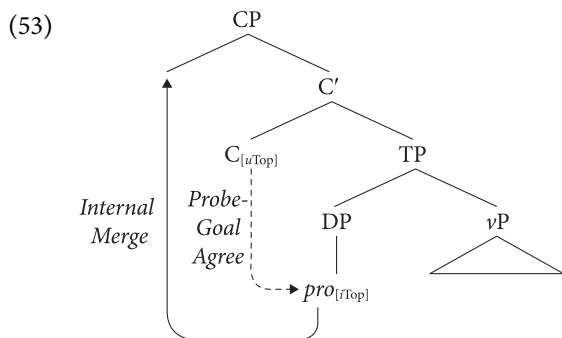
Before closing, one might wonder about the nature of null topic construal and its corresponding gaps in the sentences. Under the mechanism proposed above, the null topic phenomenon is attributed to the checking mechanism of a [uTop] feature at the C-head. In this regard, the null topic cannot be the result of deleting the overt one (no matter whether the overt one is base-generated at CP or moved to CP) since if it were, there should be no difference between the overt topic and the null topic, contrary to what we have observed. Therefore, the nature of a null topic construal must be different from that of an overt topic one. In our approach, the overt topic is directly merged to CP, whereas the null one is, in fact, substantiated by moving either the whole category of the subject *pro* or a certain feature of it. In this sense, it is akin to the covert movement of the subject *pro* to the topic position, only that the subject itself is an empty pronoun. Consequently, the nature of the null subject is of dual status. It is a *pro* and sits at the subject position when the topic is an overt one.[5] In Holmberg's (2005) term, it is a pronoun that is specified but not pronounced. On the other hand, when the topic is null, the subject *pro* has to raise up (in terms of A'-movement in Huang's (1984; 1989) sense). That is, it is attracted by the C-head (or the Top-head in Rizzi's (1997) sense), leading to the movement behavior of A'-dependency as is observed in this study. As for the question how the choice of the subject in the Lexicon to be merged can be a *pro* without being pronounced, we may assume with Holmberg (2005: 560) that the above operations are performed within narrow syntax (Chomsky 2000) which "is oblivious to whether pronouns or inflectional affixes do or do not end up being pronounced." A similar approach can also be found in Frascarelli (2007) where a subject *pro* is first merged and then gets bound by a Topic via Agree/Valuation.

---

5. This result is different from the original assumption of Huang (1984; 1989), although we have used his analyses to discover the different behaviors of overt and null topics leading us to the claim that the overt topic construal is achieved via the option of a base-generated subject *pro* whereas the null topic construal is substantiated via the Internal Merge.

In sum, the above illustration shows that despite their distinct behaviors with respect to locality constraints (or MCP), the overt and the null topic constructions require one general minimalist mechanism, the checking of the uninterpretable [*u*Top] feature in the matrix CP edge. It is, then, the way the [*u*Top] is checked that brings about their corresponding behaviors.[6]

6.   Conclusion and further remarks

In this study, we have demonstrated that it is necessary to distinguish among phenomena that have sometimes been referred to as the undifferentiating term "radical pro drop". Specifically, null arguments of Chinese-type are subject to stricter regulations than previously thought, instead of simply "dropping" the subject by either deleting it or merging a *pro*. It is shown that the conditions on *pro* drop are related to topic drop and are sensitive to CP edge, owing to the locality properties. More precisely, topic drop of Chinese-type requires licensing at the CP edge by Internal Merge. Such a requirement may be lifted only under conditions of last resort. In this sense, the phenomenon of *pro*-drop provides a gate for the licensing of null subjects across languages on the one hand, and for syntax to refer to discourse on the other hand.

One might wonder how Chinese null topics are similar to or different from those in other languages. In our demonstration above, the null topic construal in Chinese is substantiated via the raising of the subject *pro* to the topic position due to the checking requirement from the C-head, hence the parameter [+pro drop, +null topic]. That is, the null topic and the null subject are, in effect, two sides of a coin in Chinese when both are null. Due to the limit of space, we would not be able to explore the strategies employed by other types of languages. The base line is that if a language observes the null topic, we have three strategies in hand to test: (1) Move an overt subject to the topic position and delete it. In this case, locality effects should be observed before deletion of the topic (note that this is not the case for Chinese). (2) Merge an overt topic directly to the topic position and delete it. In this case, locality effects should not be observed with or without

---

6.   One may wonder why not we merge another *pro* to the topic position just like the subject *pro*. Due to economic considerations, we assume one *pro* form in the Lexicon, instead of two identical *pro* forms. Therefore, during the derivation, when the *pro* form has been selected and merged to the subject position, there is no such form available in the Lexicon and, therefore, moving the subject *pro* to the topic position becomes a natural consequence to meet the requirement of checking the [Top] feature. The movement approach is further evidenced via the observation on the locality effects.

the deletion (note that this is not the case for Chinese, either, since we do observe the contrast). (3) Merge a subject *pro* in the subject position and raise it to the topic position, as is employed in Chinese. Locality effects are then observed. As for the overt topic, we can simply merge it to the topic position without resorting to movement. No locality effects are to be observed except in cases otherwise due to independent constraints.[7]

Acknowledgements

Abbreviations

BE	be verb	IM	Internal Merge
CL	classifier	LBC	Left Branch Condition
CLn	C/edge linking	LC	Leftness Condition
CNPC	Complex NP Constraint	PERF	perfective marker
DE	*de*, relative marker	Q	question marker
EPP	Extended Projection Principle	QR	Quantifier Raising
EXCL	exclamative marker	TEC	true empty category
EXP	experiential marker	TOP	topic marker
GB	Government and Binding	WCO	weak crossover
GCR	Generalized Control Rule		

References

Alexiadou, Artemis. 2006. Uniform and non-uniform aspects of pro-drop languages. In Ackema, Peter & Brandt, Patrick & Schoorlemmer, Maaike & Weerman, Fred (eds.), *Arguments and agreement*, 127–158. Oxford: Oxford University Press.

---

7. In this paper we have not dealt with object gaps that are bound by overt topics. Such gaps are possible as long as they are not located in islands. Since such gaps are not admissible by the minimality provisions of the GCR, they cannot originate as a *pro* in the way that a subject gap can. However, as long as Subjacency is obeyed such gaps can be created by moving an overt object into the topic position, under Agree, as triggered by the topic and EPP of the relevant C-head.

doi   Alexiadou, Artemis & Anagnostopoulou, Elena. 1998. Parametrizing agr: Word order, verb-movement and EPP-checking. *Natural Language and Linguistic Theory* 16(3). 491–539.

doi   Axel, Katrin. 2007. *Studies on Old High German syntax: Left sentence periphery, verb placement and verb-second*. Amsterdam: John Benjamins.

doi   Barbosa, Piliar. 2009. Two kinds of subject *pro*. *Studia Linguistica* 63(1). 2–58.

Borer, Hagit. 1986. I-subjects. *Linguistic Inquiry* 17(3). 375–416.

Chomsky, Noam. 1976. Conditions on rules of grammar. *Linguistic Analysis* 2. 303–351.

Chomsky, Noam. 1981. *Lectures on government and binding*. Dordrecht: Foris Publications.

Chomsky, Noam. 1982. *Some concepts and consequences of the theory of government and binding*. Cambridge: The MIT Press.

Chomsky, Noam. 1995. *The minimalist program*. Cambridge: The MIT Press.

Chomsky, Noam. 2000. Minimalist inquiries: The framework. In Martin, Roger & Michaels, David & Uriagereka, Juan (eds.), *Step by step: Essays on minimalist syntax in honor of Howard Lasnik*, 89–155. Cambridge: The MIT Press.

Chomsky, Noam. 2001. Derivation by phase. In Kenstowicz, Michael (ed.), *Ken Hale: A life in language*, 1–52. Cambridge: The MIT Press.

doi   Cole, Melvyn Douglas. 2009. Null subjects: A reanalysis of the data. *Linguistics* 47(3). 559–587.

doi   Cole, Melvyn Douglas. 2010. Thematic null subjects and accessibility. *Studia Linguistica* 64(3). 271–320.

Emonds, Joseph. 1970. *Root and structure-preserving transformations*. Cambridge: MIT. (Doctoral dissertation.)

Emonds, Joseph. 1976. *A transformational approach to English syntax: Root, structure-preserving, and local transformations*. New York: Academic Press.

doi   Frascarelli, Mara. 2007. Subjects, topics and the interpretation of referential *pro*. *Natural Language and Linguistic Theory* 25(4). 691–734.

doi   Frascarelli, Mara & Hinterhölzl, Roland. 2007. Types of topics in German and Italian. In Schwabe, Kerstin. & Winkler, Susanne (eds.), *On information structure, meaning and form: Generalizations across languages*, 87–116. Amsterdam: John Benjamins.

doi   van Gelderen, Elly. 2000. *A history of English reflexive pronouns: Person, self, and interpretability*. Amsterdam: John Benjamins.

Haegeman, Liliane. 2006. Argument fronting in English, Romance CLLD and the left periphery. In Zanuttini, Raffaella & Campos, Hector & Herburger, Elena & Portner, Paul (eds.), *Crosslinguistic research in syntax and semantics: Negation, tense, and clausal architecture*, 27–52. Washington, D.C: Georgetown University Press.

doi   Haegeman, Liliane. 2012. The syntax of MCP: Deriving the truncation account. In Aelbrecht, Lobke & Haegeman, Liliane & Nye, Rachel (eds.), *Main clause phenomena: New horizons*, 113–134. Amsterdam: John Benjamins.

doi   Haegeman, Liliane. 2014. Locality and the distribution of main clause phenomena. In Aboh, Enoch Obladé & Guasti, Maria Teresa & Roberts, Ian (eds.), *Locality*, 186–222. New York: Oxford University Press.

doi   Holmberg, Anders. 2005. Is there a little pro? Evidence from Finnish. *Linguistic Inquiry* 36(4). 533–564.

Hooper, Joan B. & Thompson, Sandra. 1973. On the applicability of root transformations. *Linguistic Inquiry* 4(4). 465–497.

Huang, C.-T. James. 1984. On the distribution and reference of empty pronouns. *Linguistic Inquiry* 15(4). 531–574.

Huang, C.-T. James. 1989. Pro-drop in Chinese: A generalized control theory. In Jaeggli, Osvaldo & Safir, Kenneth (eds.), *The null subject parameter*, 185–214. Dordrecht: Kluwer Academic Publishers.

Huang, C.-T. James. 1991. Remarks on the status of the null object. In Freidin, Robert (ed.), *Principles and parameters in comparative grammar*, 56–76. Cambridge: The MIT Press.

Jaeggli, Osvaldo. 1982. *Topics in Romance syntax*. Dordrecht: Foris Publications.

Kao, Grant Hung-Ta. 2013. *Subjunctive mood and main clause phenomena in Mandarin Chinese*. Hsinchu: National Tsing Hua University. (MA thesis.)

Kato, Mary. 1999. Strong and weak pronominals in the null subject parameter. *Probus* 11(1). 1–37.

Kiss, Katalin É. 1995. Discourse configurational languages: Introduction. In Kiss, Katalin É. (ed.), *Discourse configurational languages*, 3–27. New York: Oxford University Press.

Kuroda, Shige-Yuki. 1965. *Generative grammatical studies in the Japanese language*. Cambridge: MIT. (Doctoral dissertation.)

Li, Charles N., & Thompson, Sandra A. 1976. Subject and topic: A new typology of language. In Li, Charles N. (ed.), *Subject and topic*, 458–489. New York: Academic Press.

Li, Charles N., & Thompson, Sandra A. 1981. *Mandarin Chinese: A functional reference grammar*. Berkeley: University of California Press.

Li, Yen-Hui Audrey. 2007. The theory of empty categories and the identification of empty categories in Chinese. *Yuyan Kexue* 2007(2). 37–47.

Miyagawa, Shigeru. 2010. *Why agree? Why move? Unifying agreement-based and discourse-configurational languages*. Cambridge: The MIT Press.

Oku, Satoshi. 1998. *A theory of selection and reconstruction in the minimalist perspective*. Storrs: University of Connecticut. (Doctoral dissertation.)

Otani, Kazuyo & Whitman, John. 1991. V-raising and VP-ellipsis. *Linguistic Inquiry* 22. 345–358.

Rizzi, Luigi. 1997. The fine structure of the left periphery. In Haegeman, Liliane (ed.), *Elements of grammar: Handbook in generative syntax*, 281–337. Dordrecht: Kluwer Academic Publishers.

Roberts, Ian. 2010. *Agreement and head movement: Clitics, incorporation and defective goals*. Cambridge: The MIT Press.

Ross, John Robert. 1982. Pronoun-deleting processes in German. (Paper presented at the Annual Meeting of the Linguistic Society of America, San Diego, California, 27–30 December 1982.)

Rooth, Mats. 1985. *Association with focus*. Amherst: University of Massachusetts, Amherst. (Doctoral dissertation.)

Sigurðsson, Halldór Ármann. 1993. Argument-drop in old Icelandic. *Lingua* 89(2–3). 247–280.

Sigurðsson, Halldór Ármann. 2011. Conditions on argument drop. *Linguistic Inquiry* 42(2). 267–304.

Sigurðsson, Halldór Ármann. & Maling, Joan. 2008. Argument drop and the Empty Left Edge Condition (ELEC). *Working Papers in Scandinavian Syntax* 81. 1–27.

Sigurðsson, Halldór Ármann. & Maling, Joan. 2010. The empty left edge condition. In Putnam, Michael T. (ed.), *Exploring crash-proof grammars*, 59–86. Amsterdam: John Benjamins.

Taraldsen, Knut Tarald. 1978. *On the NIC, vacuous application and the that-trace filter.* Cambridge: MIT. (Manuscript.)

Taraldsen, Knut Tarald. 1980. *On the nominative island condition, vacuous application, and the that-trace filter.* Bloomington: Indiana University Linguistics Club. (Manuscript.)

Tsao, Feng-fu. 1977. *A functional study of topic in Chinese: The first step towards discourse analysis.* Los Angeles: University of South California. (Doctoral dissertation.)

Tsao, Feng-fu. 1990. *Sentence and clause structure in Chinese: A functional perspective.* Taipei: Student Book Co.

Xu, Liejiong. 1986. Free empty category. *Linguistic Inquiry* 17(1). 75–93.

Xu, Liejiong. 2006. Topicalization in Asian languages. In Everaert, Martin & van Riemsdijk, Henk (eds.), *The Blackwell companion to syntax*, vol. 5, 137–174. Malden: Blackwell Pub.

Xu, Liejiong & Liu, Danqing. 1998. *Topic: Structural and functional analysis.* Shanghai: Shanghai Educational Press.

Zhang, Min. 2009. Hanyu huatihua jiegou xianzhi zhongde linjie tiaojian. In Editorial Committee of *Essays on linguistics* Center for Chinese Linguistics PKU (ed.), *Essays on linguistics*, vol. 39, 523–572. Beijing: Commercial Press. (Special edition in honor of Prof. Noam Chomsky)

Authors' addresses

Barry C.-Y. Yang (corresponding author)
Language Center
National United University
1 Lienda
Miaoli 360301
Taiwan

barryyang@nuu.edu.tw