L1 Transfer in Processing English Subjacency Sentences from Chinese Focused Cleft WHs

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1. Introduction

In theoretical linguistics, one line of inquiry explores the question of whether locality constraints such as restrictions on extraction from WH Island are obeyed in languages that do not share the same structural configurations as English. In second language (L2) studies, one direction of research is to investigate whether adult L2 learners still have access to Universal Grammar (UG), particularly, the Subjacency principle. Both of these areas of linguistics research have taken Mandarin Chinese as a test case in comparison to English, and results in both areas have been controversial. Although Chinese is commonly referred to as a WH-in-situ language, the presence or absence of WH-movement in Chinese is under debate among theoretical linguists (Huang 1984; Aoun & Li 1993; Xu 1990). Likewise, investigations of L2 learners of English whose L1 does not contain overt Wh-movement (and hence no Subjacency violations) have produced mixed empirical results as to whether these learners can correctly reject English sentences with Subjacency violations (Johnson & Newport 1991; White & Juffs 1998; Li 1998).

The research reported in this paper attempts to achieve a connection between L1-Chinese comprehension and L2-English performance, by examining a less known structure of Mandarin Chinese (as versus to the well known in-situ WH), namely, the Focused Cleft WH (FCW) construction, in which the WH-phrase is focused and is clefted to sentence initial position preceded by a focus particle SHI, as shown in example (1b) below:

(1) a. Yuhan jiejue le   shenme wenti?   Wh-in-situ
    John   solve ASP what   problem
    'What problem did John solve?'
  b. Shi shenme wenti$_i$,   Yuanhan jiejue le   t$_i$?   Focused cleft Wh
    SHI what   problem, John   solve ASP
    'What problem is it that John solved?'

The present study consists of two experiments: Experiment 1 examines L1-Chinese speakers' comprehension of Chinese Focused Cleft WH questions; Experiment 2 explores L2-English learners' performance on tests of English sentences with Subjacency violations. The first empirical study shows that Mandarin native speakers differ in their judgments of Chinese sentences that contain extraction of WH-phrases from within Islands that do or do not have a Resumptive Pronoun (RP). The results suggest that the fronted focus WH is base-generated and binds a resumptive pronoun (RP), thus being insensitive to Islands. The Subjacency constraint is therefore obeyed in this particular construction. This naturally explains the second study, which is a partial replication of Johnson & Newport (1991)'s influential L2 study, suggesting that the amnestying effect of RPs for Island violations in the L1-

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Chinese FCW Construction somewhat facilitates L2-English learners' comprehensions of English WH questions with Subjacency violations when sentences are presented aurally.

The organization of this paper is as follows. Section 2 focuses on Mandarin Chinese. In this section, I first discuss the syntactic properties of the FCW construction, in regard to the question of what is the status of Subjacency Constraints in this construction. Then I explore this through a grammaticality judgment (GJ) experiment that solicited judgments of Chinese sentences from Mandarin speakers. Section 3 presents an L2 experiment on English WH questions with Subjacency violations. In this section, I argue that the less-than-satisfactory Chinese L2 speakers' performance, similar to what Johnson and Newport (1991) obtained, is attributable to some L1 transfer from the Focused Cleft WH structure, the reason for which has never been seriously considered in L2 research.

2. Chinese Focused Cleft WH Construction

The FCW construction raises some interesting questions as to whether the complex FCW sentences involve movement, and whether such dislocation of WH-phrases is subject to syntactic constraints including Subjacency. The first study examines to what extent the WH-phrase can be fronted and clefted to the left peripheral position and still render the sentence grammatical. Before describing the study in greater detail, a literature review is in order.

2.1 Existing work on Chinese FCW construction

Previous research on Chinese WH-questions revolves around the question of whether, as in English, there is WH-movement in Chinese, and if so, at what level. Strikingly, despite a wealth of work on WH in-situ, there are very few studies, albeit only indirectly related, on the FCW construction at issue. Huang (1982) proposed an LF movement analysis for the focus marker SHI, that is, SHI combines with the emphasized element to form a phrase-level focus operator, which is raised to Comp at LF on a par with WH-phrases in Chinese. Following Huang (1982), Shi (1994) also posited an operator movement analysis for focused WH at LF through an examination of the distribution and property of emphatic SHI[1] in the WH-in-situ structure. However, since Huang and Shi do not discuss how their analyses apply to the FCW construction, the question remains whether the focused category binds a gap, or a resumptive pronoun, when the operator consisted of SHI combined with the emphatic WH-phrase is clefted to the initial position. In an attempt to generalize a typology of focus and focus construction, Drubig (2000) proposed two types of focus and focused WH constructions:

(11) Focus Constructions
   a. Type I: Focus$_i$ … t_i …   b. Type II: Focus$_i$ [CP … pronoun$_i$ …   ]

According to Drubig, focus in the Type I construction is an operator undergoing A'-movement, which is subject to locality restrictions. Focus in the Type II construction is base-generated in situ and binds a RP. Such a binding relationship cannot be based on overt movement, since there are no locality effects and the extraction site is occupied by a RP.

To see the applicability of Drubig's analysis to the Chinese Focused Cleft WH construction, it is important to understand the distribution of RPs and gaps in this construction. Since a RP strategy is widely used by languages to salvage constructions in which movement is expected but ungrammatical for various reasons (e.g., Sells 1987 and Shlonsky 1992 for Hebrew; McCloskey 1990 for Irish; Aoun & Li 2003 for Lebanese Arabic), it is worthwhile to investigate whether a RP is also used in the Chinese FCW construction and how it alternates with gap. This is the issue pursued in the next section.

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[1] Shi used the term "emphatic" SHI because the element immediately following SHI is being emphasized. This is correct, as "SHI" and the immediately following emphatic phrase are pronounced with an accent.

2.2 Distribution of Resumptive Pronouns in the FCW Construction

In this section, I will present a grammaticality judgment (GJ) study on island constructions and the interaction between islands and FCW questions, the result of which will reveal the distribution of RPs in FCW construction. Given that the most common WH questions in Chinese are the in-situ forms, judgments to RPs that are embedded in the less common FCW constructions can be rather murky. However, since judgments regarding the distribution of RPs in Subjacency islands are crucial to the questions being investigated here, we conducted a GJ test with a group of Chinese native speakers.

2.2.1 Method
2.2.1.1 Participants

40 native speakers of Mandarin Chinese participated in this experiment.

2.2.1.2 Materials

The crucial stimuli consisted of three types of strong islands: object-modifying relative clauses (OMRCs), subject-modifying relative clauses (SMRCs), and adjunct clauses (AJs). Each strong island contained two types of FCW construction that were based on a declarative sentence (e.g., example 13), and each type of FCW had two variations: a gap or RP. Type 1 refers to the FCW sentences in which WH-phrases are directed towards the noun phrases from within subordinate clauses (e.g. *shuxue wenti* 'math problem'), with either a gap or a RP, as in (14). Note that the English counterpart of Type 1 violates subjacency. Type 2 refers to the FCW sentences in which WH-questions are directed towards the noun phrase from the matrix clause (e.g. *gongshi* 'a formula'), with either a gap or a RP, as in (15). Note the English counterpart of Type 2 is grammatical sentence. Sample OMRC stimuli are given below:

(13) (English translation from Chinese) Bill found <u>a formula</u> [$_{RC}$ that solved <u>the math problem</u>].

(14) Shi shenme (dongxi), Bier zhaodao le   [$_{RC}$ yige   jiejue ta / t de] gongshi]?
   is   what   (thing), Bill find   ASP   one-CL solve it /t DE formula
   'What is it that Bill found a formula that solved ?it /t ?'
   Non-cleft translation: '*What did Bill find a formula that solved?' (English Subjacency violation)

(15) Shi shenme dongxi, Bill zhaodao le [$_{RC}$ yige   jiejue shuxue wenti   de] ta /t?
    Is   what   thing, Bill find   ASP   one-CL solve math   problem DE it/t
    'What is it that Bill found t / it that solved the math problem?'
    Non-cleft translation 'What did Bill find that solved the math problem?

Each of the three island types had nine sentence sets, totaling 36. Each sentence set contained a minimum of 7 sentences: one declarative, three Type 1 extractions (1 Wh in-situ, 1 with a gap, and 1 with a RP), and three Type 2 extractions (1 Wh in-situ, 1 with a gap, and 1 with a RP). All sentences were randomized into four experimental lists, each list consisting of 9 sentence sets. Thus, each participant saw 9 sentence sets.

2.2.1.3 Procedure

Participants rated sentences on a 5-point scale, 1 being very bad, and 5 being very good. For the cut-off points that are adopted in our analysis, 4-5 is a range for grammatical, 1-2 is a range for ungrammatical, 3 is neither grammatical nor ungrammatical.

2.2.1.4 Results

<u>*Type 1 extraction versus Type 2 extraction:*</u>
Figure 1 shows subjects' ratings to Type 1 extractions (which correspond to the English Subjacency violations) for OMRC, SMRC, AJ as well as all the collapsed results. Figure 2 shows ratings to Type 2 extractions (which correspond to grammatical English sentences without Subjacency

violations). In both Figure 1 and Figure 2, for each island condition, three bars are shown, representing In-situ WH sentences, FCW with RP sentences, and FCW without RP sentences.

Figure 1   Ratings to Type 1 Extractions (in-situ, focus cleft wh w/ RP, focus cleft w/o RP) for OMRC, SMRC, AJ and All Combined
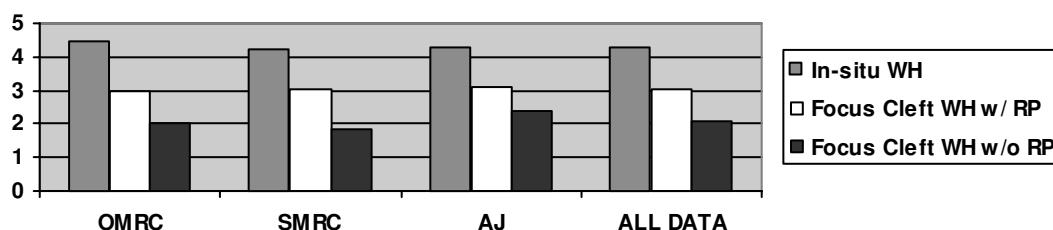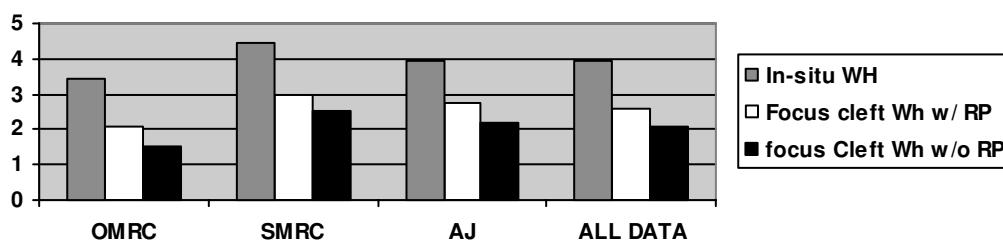

Figure 2 Ratings of Type 2 Extractions for OMRC, SMRC, AJ and All Combined

Two general findings are summarized as follows. First, for both Type 1 and Type 2 extractions, the ratings for canonical WH-in-situ sentences were significantly higher (mean=4.30 for Type 1 and mean=3.94 for Type 2) for all island types than those for Focus Cleft regardless of whether a RP is present or not (p<0.001). This suggests that WH in-situ is the most acceptable way of forming questions. Second, for FCW sentences, those with RPs were rated significantly higher (mean=3.03 for Type 1 and mean = 2.59 for Type 2 extractions) than those without RPs (mean=2.10 for Type 1 and mean = 2.06 for Type 2) (p<0.001) (p < 0.001). This suggests that although the FCW construction is generally rated less acceptable than the in-situ WH questions, those with RPs render them significantly more acceptable, whereas those without RPs degraded their acceptability significantly.

A comparison of the two graphs shows that for the FCW sentences without RPs, those with Type 1 extractions from embedded noun positions were slightly higher (mean=2.10) than those Type 2 extractions from matrix noun positions (mean=2.06). Such a difference does not reach significance (p=0.647). This suggests that regardless of the extraction type, the FCW constructions without RPs are equally ungrammatical. The interesting thing is that these two types of sentences correspond to Subjacency violations and grammatical WH questions in English. However, when we compared the FCW sentences with RPs, those Type 1 extractions from embedded noun positions were rated higher (mean = 3.03) than those Type 2 extractions from matrix noun positions (mean = 2.59). And the difference between the two is significant (p<0.001). This suggests that the amnestying effects of RPs in Focused Cleft Constructions are more robust for the Type 1 extractions, which correspond to Subjacency violations in English.

2.3 Discussion

The overall results seem to suggest the following major points. First, regarding the FCW sentences **without RPs**, participants' ratings for Type 1 extractions (i.e. corresponding to Subjacency violations in English) are as low as the ratings for Type 2 extractions (i.e. corresponding to grammatical WH-questions in English). Second, regarding the FCW sentences **with RPs**, participants'

ratings for Type 1 extractions (i.e., corresponding to subjacency violations in English) are significantly higher than Type 2 extractions (i.e., no- corresponding to Subjacency violations in English). This suggests that the former are more grammatical than the latter in Chinese. Third, participants' ratings to the FCW sentences **with RPs** seem to be significantly higher than those **without RPs**, suggesting that the presence of RPs largely amnesties the unacceptability of the FCWs, particularly when the extractions are from embedded noun positions (i.e. Subjacency violation sentences in English). Given these results, we conclude that the FCW construction in Chinese also obeys the Subjacency constraint, and RPs will more or less reduce the degree of the Subjacency violation. Furthermore, the fact that FCW sentences with gaps are judged to be less acceptable[2], whereas those with RPs are judged as grammatical, supports Drubig's Type II analysis of Focus construction.

Furthermore, the results suggest although FCW constructions are less acceptable than the canonical in-situ WHs, there is an apparent dichotomy in terms of the presence or absence of an RP. Given the same FCW sentences, the presence of an RP leads to higher ratings than when then there is no RP. Crucially, Type 1 extractions from embedded noun positions are rated higher (i.e., more grammatical) than Type 2 extraction from matrix noun positions in Chinese. Note the corresponding English version for the former violated Subjacency, whereas the English counterpart for the latter is a grammatical Wh-question. This is an important pattern, because as will become clear in Experiment 2, it will shed light on the Chinese-L1, English-L2 learners' performance in English sentences with Subjacency violations.

3. Chinese-L1, English- L2 Performance
3.1. Introduction and Aims of Experiment 2

English WH-questions and Chinese FCW constructions share one surface similarity, that is, the WH-phrase occurs in the left peripheral position. It is possible, therefore, to hypothesize that Chinese L2 learners of English process English WH questions by resorting to the FCW construction in their L1, and this is especially so for the beginning learners of L2 English. That is, there might be certain amount of L1 transfer going on for Chinese L2 learners when they understand English WH questions with Subjacency violations. Since the RP strategy largely renders the Chinese FCW sentences more acceptable, beginning learners of L2 English might also apply that strategy to help them understand English WH questions. Furthermore, given that the Type 1 and Type 2 extractions in Chinese FCW constructions correspond to ungrammatical English Subjacency-violation sentences and grammatical English WH questions respectively, the preference to either of the Chinese types of extraction will be hypothesized to be transferred to the L2 English. Given that the amnestying effects of RPs in Chinese FCW constructions are more robust for the Type 1 extraction (i.e., extractions are from embedded noun positions) than for the Type 2 extraction (i.e., extractions from matrix noun positions), we predict that Chinese learners of L2 English will more or less accept English sentences with Subjacency violations, as compared to the grammatical WH sentences.

To test these general hypotheses, we therefore designed the Experiment 2 using Chinese native speakers who learn English as a second language. Before discussing the experimental details, a review of prior studies on Chinese L2 learners' processing of English WH questions is due.

3.2. Existing work on Chinese speakers' comprehension of English WH questions

In Johnson and Newport (1991)'s seminal study, Chinese subjects were asked to provide grammaticality judgments for aurally presented stimuli that contained 3 types of Subjacency violations: noun phrase complement (NP-comp), relative clauses (RC) and WH-complements (WH-comp). To evaluate the possibility that subjects rejected ungrammatical sentences only because WH-movement is hard to process, they designed their stimuli in four forms: declarative, Subjacency violation, grammatical WH control, and no subject-auxiliary inversion. They reported that L1-Chinese performance in English sentences with subjacency violation was significantly worse than native

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[2] The cut-off point of ungrammaticality is 2 on a 5-point scale. The cut-off point of grammaticality is 4.

speakers of English. Even though the participants rated Subjecency sentences as more unacceptable than control sentences, which was taken as evidence for a tendency in adult L2 learners to obey Subjacency constraints, the level of discrimination was very small (d'=0.84 for L2 learners vs. d'=3.89 for native speakers of English). In the paper-and-pencil question-answering test, participants were asked to answer the English WH-questions where the extractions were from embedded noun positions (i.e., ungrammatical questions in English). Johnson and Newport found that Chinese L2 speakers "appear to be better than natives at understanding questions which contain RC subjacency violations" (p. 243), but do not say much about why this pattern arises. If, however, our hypothesis is correct, then this could be explained as a result of unconscious insertion of overt RPs which could help Chinese subjects comprehend those sentences.

White and Juffs (1998) tested two groups of Chinese L2-English speakers, 16 from China and 16 from Canada with timed grammaticality judgment to different English subjacency violation sentences as well as question formation. The results showed that the China group was not significantly different from the native controls, but performed better than the Canada group. It is interesting to note that the two Chinese groups rejected more grammatical WH-movement sentences, or at least the accuracy on the grammatical sentences was lower than on the ungrammatical, Subjacency-violation sentences. White and Juffs did not offer an explanation for this, yet this is predicted by our finding in the Chinese-L1 data.

The assumption that underlies these and other previous studies on Chinese speakers' performance in L2 English is that Chinese learners of English should not demonstrate knowledge of Subjacency constraints, unless UG is still available. This is so because prior theoretical framework states that Chinese does not have syntactic WH-movement, hence may not have derived structures comparable to English Subjacency violation sentences. No prior research has paid attention to the Focused Cleft WH construction, or has noticed the potential explanatory power achieved once this alternative construction is considered. Therefore, out goal in the next study reported below was to try to explain the inconsistent results obtained in the previous research, by replicating Johnson and Newport's original study, but with more explanatory power.

The specific hypotheses to be tested in Experiment 2 are formulated. First, Chinese L2 learners of English will have more difficulty in judging the well-formedness of English WH-questions than declarative sentences, because of structural complexity in the former and lack of movement + Aux Inversion in their L1. Second, Chinese L2 learners of English are predicted to comprehend English via the mediation of the Focused Cleft WH construction in L1, due to its structural similarity to English WH questions, especially when they process linguistic input aurally, since they cannot go back and listen to the auditory stimuli again. Third, the unconscious insertion of an overt RP (in order to understand the English WH-question) will facilitate their online comprehension of Subjacency violation sentences. Fourth, Chinese L2 learners of English will find the supposedly grammatical English Wh-question without Subjacency violations less acceptable, compared with native speakers of English, even if they use the RP strategy.

3.3 Experiment 2 Method
3.3.1 Participants

Twenty-four native speakers of Chinese from a university in Shanghai, P. R. China participated in the experiment in exchange of 50 Chinese yen (about $7). The majority of subjects took the Test of English as a Foreign Language (TOEFL) and scored above 600. Prior to the test, they also responded to a questionnaire about their language background, as well as a cloze test developed by Rutherford at the University of Southern California. Twelve native speakers of American English were also tested.

3.3.2 Procedure

The experiment was a GJ task of aurally presented sentences, in which subjects were asked to rate the stimuli on a 5-point scale. This is where our experiment differs from Johnson and Newport (1991), where only a categorical yes-no option was given.

3.3.3 Materials

A total of 180 sentences was designed. The same conditions were used as in Johnson & Newport (1991), except that our study only focused on three types of strong Subjacency islands as what we used in Experiment 1, specifically, Subject-Modifying RC (SMRC), Object-Modifying RC (OMRC), and Adjuncts (AJ). Each type had twelve sentences, totaling 36. These 36 sentences were presented in the four different versions following Johnson & Newport: A. Declarative (e.g., Bill found a formula that solved the math problem); B. Subjacency Violation (e.g., *What did Bill find a formula that solved?); C. Grammatical WH control (e.g., What did Bill find that solved the math problem?); D. No Subject-Auxiliary Inversion (e.g., What Bill did find that solved the math problem?).

Filler items included 12 simple grammatical WH-questions, 12 that-trace sentences, and 12 complex sentences. All consisted of an equal number of grammatical and ungrammatical sentences. The 72 test sentences (in 4 versions) were counter-balanced and divided into four lists. For each list, 36 test sentences and 36 filler sentences were randomized.

3.3.4 Results

Figure 3 shows Chinese-L1, English-L2 subjects' ratings of the four versions of English sentences for the three Island types (OMRC, SMRC, AJ) as well as all results combined, and Figure 4 shows English native controls' ratings to the same sentences.

Figure 3 ChineseL1, English-L2 Subjects' Ratings for OMRC, SMRC, AJ and All Combined
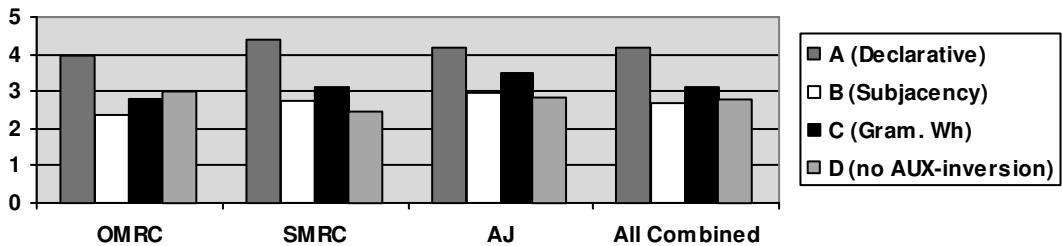
In Figure 3, the Declarative sentences (A) were rated the highest, with an average score of 4.19 for all types of Islands, suggesting that adult L2 speakers correctly accepted declarative sentences as grammatical. However, the supposedly ungrammatical sentences with Subjacency violations (B) and with no Aux-inversions (D), and the supposedly grammatical WH sentences (C) all fall into the range of [2.5 - 3]. This suggests that adult L2 learners seem to incorrectly accept ungrammatical sentences, or correctly accept grammatical sentences only marginally.

An analysis of variance (ANOVA) test for Chinese L2 learners shows significant main effects for A (p=.042), B (p=.039) and C(p=.020), but no such effect for D (p=.073). This suggests that Chinese L2 speakers differed rather significantly in their judgments to different types of English sentences (declaratives, subjacency violations, and grammatical wh-questions). They were more or less uniform in rejecting the D type of sentences without aux-inversion.

Figure 4 English-L1 Speaker Ratings for OMRC, SMRC, AJ and All Combined
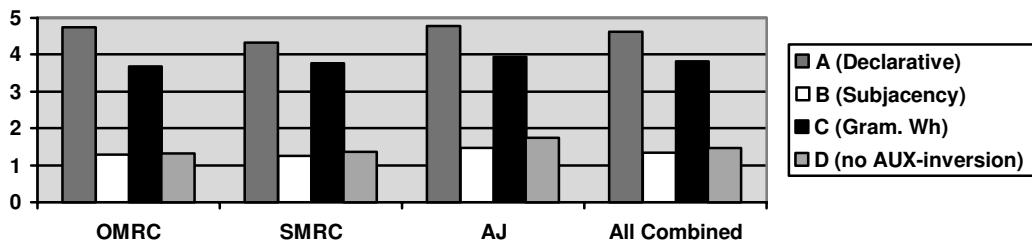
In contrast, the graph in Figure 4 for English native speakers shows clear patterns of ratings to grammatical versus ungrammatical sentences. English controls' ratings for the grammatical declarative sentences (A) and WH questions (C) were quite high, with mean scores of 4.62 for A and 3.81 for B. For the ungrammatical sentences involving Subjacency violations (B) and no Aux-inversions (D), the ratings were very low, with means scores of 1.33 for B and 1.47 for D respectively.

The ANOVA test for native controls shows significant main effects for A (p=.019), but no such effects for B (p=.429) and C (p=.638), and a marginal effect for D (p=.078). This suggests that native speakers did not quite agree with the grammaticality of the declarative sentence, yet they unanimously either reject Subjacency and no-inversion sentences, or accept grammatical WH control sentences. The variations in declaratives might be due to the 'out-of-blue' contexts in which those sentences were stated. The marginal main effects for D indicate that native speakers vary in their ratings to sentences without subject-AUX inversions, particularly so for Adjunct sentences.

Declaratives (A) versus grammatical WH (C)

Both Chinese L2 learners and English native controls judged Declarative sentences (A) acceptable. The mean scores for both individual Island types and combined results from OMRC, SMRC and AJ are above 4 out of 5 as the maximum rating. The grammatical WH sentences (C) were rated lower by Chinese L2 learners (mean=3.14) than by native controls (mean = 4.19). For Chinese L2 speakers across all 3 Island types, the difference between declaratives (A) and grammatical WH sentences(C) is significantly different (p<0.001). This suggests that adult Chinese L2 learners find declarative sentences more acceptable than WH-questions.

Subjacency (B) versus no aux-inversion (D)

This comparison is done for adult L2 learners in order to evaluate the status of the Subjacency constraint as a UG principle and aux-inversion as a language-specific rule. If L2 learners' performance on a language-specific rule is worse than performance on the UG constraint, then it is possible that Subjacency as a UG principle has a more privileged status. If L2 learners' performance on no-inversion sentences is similar or superior to the performance on Subjacency violation sentences, then Subjacency cannot be considered privileged. For all results combined, Chinese L2 speakers rated Subjacency (B) sentences (mean=2.69) as less acceptable than no-inversion sentences (mean=2.79), but the difference between the two is not significant (p=0.261). This suggests that their performance on Subjacency violations is equally bad as on no-inversions. Native controls' ratings of sentences involving Subjacency violations (B) is 1.33 across all 3 types of Islands. The comparisons between Chinese L2 learners' ratings and native controls on B sentences shows that the difference is not significant (p=0.447). This suggests that both L1 and l2 subjects correctly rejected B types of sentences.

Subjacency (B) versus grammatical WH control (C)

For all results combined, Chinese L2 subjects rated Subjacency violation sentences (mean=2.69) lower than grammatical WH control sentences (mean=3.14), and the difference between the two conditions is significant (p<0.001). However, for analyses of individual Island conditions, the difference between Subjacency and WH controls did not differ significantly for OMRC, SMRC, and only significantly differ for AJ. This suggests that Chinese L2 speakers found both Subjacency violations and the grammatical WH control more or less unacceptable, and there is a trend that Subjacency violation is even less grammatical than WH control sentences. For native controls, paired t-tests show a significant difference (p<0.001) between Subjacency and WH controls for different Islands (OMRC, SMRC, AJ). So English native controls consistently rejected ungrammatical sentences with Subjacency violations, and accepted grammatical WH controls.

3.4 Discussions

The overall results suggest that our hypotheses are supported. Importantly, if we concentrate on the WH questions extracted from embedded noun positions (Type 1) and from matrix noun positions (Type 2), and compare the Chinese participants' ratings for English-L2 sentences and Chinese Focused Cleft WH sentences with RPs (i.e., counterparts of English sentences) and without RPs, we can see that some interesting pattern as shown in Figure 6.

1) For the English L2 data, Chinese participants seemed to find both Subjacency violations and the grammatical WH control more or less unacceptable, although there is a trend that Subjacency violation is a bit less grammatical than WH control sentences (see the leftmost bars).

2) For the Chinese L1 data (that is, the FCW sentences), the English counterpart sentences without RPs were rated almost equally low (see the bars in the middle).

3) Yet those focus WH sentences with RPs show an exactly opposite pattern to their English counterparts: ratings to Type 1 extractions (i.e., extractions from embedded noun positions) were higher than ratings to Type 2 extractions (i.e., extractions from matrix noun positions) (see the rightmost bars).

Figure 5 Chinese Speakers' ratings of English WH questions and corresponding ratings of Chinese Focused WH for two types of extractions
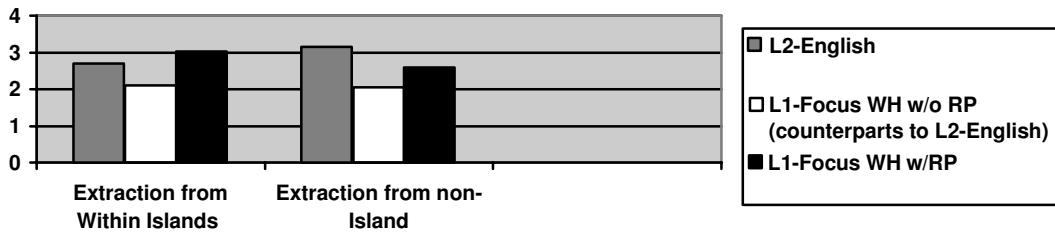
If Chinese L2 learners still have full access to the Subjacency principle, then supposedly they would behave like native controls by rejecting English WH questions with Subjacency violations, while accepting grammatical English WH questions. Yet our experiment only showed a trend that Subjacency violation is a bit less grammatical than WH control sentences. This suggests a partial access to UG principles. If there is a direct transfer from L1 focused cleft WH with RPs, then we would expect to see that L2 English data shows the similar trend. But what we find is that English L2 results as extracted from within Islands and from non-Islands is an exact mirror image of the Chinese L1 result. The reason might be as result of the conflict between the L1 direct transfer and the partial access to UG. That is, on the one hand, Chinese participants parsed the English L2 sentences via the mediation of their grammatical counterparts in L1, which is the Focused Cleft WH with RPs, they comprehended more English sentences with Subjacency violations. This is particularly so when these L2 learners have to process the linguistics input aurally, since they cannot go back and listen to the auditory stimuli again. On the other hand, as advanced-level L2 learners, Chinese participants tried to parse the English sentences by accessing the UG subjacency principle, which correctly informed them what they directly derived from L1 was actually incorrect. The result suggests a slightly strong access to UG.

With L1 transfer, we speculate that when Chinese L2 speakers process sentences in real time, as in the experimental setting of this study with aurally presented stimuli, they might unconsciously insert an overt RP in order to understand the English Wh-question in a timely manner. This will facilitate their online comprehension of English Subjacency violation sentences. This L1-transfer analysis can also successfully explain the result consistently reported in this study as well as from previous studies that Chinese L2 learners seem to be more likely to reject the supposedly grammatical English WH questions than native speakers of English. Simply put, the exact opposite patterns in the L1 Focused Cleft WH construction lead them to do so.

4. Implications of the Findings

Focusing on an alternative WH-question formation construction, this study aims to improve our understanding of possible L1 transfer in L2-English processing, by using the results of Chinese L1 comprehension of Chinese sentences to interpret the Chinese-L1, English-L2 speakers' performance on English sentences with Subjacency violations. It contributes to the existing knowledge of Chinese

WH question constructions, specifically, the Chinese Focused Cleft WH construction that has not been explicitly discussed in the literature. It also furthers our understanding of the Chinese ESL learners' performance in the area of L2 language acquisition.

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