

An ATB account of Chinese bare conditionals

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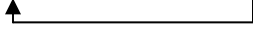
This paper examines so-called ‘bare conditionals’ in Chinese. The salient properties of this construction are: they typically require paired, matching *wh*-words, and they always yield a universal reading (1a-b). While the main accounts of Chinese bare conditionals have analyzed them as cases of unselective binding (cf. Cheng & Huang (C&H) 1996, Chierchia 2000, a.o.), Bruening & Tran (B&T, 2006) has recently proposed a sideward movement analysis (cf. Nunes 2004) coupled with Kratzer (1989) and Heim’s (1990) situation semantics for conditionals. More precisely, B&T have proposed that the *wh*-word in the second clause undergoes sideward movement, and is raised to the first clause with both copies fully pronounced, as in (2). With respect to semantics, they adopt Fox’s (1999, 2002) trace conversion rule, and propose that while the *wh*-word in the first clause is existentially quantified, the copy of this *wh*-word left behind in the second clause is converted into a definite description. Universal force is then attributed to universal quantification over situations, as in (3).

In this paper, I show that both approaches are problematic. Modulo the different interpretations that C&H and Chierchia assign to the *wh*-words, both accounts yield an eventual LF like (4) for sentences like (1a) through unselective binding. A covert necessity operator with universal force is assumed, which unselectively binds the *wh*-words in both clauses. These unselective binding analyses make the following shared predictions: (i) when an adverb of quantification occurs as in (5a), it should replace the universal quantifier (5b), giving rise to the quantificational variability effect (QVE), which is equivalent to the reading in (5a-ii); and (ii) *wh*-words must come in pairs due to the ban on vacuous quantification (cf. Kratzer 1989). Neither prediction is borne out. Prediction (i) is falsified by the fact that (5a) is judged false in (6a). If there were a QVE, (5a) should be judged true, since I hit most of the people (i.e., 900 out of 1300 people) who came in. In fact, (5a) is judged true only in (6b), showing that only a universal, non-QV reading, is available. Prediction (ii) is falsified by sentences like (7), which show that in single *wh*-bare conditionals, the appearance of the subject *wh*-word in the second clause is optional, provided that the matching *wh*-word in the first clause is also in the subject position. B&T’s analysis is also problematic, since it also wrongly predicts the presence of QVE when an adverb of quantification is available. Furthermore, we observe that single and multiple *wh*-bare conditionals both disallow the *wh*-word from occurring in complex NP islands (8-9) or coordinate structures (10-11), whether the *wh*-word appears in the first or second clause. Following B&T’s proposal that the matching *wh*-words in the first and second clauses are derived by sideward movement together with Hornstein & Nunes’s (2002) assumption that sideward movement can take place between small subtrees before the two clauses are fully built (cf. Nunes 2001), it is not obvious how it can account for the ill-formedness of these examples.

Based on these facts, I propose that in both single and multiple *wh*-bare conditionals, the matching *wh*-words undergo Across-the-Board (ATB) movement to Spec-CP at LF, as in (12a-b). This naturally explains the matching requirement on *wh*-words as well as the ungrammaticality of examples with *wh*-words occurring in complex NPs (8-9) or coordinate structures (10-11), which can be attributed to the violation of island constraint or the coordinate structure constraint (cf. Ross 1967). Assuming that *wh*-words in Chinese lack quantification force on their own (cf. Cheng 1991, Li 1992, Tsai 1994), I further propose that the ATB movement is triggered by the universal quantifier situated at the highest Spec-CP, which selectively binds the matching *wh*-words interpreted as variables at LF, giving rise to the semantics in (13a) and (13b) for (12a) and (12b), respectively. This proposal correctly captures the universal reading as well as the lack of QVE.

I conclude with a discussion of single *wh*-bare conditionals with subject deletion. Following Huang’s (1982, 1991) proposal that empty subject in Chinese is a small *pro*, I suggest that omitted subject in single *wh*-bare conditionals should have the same status. I further show that single *wh*-bare conditionals with a small *pro* are also subject to island and coordinate structure constraints, and hence that small *pro* must be able to undergo ATB movement along with the subject *wh*-word in the first clause to Spec-CP at LF, just like cases with an overt *wh*-word, as in (12a). This raises interesting questions for the identity condition on ATB extraction, which I discuss. An important general consequence of the proposed analysis is that it removes yet another domain thought to require unselective binding, continuing the general elimination of these cases begun in Heim (1990).

- (1) a. **Shei** jinlai, wo da **shei**. -- single wh-bare conditional
 who enter I hit who
 ‘Whoever comes in, I’ll hit him.’
 (= ‘I hit all the people who come in.’)
- b. **Shei** yan **shei**, **shei** xiang **shei**. -- multiple wh-bare conditional
 Who play who who resemble who
 ‘Whoever plays whatever role(s), he resembles the role(s).’
 (= ‘All the people resemble the roles they play.’)

(2) [IP [XP **shei** jinlai] [IP wo da **shei**]] (= (1a))

 sideward movement

(3) $\forall s [\exists x. x \text{ is a person \& } x \text{ comes in in } s] \rightarrow [\exists s'. s \leq s' \text{ \& I hit the person } x \text{ in } s']$

(4) $\forall x [x \text{ enters}] \rightarrow [I \text{ hit } x]$

- (5) a. Tongchang, shei jinlai, wo da shei.
 usually who enter I hit who
 i. Non-QV reading: ‘In most occasions, I hit all the people who come in.’
 ii. QV reading: ‘I hit most people who come in.’
- b. MOSTx [x enters] \rightarrow [I hit x]

(6) a. Occasion	A	B	C	D
People who came in	1000	100	100	100
People who came in that I hit	900	0	0	0
b. Occasion	A	B	C	D
People who came in	1000	100	100	100
People who came in that I hit	1000	100	100	0

(7) **Shei** xian lai, (**shei**) xian chi. -- single wh-bare conditional
 who first come who first eat
 ‘Whoever comes first eats first.’

(8) a. *Zhangsan xiangxin [complex NP **shei** tou-le qian de shuofa], Lisi jiu qu daibu **shei**.
 Zhangsan believe who steal-Perf money DE rumor Lisi then go arrest who

b. *Zhangsan huaiyi **shei**, Lisi jiu xiangxin [complex NP **shei** tou-le qian de shuofa].
 Zhangsan suspect who Lisi then believe who steal-Perf money DE rumor

(9) a. ***Shei** xiangxin [complex NP **shei** tou-le qian de shuofa], **shei** jiu qu daibu **shei**.
 who believe who steal-Perf money DE rumor who then go arrest who


b. ***Shei** huaiyi **shei**, **shei** jiu xiangxin [complex NP **shei** tou-le qian de shuofa].
 who suspect who who then believe who steal-Perf money DE rumor

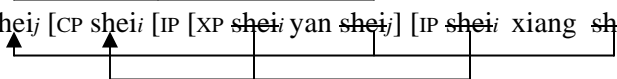
(10) a. *Zhangsan xihuan [coordinate structure **shei** he Mali], Lisi jiu yaoqing **shei**.
 Zhangsan like who and Mary Lisi then invite who

b. *Zhangsan xihuan **shei**, Lisi jiu yaoqing [coordinate structure **shei** he Mali].
 Zhangsan like who Lisi then invite who and Mary

(11) a. ***Shei** xihuan [coordinate structure **shei** he Mali], **shei** jiu yaoqing **shei**.
 who like who and Mary who then invite who

b. ***Shei** xihuan **shei**, **shei** jiu yaoqing [coordinate structure **shei** he Mali].
 who like who who then invite who and Mary

(12) a. [CP shei_i [IP [XP shei_i xian lai] [IP shei_i xian chi]]]. (= (7))


b. [CP shei_j [CP shei_i [IP [XP shei_i yan shei_j] [IP shei_i xiang shei_j]]]]. (= (1b))


(13) a. [$\forall x: x \text{ comes first}$] [x eats first]

b. [$\forall x, y: x \text{ plays } y$] [x resembles y]