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Revisiting donkey anaphora in Mandarin Chinese

A reply to Pan and Jiang (2015)

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In their article published in this journal, Pan and Jiang (2015) challenge the claims and proposals made in Cheng and Huang (1996) concerning both the distributional patterns and interpretive strategies for donkey anaphora in Mandarin conditional. They claim that all three types of conditionals (*rúguǒ*-, *dōu*- and bare conditionals) allow either a *wh*-phrase or a pronoun in the consequent clause, and that both the *wh*-phrase and the pronoun may be either unselectively bound or interpreted by the E-type strategy. We show that, except for an observation already mentioned and accommodated in Cheng and Huang's (1996) analysis of *rúguǒ*-conditionals, their distributional claims are incorrect. It is also shown that the interpretative flexibility they propose is untenable, as it leaves a number of otherwise well-predicted properties unaccounted for.

Keywords: donkey anaphora, Mandarin, bare-, *ruguo*- and *dou*-conditionals

1. Introduction

Cheng and Huang (1996, henceforth C&H) argue for two interpretational strategies for donkey anaphora in different types of conditionals. For C&H, the unselective binding strategy is associated with bare conditionals, while the E-type pronoun strategy is applied in the *rúguǒ*-conditionals and *dōu*-conditions. Pan and Jiang (2015, henceforth P&J) argue that though both strategies are needed, the patterns argued for in C&H are only the default/preferred patterns. Furthermore, the particular interpretational strategy is not associated with particular conditionals. They propose a Bound Variable Hierarchy to account for the distribution of *wh*-phrases and pronouns. They suggest that any deviation of the default patterns requires additional contexts, though the particular contexts often remain vague.

In this paper, we examine the distributional patterns put forth by P&J, as well as the flexible way of interpreting *wh*-phrases and pronouns in their system. As already pointed out in C&H, there are alternations and mixed cases which are restricted. We agree with P&J that *rúguǒ*-conditionals allow *wh*-phrases in the consequent clause. However, we argue that this does not constitute a reason for treating *wh*-phrases as E-type pronouns.

2. The distributional patterns

2.1 Cheng and Huang (1996)

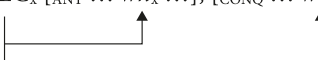
C&H compare conditionals without conditional marker (i.e., bare conditionals) with conditionals headed by *rúguǒ* 'if', showing that in bare conditionals, if there is a *wh*-phrase in the antecedent clause, we also need a *wh*-phrase in the consequent clause. In contrast, in *rúguǒ*-conditionals, a pronoun instead of a *wh*-phrase can appear in the consequent clause, as shown in (1a)–(d) (see C&H for more examples, including those in which the *wh*-phrase in the antecedent clause has a different grammatical function than the one in the consequent clause).

- (1) a. shéi xiān lái, shéi xiān chī (C&H, [12a])
 who first come who first eat
 'If X comes first, X eats first.'
- b. nǐ xǐhuān shéi, wǒ jiù pīpíng shéi (C&H, [14a])
 you like who I then criticize who
 'If you like X, I then criticize X.'
- c. rúguǒ nǐ kàndào shéi, qǐng jiào tā lái jiàn wǒ (C&H, [23b])
 if you see who please tell him/her come see me
 'If you see someone, please ask that person to come see me.'
- d. rúguǒ shéi dào-le ménkǒu, jiù qǐng tā jìnlái
 if who arrive-PERF door.mouth then invite him/her enter.come
 'If someone arrives at the door, please invite him/her to come in.'

Crucially for C&H, in the bare conditionals such as (1a), (b), no other type of noun phrases (including *pro*) can appear instead of the *wh*-phrase in the consequent clause. In the case of *rúguǒ*-conditionals (1c), (d) on the other hand, aside from the pronoun, other definite descriptions such as a noun phrase with a demonstrative as well as *pro* are allowed. However, a *wh*-phrase cannot replace the pronoun.

The data with bare conditionals can be summarized as in (2a), where each clause of the conditional has one *wh*-phrase. Given a configuration such as (2a), a Necessity Operator (NEC) can bind both *wh*-phrases simultaneously (i.e., parallel,

unselective binding), as illustrated in (2b). As the Necessity Operator has universal force, the reading of (2a), (b) would be comparable to (2c).

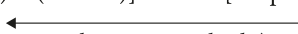
- (2) a. $[_{ANT} \dots wh \dots], [_{CONQ} \dots wh \dots]$
 b. $[_{NEC_x} [_{ANT} \dots wh_x \dots], [_{CONQ} \dots wh_x \dots]]$

 c. $[_{V_X} [\dots x \dots] \rightarrow [\dots x \dots]]$

This analysis assumes that *wh*-phrases are variables (see Cheng 1991); they need to be bound. Furthermore, in (2b), the antecedent clause serves as the restriction of NEC, while the consequent clause serves as the nuclear scope. By appealing to the requirement of restrictive quantification and the constraint against vacuous quantification, C&H ensure that the NEC operator simultaneously binds a variable in the antecedent and one in the consequent clause. Note crucially that, as shown schematically in (2b), the two variables are ‘equal siblings’ bound by a common binder, neither being dependent on (or anaphoric to) the other. This also explains the morphological identity of the *wh*-phrases in a bare conditional.

For *rúguǒ*-conditionals, C&H considers *rúguǒ* ‘if’ to be a licenser for the *wh*-phrase, treating it as a (non-interrogative) existential quantifier with narrow scope internal to the antecedent clause (see Cheng 1991 for details concerning the licensing of *wh*-elements in Mandarin). This frees up the consequent clause to host various types of noun phrases, as summarized in (3a).

- (3) a. *rúguǒ* $[\exists x (x \dots) \wedge (\dots x \dots)] \rightarrow [\dots \text{pronoun} \dots]$
 b. if $[\exists x (x \text{ is a person}) \wedge (x \text{ arrives at the door})]$, then invite [the person who arrives at the door] to come in.

The pronoun in the consequent clause of a *rúguǒ*-conditional is interpreted as an E-type pronoun, which is akin to a definite description referring to “the object(s), if any, which verify the antecedent quantifier-containing clause” (Evans 1980: 340). Under this analysis, the interpretation of (1d) is as in (3b). It is important to note that as a definite description, the pronoun is, in some way, dependent on (or anaphoric to) the *wh*-phrase in the antecedent. This dependency relation prevents the pronoun from being replaced by a *wh*-phrase in the consequent, whose appearance would violate the Novelty Condition (Heim 1982).

- (4) *rúguǒ* $[\exists x (x \dots) \wedge (\dots x \dots)] \rightarrow [\dots \text{pronoun} /*wh- \dots]$

 (dependent on the existential *wh*-)

The third type of conditionals discussed in C&H has to do with cases where the consequent clause hosts *dōu*, which we gloss here as ‘all’, as C&H do, as in (5a).

- (5) a. nǐ jiào shéi jìnlái, wǒ dōu jiàn tā (C&H, [22b])
you ask who enter I all see him/her
‘Whoever you ask to come in, I’ll see him/her.’
b. [... *wh* ...] [... *dou* ...pronoun/**wh*]

In a *dōu*-conditional, a *wh*-phrase cannot be in the consequent clause. Instead, a pronoun, a definite description or a *pro* can appear (as in the schema in (5b), see C&H for more data).

C&H analyze *dōu*-conditionals as containing an embedded question in the antecedent clause, where the *wh*-phrase is an interrogative (hence also existential) quantifier with narrow scope internal to the antecedent clause. *Dōu* triggers universal quantification over the set of propositions (that are true answers) that form the denotation of the embedded question. Thus, just as in the case of *rúguǒ*-conditionals, a pronoun in *dōu*-conditionals is also interpreted as an E-type pronoun. The interpretation of (5a) is indicated in the simplified representation in (6).

- (6) $\forall p ((\exists x (x \text{ a person}) [p = \text{you ask } x \text{ to come in}]) (I \text{ will see him/her in the event of } p))$

The E-type pronoun *tā* is a definite description (i.e., the person *x* that makes {*p*|you ask *x* to come in} true) anaphoric to the interrogative *wh*-phrase, and therefore it also cannot be replaced by another *wh*-phrase, as schematized in (7):

- (7) $[Qx (x \dots) \wedge (\dots x \dots)] \rightarrow [\dots \text{pronoun} /*\text{wh-} \dots]$

 \longleftarrow
(dependent on the interrogative *wh*-)

In brief, C&H put forth two strategies for interpreting donkey anaphora, namely, unselective binding and E-type pronoun. Unselective binding is required and licit in bare-conditionals, where *wh*-phrases appear in both the antecedent and the consequent clauses, as variables bound in parallel fashion and as equal siblings. The E-type pronoun strategy for interpreting pronouns takes place in *rúguǒ*-conditionals and *dōu*-conditionals, where the pronouns (if they appear) are interpreted as definite descriptions referentially dependent (in some way) on the *wh*-phrase in the antecedent clause.

It should be noted that C&H discuss a number of cases with *wh*-/pronoun alternations. In C&H, these are cases where the connective *jiù* ‘then’ is present, as in (8) (data from Yu 1965).

- (8) shéi yào zhè pò-chǎng wǒ jiù ràng gěi tā/shéi (C&H, [57a])
who want this broken-factory I then give to him(her)/who
‘Whoever wants this broken factory, I’ll give it to him/her.’

C&H suggest that the presence of *jìu* ‘then’ signals that these sentences can also be *rúguǒ*-conditionals in disguise: they can involve a non-overt *rúguǒ*. In other words, these sentences have ambiguous structures: they are either a bare conditional with an optional *jìu* ‘then’, or a *rúguǒ*-conditional with a covert *rúguǒ*. The former requires a *wh*-phrase in the consequent clause while the latter may use a pronoun instead.

Another way to put it in C&H’s terms is that while the existence of *jìu* ‘then’ in the consequent signals the existence of (covert) *rúguǒ* ‘if’ in the antecedent, this *rúguǒ* may, but is not obligated to, license a *wh*-phrase in its c-command domain as an existential quantifier. When it does, we have a *rúguǒ* -conditional; when it doesn’t, we have a bare, *wh-wh* conditional. A bare conditional is thus not necessarily entirely ‘bare’ without the presence of *jìu* or *rúguǒ*, but simply one in which the *wh*-phrase in the antecedent is not licensed by anything as an existential quantifier. A true *rúguǒ*-conditional in our intended sense, then, is one in which the *wh*-phrase is so licensed.¹

Under this view just clarified, we expect to have ‘mixed cases’ like (9), as represented in (10):

- (9) shéi xiǎng chī shénme, tā jìu chī shénme (C&H, [61])
 who want eat what s/he then eat what

- (10) $[NEC_y [\exists x(x \text{ is a person}) \wedge (x \text{ wants to eat what}_y)] \rightarrow [\text{he then eats what}_y]]^2$

In (10), the subject *wh*-phrase is interpreted as an existential quantifier; thus in the consequent clause, the subject pronoun is interpreted as an E-type pronoun. The object *wh*-phrases in both clauses are bound by NEC.

2.2 Pan and Jiang (2015)

P&J dispute the distributional patterns in C&H. They claim that the distributional patterns put forth by C&H are the default or preferred patterns. They claim that regardless of which conditional we have, either a *wh*-phrase or a pronoun can appear. The first set of examples put forth by P&J concern cases such as (11),

1. Thus, the term ‘bare conditional’ in C&H is somewhat confusing, as it includes conditionals with *jìu* and (covert) *rúguǒ* that do not license the first *wh*-phrase as an existential. Some recent authors (e.g., Liu 2016, etc.) have adopted the new name ‘*wh*-conditional’. We should also note the limited sense in C&H’s use of a *rúguǒ*-conditional here – it is a conditional with a *wh*-phrase in the antecedent that is licensed by *rúguǒ* as an existential (akin to the way an NPI is licensed).
 2. We abstract away from the fact that all these sentences may additionally involve situation variables that are unselectively bound (Heim 1990). This is not a point of disagreement and so it will not figure in our discussion.

where it is possible to have a (null) pronoun in a bare conditional. More examples are discussed in Section 3.

- (11) Shéi yào zhè pò-chǎng, ràng gěi tā hǎo le.
 who want this broken-factory give to him(her) good PRT
 'Then give this broken factory to whoever wants it.' (P&J's (6a))

The example in (12) (P&J's (7a)) represents a second set of examples by P&J, aiming to show that a *wh*-phrase can be used in the consequent clause of a *rúguǒ*-conditional.

- (12) Rúguǒ shéi yào zhè pò-chǎng, jiù ràng shéi dào bàngōngshì lái
 If who want this broken-factory then let who to office come
 zhǎo wǒ.
 find me
 'Whoever wants this broken factory, let him/her come to my office to see me.'

As for *dōu*-conditionals, they claim that it is possible to have a *wh*-phrase in the consequent clause. The core example used is repeated here in (13).

- (13) Amei shuō: "Gěi shéi kàn, shéi dōu huì shuō wǒ shì
 Amei say give who look who all will say I be
 hǎo-xīn-hǎo-yì."
 good-heart-good-intention
 'Amei said: "Whoever you give to look at (it), s/he will say that I meant well."' (P&J, [8])

Furthermore, if there is deviation from the default/preferred patterns, additional contexts are needed. In other words, according to P&J, the patterns are as in (14).

- (14) a. Bare conditionals
 [... *wh* ...] [... *wh*/pronoun]
 b. *Rúguǒ*-conditionals
 [*rúguǒ* ... *wh*] → [... *wh*/pronoun ...]
 c. *Dōu*-conditionals
 [... *wh* ...] [... *dōu* ... *wh*/pronoun]

In their view, all conditionals allow the first clause to have a *wh*-phrase, and a *wh*-phrase or a pronoun in the consequent clause.

Associated with these distributional claims are the following claims:

- (15) a. The type of conditionals is not linked to an interpretational strategy:
 i. Bare conditionals can also use E-type pronoun strategy.
 ii. *Rúguǒ*- and *dōu*-conditionals can also use Unselective Binding strategy.

- b. Both *wh*-phrases and pronouns can be interpreted by both strategies:
 - i. *Wh*-phrases can be interpreted as E-type pronouns
 - ii. Pronouns can be interpreted as variables.

P&J propose the Bound Variable Hierarchy (BVH) (16) to account for the patterns:

(16) *wh*-phrases/reflexives >> pronoun/demonstratives

The *wh*-phrases are higher on the hierarchy than pronouns, and thus they are preferred bound variables, while pronouns can be interpreted as a bound variable, but they need some contexts for such interpretation.

3. Dissecting P&J's patterns

Recall that for C&H, the main distinction between bare conditionals and *rúguō*-conditionals is that the former involves the NEC (V) binding two *wh*'s, while in the latter the *wh*-phrase in the antecedent clause is an existential quantifier, leaving the consequent clause to host a pronoun. Below we first discuss *rúguō*-conditionals, and show that we agree with P&J in that in *rúguō*-conditionals, both *wh*-phrases and pronouns can appear in the consequent clause. However, our agreement with P&J ends here. We argue that the purported counterexamples put forth in P&J for the generalization concerning bare conditionals or *dōu*-conditionals cannot be maintained.

3.1 *Rúguǒ*-conditionals

What P&J show is that *wh*-phrases are also allowed in the consequent clause of *rúguǒ*-conditionals. (12) is repeated here as (17).

- (17) Rúguǒ shéi yào zhè pò-chǎng, jiù ràng shéi dào bàngōngshì lái
if who want this broken-factory then let who to office come
zhǎo wǒ (P&J, [7a])
find me
'Whoever wants this broken factory, let him/her come to my office to see me.'

This example is in fact similar to the ones in (8)–(9) mentioned above in Section 2.2, which C&H had used to show the possibility of alternation and of mixing between a *wh*-phrase and a pronoun. Similar examples had also been discussed in Lin (1996: 165–166):

- (18) a. Shàng cì shéi méi jiǎng-wán, jīntiān jìu yóu shéi/tā xiān
last time who not talk-finish today then with who/him(her) first
kāishǐ (Lin 1996, p. 217)
begin
‘Today let’s begin with whoever did not finish his talk last time.’
- b. Nǐ zuótiān gēn shéi yī zǔ, jīntiān nǐ jìu hái shì gēn
you yesterday with who one group today you then still with
shéi/tā yī zǔ
who/him(her) one group
‘Lit. You were in one group with who yesterday, you then are still in the
same group as who/he today.’ (Lin 1996, p. 217)

The main point of (17) is that even with an overt *rúguǒ*, a *wh*-phrase may also be used in the consequent. Yet, as P&J also admits, such examples are somewhat marginal. We agree with P&J on this observation. What we need to do is simply make it explicit that even an overt *rúguǒ* is not obligated to license a *wh*-indefinite in its c-command domain (though by default it preferably does so).³ This is in fact a natural state of affairs given that the general well-formedness of *rúguǒ*-sentences does not depend on the occurrence of any *wh*-phrase. Indeed, within the system built up by C&H, it is difficult to block NEC from binding both *wh*-phrases in a *rúguǒ*-conditional such as (17).

What this picture presents to us is that in the case of *rúguǒ*-conditionals, both strategies are possible, sometimes even found within the same sentence (as shown in (9)). This nonetheless does not suggest that *wh*-phrases can be interpreted as E-type pronouns. The generalization is that if the *wh*-phrase is an existential with narrow scope licensed by *rúguǒ* in the antecedent clause, then an E-type pronoun is used in the consequent clause; otherwise it is a variable caught by wide scope NEC, in which case another *wh*-variable is required in the second clause. In neither case is a *wh*-phrase interpreted as an E-type pronoun, nor a pronoun as a bound variable.

3. If the overt *rúguǒ* is uttered with heavy stress, there is a stronger tendency for the *wh*-phrase in the antecedent to be interpreted as an existential, thus making it difficult for a *wh*-phrase to appear in the consequent clause.

3.2 *Dōu*-conditionals

Consider now the example that P&J put forth to show that in *dōu*-conditionals, a *wh*-phrase is also possible in the consequent clause, contra C&H. (13) is repeated here as (19).

- (19) Amei shuō: “Gěi shéi kàn, shéi dōu huì shuō wǒ shì
 Amei say give who look who all will say I be
 hǎo-xīn-hǎo-yì.”
 good-heart-good-intention
 ‘Amei said: “Whomever you give to look at (it), s/he will say that I meant
 well.”’ (P&J, [8])

Recall that in C&H, *dōu*-conditionals involve an embedded question in the first clause, with universal quantification over the sets of propositions associated with the question. Thus, the *wh*-word in the antecedent clause is an interrogative *wh*-word. In the example above, note that the *wh*-phrase in the consequent *dōu*-clause is required to occur to the left of *dōu*, a position in which it is interpreted with (free choice) universal reading, another well-known use of *wh*-phrases. Thus (19) is interpreted as “No matter who you show (it) to, *everyone* will say that I meant well” – *everyone* including (by implication) the *one* that you show (it) to. This straightforwardly explains why it has to occur before *dōu*.

P&J claims that even though *shéi* ‘who’ in the consequent clause can be interpreted as ‘everyone’ in (19), “one still cannot deny the fact that this *wh*-phrase and the *wh*-phrase in the antecedent clause can both be bound by *dōu*.” (p.166). The reason they give is that the pronoun *tā* ‘s/he’ can replace *shéi* ‘who’ in the consequence clause, and so the sentence (19) has the interpretation: “for all the *x*, if letting *x* look at (it), *x* will say I meant well, ...” (p.166).

P&J’s claims here reveal important confusions on their part for which some clarifications are in order. First, the fact that (19) includes an interpretation with a pronoun in place of the universal ‘everyone’ does not mean that the interpretation of the universal is equivalent to that of the pronoun. If it is true that everybody thinks that everybody won a prize then it is also true that everybody thinks s/he won a prize, but this implication does not hold conversely. If *P* implies *Q* but not the other way around, then it is a simple fallacy to equate the two. Secondly, it is misleading to say that in (19) *dōu* binds both *wh*-phrases (so they would be represented by the same index). Rather, what *dōu* does is simply triggering universal quantification (and distributivity in some cases) on an expression to its left. In (19) the presence of *dōu* causes both the whole antecedent clause (with a question semantics) and the subject *shéi* in the consequent clause

to be interpreted as universally quantified.⁴ It does not cause the answerhood set (consisting of propositions) in the antecedent to be coindexed with a human-denoting variable in the consequent clause. Furthermore, they disregard a crucial aspect of C&H's analysis according to which the antecedent clause is an embedded question. This is evidenced by the fact that overt question-selecting elements like *wúlùn* or *bùguǎn* 'regardless of, no matter' can always occur. Furthermore, the antecedent clause can accommodate elements that signal unquestionably the presence of *wh*-interrogation: *wèishénme* 'why', the A-not-A question form (i.e., 'whether'), and the '*wh*-polarity element' *dàodǐ* '(wh-)the-hell' (see C&H, Kuo 1996, Huang & Ochi 2004 for more details).⁵ Under C&H's analysis, the first *wh*-phrase is an existential quantifier with narrow scope internal to the antecedent clause, and the variable it binds is simply unavailable to be bound by *dōu* from outside or to be coindexed with the second *shéi* outside of the interrogative clause.

A further problem for P&J's claim is that it cannot explain why their alleged counterexample must have the second *wh*-phrase occurring to the left of *dōu*. P&J's proposed answer is that a *wh*-phrase after *dōu* must be interpreted as an interrogative, and not as a variable (p.166, footnote 2). Aside from being a mere restatement of the problem, the proposed generalization in fact does not hold. A *wh*-phrase after *dōu* can indeed be interrogative as in (20), but it can also be an

4. The following sentence indicates that *dōu* can license the occurrence of more than one universal quantifier to its left:

- (i) měi-běn shū, wǒmén měi-ge rén dōu mǎi-le.
 every-CL book, we every-CL person all bought-PERF
 'Every one of us bought every book.'

5. The sentence in (i) illustrates the presence of *dàodǐ* '(wh-)the-hell' clearly:

- (i) wúlùn nǐ dàodǐ yào qǔ shéi, nǐ māma dōu bú huì xǐhuān tā.
 No-matter you the.hell want marry who, your mother all not will like him/her.
 'Regardless of who the hell you want to marry, your mother won't like him/her.'

P&J try to offer a representation in which the *wh*-phrase is directly bound by a wide-scope universal quantifier (see their Example (23c), p.179). But the semantic interpretation based on P&J's proposal yields "for all x, no matter you want to marry x-the-hell, your mother won't like x", which is ill-formed, as it violates the S-selection requirement of *no matter* and the co-occurrence requirement of *dàodǐ*.

It should be clear that our discussion is only concerned with cases where the antecedent is a clause containing a *wh*-phrase. There are of course *dōu*-conditionals where the antecedent is a declarative, but such cases fall outside the scope of our discussion of 'donkey anaphora' (For this reason, P&J's discussion (p.178) is not relevant.) The same remark applies to *rúguǒ*-conditionals, where we are only concerned with *rúguǒ*-antecedent clauses that contain a polarity sensitive *wh*-phrase.

existential in a non-veridical context as in (21). It just cannot be used in lieu of a pronoun anaphoric to the preceding *wh*-phrase.

- (20) *tāmen dōu mǎi-le shénme?*
 they all buy-PERF what
 ‘What did they all buy?’
- (21) *tāmen dōu méi mǎi shénme (?)*
 they all not buy what
 a. ‘What did they all not buy?’
 b. ‘All of them didn’t buy anything (in particular).’

All these facts follow from C&H’s account without stipulation, given what we already know elsewhere. As many authors have shown, a *wh*-phrase is licensed as a (free-choice) universal on the left of *dōu*, and an indefinite existential in a non-veridical context (see Li 1992, Lin 1998). Otherwise, by default, it is an interrogative. The fact about (13) is that the second *wh*-phrase must occur to the left of *dōu* because it needs to be licensed as a (free choice) universal with an implied meaning anaphoric to the first *wh*-phrase, as explained above. A post-*dōu wh*-phrase is in fact well-formed if it is not anaphoric to the first *wh*-phrase, as in (22):

- (22) *(bùguǎn) nǐ yào tā mǎi shénme, tā dōu bù xiǎng mǎi shénme.*
 regardless you want him buy what, he all not want buy what
 ‘Regardless of what you want him to buy, he will always not want to buy anything (in particular).’

Or if *dōu* does not quantify over the antecedent clause as an embedded question, as in a bare conditional that contains a *dōu* in the consequent clause:

- (23) *shéi xiān lái, jiù dōu ràng shéi xiān chī.*
 who first come, then all let who first eat
 ‘For all x, if x comes first, then always let x eat first.’
- (24) *shéi de zhèngjiàn hǎo, wǒmen jiù bǎ piào dōu tóu gěi shéi.*
 Who DE platform good, we then BA ballots all cast to who
 ‘For all x, if x’s political platform is good, we will cast all the ballots for x.’

In (23), *dōu* quantifies over the adverbial of time (meaning ‘always’) and in (24) it quantifies over *piào* ‘ballots’. So these are not *dōu*-conditionals in the intended sense of C&H. In both cases the entire sentence is a bare conditional with parallel binding of two *wh*-variables, neither being anaphoric to the other. These sentences are possible because *dōu* does not have to trigger universal quantification over the *wh*-containing clause, so the *wh*-phrase may be left free and caught by NEC in the making of a bare conditional. This is not unlike the bare conditionals

in the presence of *rúguǒ*, which can, but does not have to, license a *wh*-phrase as an existential.

To conclude, C&H's claim is that in a *dōu*-conditional with an interrogative antecedent clause, the consequent clause cannot contain a *wh*-phrase anaphoric to the *wh*-phrase in the antecedent clause. The evidence adduced by P&J and their discussion pose no challenge to this claim.

3.3 Bare conditionals

P&J claim that in bare conditionals, it is possible to use a pronoun (overt or null), instead of a *wh*-phrase in the consequent clause. We repeat their examples below as they form their core arguments (from P&J, [(6a)–(6d)]).

- (25) a. Shéi yào zhè pò-chǎng, ràng gěi tā hǎo le.
 who want this broken-factory give to him(her) good PRT
 'Then give this broken factory to whoever wants it.'
- b. Shéi yào zhè pò-chǎng, ràng tā dào bàngōngshì lái zhǎo wǒ.
 who want this broken-factory let him/her to office come find
 me
 'Whoever wants this broken factory, let him/her come to my office to see me.'
- c. Shéi xiǎng qù Běijīng, [e] bīxū/yíding-děi/yíding-yào dào wǒ zhèlǐ bàodào
 who want go Beijing must to me here register
 'Whoever wants to go to Beijing, s/he must register with me.'
- d. Shéi xiǎng qù Běijīng, [e] qǐng dào wǒ zhèlǐ bàodào.
 who want go Beijing please to me here register
 'Whoever wants to go to Beijing, please register with me.'

P&J dismiss a reviewer's suggestion that (25a)–(d) involve a rhetorical question in the first clause, because the second clause cannot be used as an answer to the question in the first clause. Nonetheless, they admit that the second clause in (25a)–(d) all "have the flavour of an imperative sentence" (p.165), and this imperative nature constitutes their notion of extra context in deviating from the default/preferred pattern.

We think that the suggestion from the reviewer is dismissed too easily. Rhetorical questions are not questions that require answers (see Sadock 1971 and Han 2002 among others). In fact, they have the illocutionary force of an assertion. Furthermore, the sentences in (25) probably do not involve a question-answer sequence, but rather a (rhetorical) question, continued by a suggestion/an imperative. (25) may be paraphrased as (26):

- (26) a. Who wants this broken factory? Let's give it to him/her!
 b. Who wants this broken factory? Let him/her come to my office to find me!
 c. Who wants to go to Beijing? [You] must register with me!
 d. Who wants to go to Beijing? [You] please register with me!

The sentences in (26c)–(d) are quite compatible with a scenario in which there is a huge crowd of people going to different directions, and you can say these sentences, and the missing subject is in fact directed to the addressee, i.e., you. In (26a)–(b), the pronoun can be interpreted as an E-type pronoun, as is also true for their English counterparts. These sentences are thus *not* bare conditionals.

It is useful to note that all the examples in (25) are longer than the average example of bare conditionals C&H have used. This clearly facilitates the question + suggestion construal of the sentences. This is further evidenced by the fact that, with a pronoun in the consequent, these sentences are pronounced with a suitable intonation contour, with a pause between the two clauses. Because of this, each of these sentences gets even better when a pause particle, like *a*, is inserted after the first clause.

P&J claim that all the examples in (25) are bare conditionals with a bound pronoun because each of the pronouns can be replaced by a second *wh*-word matching the *wh*-word in the first clause. In other words, they consider [_{ANT} ... *wh* ...] [_{CONQ}... *pro* ...] to be on a par with cases where both the antecedent and the consequent clause contain a *wh*-word, as in [_{ANT} ... *wh* ...] [_{CONQ}... *wh*...]. However, we discern an important prosodic difference: when a second *wh*-word is used instead of a pronoun, the whole sentence must be pronounced as a compact unit, with no pause or any pause particle like *a* following the antecedent clause. This means that the sentences with matching *wh*-words in the antecedent and consequence clauses are punctuated differently, and have different syntactic structures. In particular, we claim that (25a), as a rhetorical question followed by a suggestion, would be appropriately punctuated as in (26a) – with a question mark and an exclamation mark. However, once the pronoun in (25a) is replaced by *shéi* ‘who’, the resulting sentence is no longer a rhetorical question followed by a suggestion, but rather a *true* bare conditional that cannot be punctuated as in (26a). A more appropriate structure would be (27), as indicated below, according to which the bare conditional is embedded as a sentential subject of the main verb *hǎo-le*:

- (27) [[*Shéi yào zhè pò-chǎng, ràng gěi shéi*]] *hǎo le*.
 Who want this broken-factory give to who good PRT
 ‘Ok, it’s all right that “For all x, if x wants this broken factory, give it to x”’

To conclude this section, we have shown that true bare conditionals require matching *wh*-phrases in the antecedent and consequent clauses. The examples in (25)

from P&J are not true bare conditionals. They involve E-type pronouns, i.e., definite descriptions, which refer “to the object(s), if any, which verify the antecedent quantifier-containing clause” (Evans 1980: 340). In each of the cases at hand, the “antecedent quantifier-containing clause” is a *wh*-interrogative clause.

4. Interpreting *wh*-phrases and pronouns

As indicated in (8b), P&J not only claim that the conditionals cannot be distinguished by having *wh*-phrases or pronouns in the consequent clause, they also claim that *wh*-phrases and pronouns are in fact *not* distinguished as to whether they are interpreted as variables or as E-type pronouns. In other words, they claim that *wh*-phrases can be interpreted as E-type pronouns, and pronouns can be interpreted as unselectively bound variables.

Much of P&J's view about this ‘interpretive flexibility’ is driven by their claim that pronouns and *wh*-phrases are interchangeable (not only in the consequent clause of *rúguǒ*-conditionals, but also in that of *dōu*-conditionals and bare conditionals). As indicated above (Section 3.1), the possibility of using either a pronoun or a *wh*-phrase in a *rúguǒ*-conditional is compatible with C&H's analysis, according to which sentences with a *rúguǒ*-antecedent can take an E-type pronoun if the antecedent *wh*-phrase is licensed by *rúguǒ* as an existential, or a *wh*-variable if it is left open to be caught by NEC. These are precisely the two possibilities predicted and there is no reason to allow an E-type pronoun to be unselectively bound, nor a *wh*-phrase to be interpreted as an E-type pronoun. Furthermore, as we have shown, it is not true that an E-type pronoun may be replaced by a *wh*-phrase in the consequent clause of a true *dōu*-conditional (Section 3.2), nor can a *wh*-variable be replaced by an E-type pronoun in a true bare conditional (Section 3.3). If what we have demonstrated is correct, then the foundation of P&J's claim about the ‘interpretive flexibility’ simply collapses. In their paper, P&J offer other specific arguments for their view, and we shall take them up now.

4.1 Interpreting *wh*-phrases

C&H follow Cheng (1991) in claiming that *wh*-phrases are indefinites, and they can be treated as variables (following Heim 1982). P&J do not dispute the claim that *wh*-phrases can be variables. What they propose is that *wh*-phrases can also be interpreted as E-type pronouns. The crux of their argument is that in sentences where the preferred reading points to only one person with the relevant property, “the E-type pronoun strategy should be used to interpret *shei* in the consequent

clause.” (p.173) The data they use to argue for this are repeated in (28) (their [(16a)–(c)]).

- (28) a. Zuótiān shéi mǎi-cuò-le dàngāo, wǒ jiù fá shéi de qián.
yesterday who buy-wrong-PERF cake I then fine who de money
‘Who bought the wrong cake yesterday, I will fine him/her.’
- b. Dān děng Lǐ Laosān huí lái shuō shì shéi, jiù hé shéi pīn-mìng.
only wait Li Laosan return say be who then with who fight-life
‘(People) are just waiting for Li Laosan to come back to identify that someone (who did some bad thing), and then fight with him/her for life.’
- c. Shéi zuò-cuò-le shì, pīpíng shéi hǎo le. Búyào shuō wǒ.
who do-wrong-PERF thing criticize who OK PRT don’t scold me
‘Whoever did things wrong, you criticize him/her. Don’t scold me.’
‘Someone did things wrong, you criticize him/her. Don’t scold me.’

In these examples, according to P&J, the default interpretation is that there is one person who bought the wrong cake, did bad things, or did something wrong. P&J assume that since an E-type pronoun is a definite description, it is more suitable to interpret the *wh*-phrase in the consequent clause in such cases as an E-type pronoun, which “refers” back to the *wh*-phrase in the antecedent clause.

This assumes that the E-type pronoun strategy and the unselective binding strategy are divided in terms of one-case vs. multi-case conditionals respectively, with the one-case conditionals carrying a uniqueness presupposition. This connects to a known-debate in the literature concerning E-type pronouns, notably one-case vs. multi-case conditionals, see Kadmon (1987), Heim (1990) and Lin (1996) among others. Heim (1990) particularly argues that if conditionals do not just quantify over worlds or times, but rather situations, then the objection concerning the uniqueness presupposition connected to E-type pronouns goes away. Lin (1996) further argues along the lines of C&H that bare conditionals have the unselective binding strategy, and that the uniqueness comes from either the context of use or some material from the restrictive clause (p.247).

Furthermore, we would like to point out that though (28a)–(c) may be interpreted as involving one individual, the interpretation of the sentences takes into consideration the range of possible *identities* of the individual. In other words, it is the identities of the individuals that are being universally quantified over under C&H’s account. Take (28a) as an example, it may be clear from the context that only one person bought the wrong cake, the sentence states that whoever that person is (out of a potential list of possible candidates, or simply of all human beings), the person with the identity that satisfies the antecedent clause will also satisfy the consequent clause. In other words, this alleged existence of “one-case” conditional under unselective binding is misconceived.

Another problem that must be given serious attention is the morphological identity requirement in bare conditionals. Consider again (1a), repeated here as (29a). (29b) shows that the *wh*-phrase *shéi* ‘who’ in the consequent clause cannot be replaced by *shénme rén* ‘what person’.

- (29) a. *shéi xiān lái, shéi xiān chī*
 who first come who first eat
 ‘If X comes first, X eats first.’
 b. **shéi xiān lái, shénme rén xiān chī*
 who first come what person first eat
 Intended: ‘If X comes first, X eats first.’

It should be noted that replacing *shénme rén* ‘what person’ with *nǎ-ge rén* ‘which person’ does not improve the grammaticality of (29b). In contrast, in the case of pronouns, they can be replaced by DP such as *nà-ge rén* ‘that person’, not requiring morphological identity, as shown in *rúguǒ*-conditionals (30a), (b) ((1d) is repeated as (30a)).

- (30) a. *rúguǒ shéi dào-le ménkǒ, jiù qǐng tā jìnlái*
 if who arrive-PERF door.mouth then invite him/her enter.come
 ‘If someone arrives at the door, please invite him/her to come in.’
 b. *rúguǒ shéi dào-le ménkǒ, jiù qǐng nà-ge rén jìnlái*
 if who arrive-PERF door.mouth then invite that-CL person enter.come
 ‘If someone arrives at the door, please invite that person to come in.’

If *wh*-phrases can be interpreted as E-type pronouns in bare conditionals, not only is it unclear why *wh*-phrases such as *shéi* ‘who’ cannot be replaced by *shénme rén* ‘what person’ or *nǎ-ge rén* ‘which person’, it is also not clear why their presence cannot be optional, as in most of the pronoun cases.

The morphological identity of the *wh*-phrases in bare conditionals is ensured in C&H because of the fact that both *wh*-phrases are simultaneously and directly bound by NEC; they are equal siblings, neither depending on, or anaphoric to, the other. Thus, they have identical forms.⁶

6. In recent years a few semantic studies (particularly Liu 2016, Xiang 2016) have treated bare conditionals as involving two embedded questions whose interpretations are mediated by answerhood operators in such a way that a sentence can be interpreted as saying that the answer to the antecedent-qua-question would also be an appropriate answer to the consequent-qua-question. While this is an interesting new approach, we shall not discuss it here, inasmuch as our paper is a reply to P&J, who follow C&H in assuming unselective binding for the bare conditionals. We shall simply point out here that, unless some mechanism of simultaneous binding is assumed, the question-and-answerhood approach will fall short of capturing the morphological identity requirement.

A further problem in allowing the matching *wh*-phrase to be interpreted as an E-type pronoun is that it would lead to a violation of the Novelty Condition (Heim 1982), which prevents an indefinite noun phrase from occurring as an anaphoric element.⁷

4.2 Interpreting pronouns

C&H argue that pronouns are not unselectively bound as variables in Mandarin, and therefore they can only be interpreted as E-type pronouns. P&J on the other hand, argue that pronouns can also be unselectively bound as variables. The data that P&J put forth are the purported bare conditionals in (25), where they claim that the pronouns can also be used in the consequent clauses, as well as the alternation and mixed cases in (9a), (b) above. The reasoning they have, again, has to do with their assumption that there is a correlation between bound variable interpretation and multi-case interpretation (or between E-type interpretation and one-case interpretation). But as we have pointed out above, there is in fact no such distinction, so there is also no particular motivation for positing that pronouns can be interpreted as bound variables in multi-case scenarios.

The biggest problem of claiming that pronouns can be bound variables in bare conditionals is the prediction that we can put two pronouns in bare conditionals, or *rúguǒ*-conditionals for that matter, and generate the same readings as the typical bare conditionals, or *rúguǒ*-conditionals. However, as shown in (31), this prediction is not borne out.

- (31) a. tā xiān lái, tā xiān chī
 s/he first come s/he first eat
 ‘If he comes first, he eats first.’
 NOT: ‘If X comes first, X eats first.’
- b. rúguǒ tā dào-le ménkǒu, jiù qǐng tā jìnlái
 if s/he arrive-PERF door.mouth then invite him/her enter.come
 ‘If he arrives at the door, please invite him/her to come in.’
 NOT: ‘If X arrives at the door, please invite X to come in.’

P&J might attribute the impossibility of (31) to get variable interpretation by saying that pronouns are low on the hierarchy of being interpreted as bound variables.

7. We take the Novelty Condition to be a natural condition that prevents an *anaphoric* element from occurring in the form of an indefinite, as in the case of E-type anaphora. But in the case of bare conditionals with parallel binding of variables that are equal siblings, there is no reason to expect either sibling to be more novel or familiar than the other, so the Novelty Condition is simply irrelevant. (It should be noted that in Heim (1990) the donkey pronoun in English was already interpreted as E-type.)

Extra context is needed. One of the extra contexts which can license such a reading concerns cases where the purported consequent clause has an imperative. However, if we change the *wh*-phrase in the antecedent clause to a pronoun, the variable reading goes away, as shown in (32).

- (32) a. *tā yào zhè pò-chǎng, ràng gěi tā hǎo le.*
s/he want this broken-factory give to him(her) good PRT
i. If s/he wants this broken-factory, let's give it to him/her.
ii. Does s/he want this broken-factory? Let's give it to him/her.
NOT: Let's give this broken factory to whoever wants it.
- b. *tā xiǎng qù Běijīng, [e] qǐng dào wǒ zhèlǐ bàodào.*
s/he want go Beijing please to me here register
i. If s/he wants to go to Beijing, please register with me.
ii. Does s/he want to go to Beijing? Please register with me.
NOT: 'Whoever wants to go to Beijing, please register with me.'

These examples show that the claim that pronouns can be bound variables cannot be maintained. If, following P&J, pronouns can be directly bound by NEC as bound variables, it is unclear how the impossible readings of (32a), (b) can be blocked.

5. Conclusion

Based on the discussion above, we conclude that the distributional generalizations concerning the donkey sentences in Mandarin Chinese are as follows. There are two types of donkey sentences:

- (33) a. Type I Donkey sentences
Wh-Wh conditionals: [_{ANT} ... *wh*₁ ...] [_{CONQ} ... *wh*₂ ...]
- b. Type II Donkey sentences
Wh-pronoun conditionals: [_{ANT} ... *wh*₁ ...] [_{CONQ} ... pronoun ...]

Type I is found in bare conditionals, which optionally take *jìu* 'then' in the consequent clause, and marginally with *rúguǒ* in the antecedent clause. Type II is found with *dōu*-conditionals and *rúguǒ*-conditionals with *jìu*.

Type I cases must be *wh-wh* conditionals because of the nature of the *wh*-phrases, interacting with NEC (regardless of whether the situation variable is present or not), with both being bound by NEC. Type II cases are possible in *rúguǒ*-conditionals because the *wh*-phrase can be an existential quantifier. (NEC can be present to bind the situation variables, leaving the pronoun being interpreted as an E-type pronoun.) In *dōu*-conditionals, we also maintain the analysis

in C&H where the first clause is an embedded question, and the pronoun is interpreted as an E-type pronoun.

To restate the generalizations, the crucial factor that distinguishes between the two types of donkey sentences is whether the *wh*-phrase in the antecedent clause is licensed as a (narrow-scope) existential quantifier or not. This is the case when it is so licensed by an overt (or covert) *rúguǒ*, or when it is licensed by [+Q] as an interrogative, as in a *dōu*-conditional, or as in situations exemplified in (25). In all these cases we have a Type II donkey sentence, whose consequent clause may optionally contain an E-type pronoun (or a definite description, or neither). When the antecedent *wh*-phrase is otherwise not so licensed, we have a Type I donkey sentence. This happens when there is no appropriate licenser (neither *rúguǒ* nor [+Q]), or when *rúguǒ* optionally does not license it as an existential. The *wh*-phrase is 'bare' and left as a free variable that is caught by NEC by default, and independent principles ensure the existence of an identical *wh*-variable in the consequent.

We have shown that the flexible interpretation of *wh*-phrases and pronouns yields the wrong predictions. We also argue that the purported counter-examples with a *wh*-phrase in a *dōu*-clause or a pronoun in an bare conditional are not true cases of *dōu*-conditionals or bare conditionals.

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