Non-at-issue Meanings of Mandarin Conditional Connectives

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Kratzer's (1986) restrictor analysis of conditional sentences and conditional connectives has inspired many insightful follow-up studies through which it becomes clear that the interpretation of conditionals can be affected by co-occuring expressions. What remains understudied are CCs, even though they can influence the interpretation of conditionals in various ways. In this paper, we will argue with distributional observations and experimental evidence that Mandarin CCs can express different degrees of speaker commitment (Giannakidou and Mari 2015), or speaker credence, towards the antecedent proposition.

Initial observations: While Chao (1968) claims that Mandarin CCs such as *ruguo, yaoshi, jiaru, wanyi* differ in terms of hypothetical probability about the condition, Lü (2004) argues that these words do not differ in this aspect. Our novel observations are: First, it is odd to use *jiaru* in contexts with supporting evidence for the truth of the antecedent (1a). Second, it is odd to use *jiaru* or *wanyi* in premise conditionals where the hearer accommodates the antecedent (1b). Third, *wanyi* cannot be used in counterfactual conditionals, (1c).

In comparison, *wanyi* differs from the other three CCs in its morphological made-up. Luo and Xu (2012) argue that *wanyi* changed from a Num-phrase *wanfenzhiyi* 'one of ten thousand' through intermediate steps into a conditional marker indicating low probability for the conditional antecedent. Our search in the BCC (http://bcc.blcu.edu.cn/lang/zh) corpus shows that the conditional antecedents with *wanyi* typically have negative connotations, sometimes co-occurring with evaluative adverbs e.g. *buxing* 'unfortunately' (2a). When the antecedent is desirable, it adds a non-at-issue meaning to the sentence that the speaker takes the antecedent as highly unlikely – non-at-issue, because it does not affect the conditional probability. Accordingly, it is odd to use *wanyi* for a conditional antecedent that is both desirable and likely for the speaker (2c). Putting the factor of desirability aside, we will first focus on the speaker's epistemic commitment. Based on the data above, we assume that Mandarin CCs convey different degrees of speaker commitment towards the antecedent in this (non-entailment-based) scale: less committed*<wanyi, jiaru, yaoshi/ruguo>*more committed

Experiment: We tested the validity of the scale using a 4 x 2 factorial design with the factor 'CC' (i.e. *ruguo, yaoshi, jiaru* and *wanyi*.) and 'NPI' (i.e. with/out *renhe* 'any'). The NPI factor was included to test the cross-linguistic validity of the NPI effect found by previous studies for NPIs such as *ever/at all* in English and German. However, we used *renhe* 'any', as there are no NPI counterparts for *ever/ at all* in Mandarin.

Subjects read scenarios consisting of 4 sentences (S1-S4) presented one by one: S1 sets the context; S2 contains a conditional sentence with 8 combinations; S3 asks the subjects to rate the degree of the protagonist's commitment to the antecedent on a 5 point Likert scale (1 = 'certainly not', 5 = 'certainly yes'). S4 is a comprehension question (with a yes/no answer) for attention check. 32 test scenarios such as (3) were used with 48 filler scenarios. The dependent variable was the ratings for S3. The predictions concerning S3 were that the rating would be lower with *wanyi* in S2 than with the others and that the rating would possibly be lower with *renhe* in S2 than without. The experiment was set up with Ibex Farm (spellout.net/ibexfarm/). 56 students of Nanjing University took part in the experiment online. We used data of 54 subjects whose accuracy rate on the comprehension question was above 80%. We performed a linear mixed effects analysis of the data using R. The model used CC and NPI (with interaction term) as fixed effects. The random effects were intercepts for subjects and items, as well as by-subject random slopes for the effect of CC*NPI. As the result reveals neither an interaction nor an effect of NPI, we will only discuss the first four conditions without NPIs (see Table 1 for the descriptive statistics): Here, neither *jiaru* nor *yaoshi* differed from *ruguo* whereas *wanyi* differed from *ruguo* significantly (β=-0.21,t=-2.80, p=0.005). This partially confirmed the scale above.

Analysis: Our experiment shows no evidence for the difference in speaker commitment between *jiaru* and *ruguo/yaoshi*, but it provides evidence for the difference between *wanyi* and the other CCs. To account for the data in (1)/(2) and from the experiment, we propose that *jiaru* (literally 'hypothetically if') presupposes the lack of objective evidence for the truth of the antecedent: It is odd in (1a)/(1b)

due to presupposition failure. It is fine in (1c) as counterfactuality (i.e. by the counterevidence for the antecedent) is compatible with its presupposition. As this presupposition acts at a different level other than that of subjective belief, it does not affect the speaker's epistemic commitment, and thus, *jiaru* did not differ from *ruguo* or *yaoshi* in this aspect. We propose that *wanyi* triggers a secondary content that acts at a separate layer of doxastic or bouletic states, i.e. 'λP.unlikely/undesirable(P,x)', with P being the antecedent of a conditional and with x as a free variable (typically x=Speaker). By this analysis, the degradedness of *wanyi* in premise conditionals (1b) is due to epistemic inconsistency, i.e., the speaker can't accommodate the antecedent while expressing a negative bias towards it. The degradedness of *wanyi* in counterfactual conditionals (1c) might be due to a semantic redundancy, i.e. the antecedent is false and due to *wanyi* held not to be likely. The relation between the unlikelihood or undesirability meaning component is not entirely clear to us, except that one of them needs to be fulfilled, see (2c).

Conclusion: This study shows that CCs can differ in their pragmatics, despite their null semantics as proposed in the restrictor analysis.

(1)   a. A: *wo zuotian kanjian ni-laogong he ge nüde chifan.*
                   (I saw your husband with a woman in a restaurant yesterday.)
        B: ***ruguo/yaoshi/wanyi/#jiaru** ta you waiyu, wo jiu he ta lihun.*
                   (If he is having an affair, I will divorce him right away).
        b. A: *ni-laogong you waiyu le!*
                   (Your husband is having an affair!)
        B: ***ruguo/yaoshi/#wanyi/#jiaru** ta you waiyu, wo jiu he ta lihun.*
           (If he is having an affair, I will divorce him).
           c.   ***ruguo/yaoshi/jiaru/#wanyi** wo shi nade, wo buhui jiehun.*
           (If I were a boy, I won't marry.)
(2)   a. ***wanyi** duizhang buxing shoushang, women zhineng quxiao bisai.*
           'If the captain, unfortunately, get injured, we can only cancel the game.'
           b. ***wany**i dedao le zhenai, yiding yao haohao zhengxi.*
           'If you got true love, you should cherish it greatly.'
           c. ***#wanyi** wo zhaodao yijia haochi de canting, wo jiu qing pengyoumen chifan.*
           if we find a good restaurant, we will then invite our friends to go eat there.
(3)   **S1:**   *Nana you yi tai jiu diannao.* ('Nana has an old computer.)
        S2:   *Ta xiang: "**ruguo** ta you **(renhe)** yingjian huaile, wo jiu song qu xiu."*
                   ('She thinks, "If it has (any) broken hardwares, I will have it fixed."')
        S3:   *Nana renwei diannao you yingjian huai le ma?*
                   ('Does Nana think the computer has broken hardwares?')
        S4:   *Nana you yi tai xin dian nao ma?* ('Does Nana has a new computer?')

Condition	CC	rating	sd	se
1	ruguo	3.32	0.81	0.06
2	jiaru	3.29	0.87	0.06
3	yaoshi	3.28	0.79	0.05
4	wanyi	3.10	0.92	0.06

Table 1. Descriptive Statistics for Data without NPIs

Selected References:
Chao,Y.R. 1968. *A Grammar of Spoken Chinese.* // Giannakidou, A. and A. Mari. (2015). Future and Universal Epistemic Modals: reasoning with nonveridicality and partial knowledge. // Kratzer, A. (1986). Conditionals. // Luo, Y. and H. Xu. (2012). On the Grammaticlization of "wanyi" and Related Issues. // Lü, S. (2014). *The Complete Works of Lü Shuxiang.* Beijing: Shangwu Yingshuguan.