Competition and the choice of referring expressions in Chinese and English
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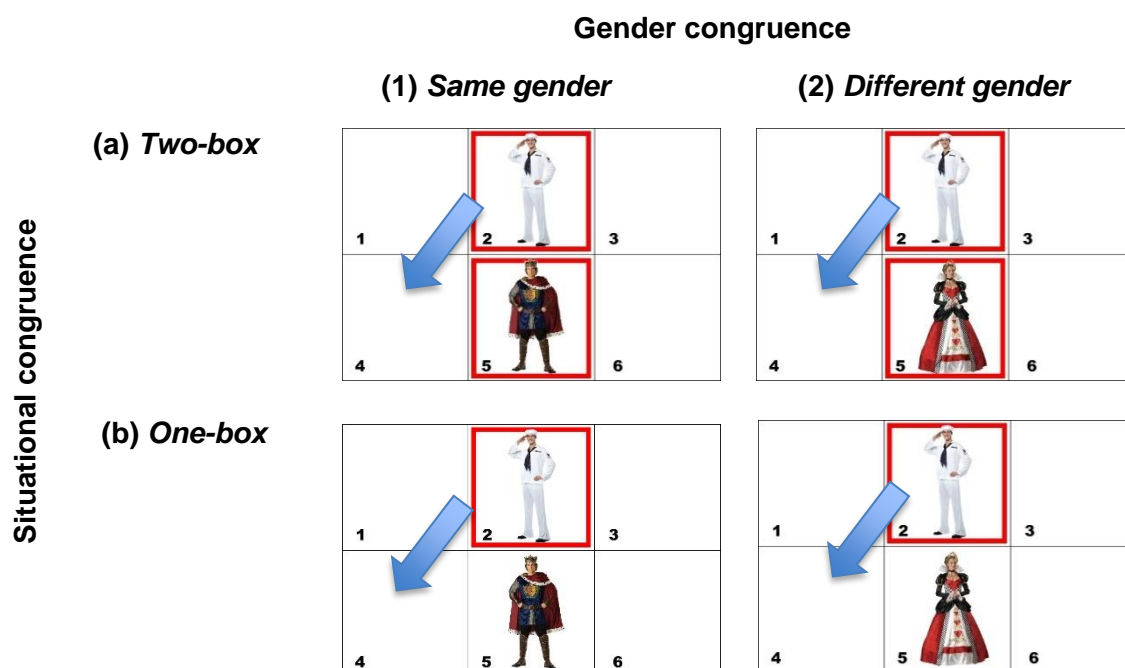shi.zhang@stir.ac.uk

Research has shown that speakers use fewer pronouns when the referential candidates have the same gender than when they have different genders, not only in English (e.g., Arnold & Griffin, 2007), where pronouns are gender-marked, but also in Finnish (Fukumura et al., 2013), where pronouns are non-gendered. Such findings led to the proposal that the referents' gender congruence affects the pronoun choice because the gender congruence increases their similarity, enhancing competition between the referents, which in turn reduces the pronoun use. However, whether the referents' gender congruence affects the pronoun use in a null pronoun language has been controversial. Zhou et al. (2019) reported that gender congruence led to fewer overt (but not null) pronouns in Mandarin Chinese, while Hwang (2018) failed to find such an effect in Cantonese. Moreover, the rates of Italian null pronouns, which do not overtly express the referents' gender, have been shown to be affected by the referents' situational similarity, but not their gender congruence (Fukumura et al., 2018, 2019).

The current study thus examined whether and how gender congruence between two human referents and their situational similarity might differentially influence the pronoun choice in Mandarin Chinese and English. In a referential communication task, participants first saw a visual display of two characters and read a context sentence (1-2). Participants then saw another display, where the target character changed location. Participants described this change to an addressee (3), who then identified the target referent and its new location. The characters either had the same gender (1a & 1b) or different genders (2a & 2b). The situational similarity was manipulated using the visual context: In the two-box condition (a), both characters were in red boxes, signaling to participants that either could move; in the one-box condition (b), only the target was in a red box, signaling that only the target could move.

Experiment 1 examined the choice of overt pronouns (*ta* "she/he"), null pronouns and repeated nouns in Mandarin. A logit mixed effects model found a main effect of situational similarity on the rates of null pronouns and repeated nouns ($ps < .05$); participants produced fewer null pronouns and more repeated nouns in the two-box condition than in the one-box condition. However, neither gender congruence nor situational similarity affected the rates of overt pronouns. Experiment 2 examined the choice of pronouns and repeated nouns in English. A main effect of gender congruence and a main effect of situational similarity ($ps < .01$) indicated that participants produced fewer pronouns in the same gender condition than in the different gender condition, and fewer pronouns in the two-box condition than in the one-box condition. There was no interaction, and gender congruence led to fewer pronouns in both box conditions. In addition, Experiment 3 examined the effects of situational similarity and gender congruence in written Mandarin, where pronouns are gender-marked as in English. We found that not only situational similarity but also gender congruence led to fewer overt pronouns ($p < .05$) in written Mandarin, indicating that speakers of Chinese are sensitive to the gender ambiguity of the pronoun when it is gender-marked.

In sum, in Mandarin, the referents' situational congruence, but not their gender congruence, led to fewer null pronouns and more repeated nouns, but the rates of overt pronouns were unaffected by any variable, suggesting that speakers of Chinese are sensitive to competition due to the referents' situational congruence (albeit depending on pronoun type), but gender congruence does not cause competition in Chinese. In English, both gender and situational congruence led to fewer pronouns and more nouns. Our finding in Mandarin contrasts with previous findings in Mandarin (Zhou et al., 2019) and in Finnish (Fukumura et al., 2013) that gender congruence led to fewer overt non-gendered pronouns. Meanwhile, our results are in keeping with the findings that situational congruence, but not gender congruence, led to fewer null pronouns in Italian (Fukumura et al., 2018, 2019).

Example visual display

Gender congruence

| | (1) *Same gender* | (2) *Different gender* |

(a) *Two-box*

(b) *One-box*

Situational congruence

Example context sentences:

Same gender condition   (1) *Guowang shangfang de shuishou zai erhao wei.* (Chinese)
         The sailor above the king is on number 2. (English)

Different gender condition (2) *Wanghou shangfang de shuishou zai erhao wei.* (Chinese)
         The sailor above the queen is on number 2. (English)

Example target responses:
        (3) *Xianzai* **shuishou/ta/∅** *zai sihao wei.* (Chinese)
         Now **the sailor/he** *is on number 4.* (English)

Results (32 subjects, 40 items per experiment)

		Mandarin (Experiment 1)		English (Experiment 2)		Mandarin (Experiment 3)	
		Same Gender	*Different gender*	*Same gender*	*Different gender*	*Same gender*	*Different gender*
Two-Box	*Nouns*	63.10%	62.50%	76.20%	54.80%	90.25%	87.42%
	Pronouns	16.40%	14.80%	23.80%	45.20%	6.60%	8.81%
	Null Pronouns	20.50%	22.70%	NA	NA	3.14%	3.77%
One-Box	*Nouns*	57.20%	59.10%	66.80%	49.00%	85.81%	82.28%
	Pronouns	18.60%	16.40%	33.20%	51.00%	10.00%	13.29%
	Null Pronouns	24.20%	24.50%	NA	NA	4.19%	4.43%