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Revisit *de re* presuppositions

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Abstract. This study investigates the availability of *de re* interpretations for presuppositions embedded under attitude predicates in Mandarin Chinese. While previous work has proposed substitution-based mechanisms to account for *de re* readings, I argue instead for a unified account grounded in accommodation. A picture-assisted acceptability judgment experiment tested four presupposition triggers in Mandarin: *ye* ('also'), *buzai* ('no longer'), *jiu* ('only'), and *yishidao* ('realize') under varying belief contexts. The results show that only *ye* and *buzai* allow *de re* readings in contexts where the subject either denies or is ignorant of the presupposed content. These two triggers are also used flexibly in contexts that do not fully entail their presuppositions. Together, these findings challenge substitution-based accounts and instead support a two-step accommodation process: an initial Weak Commitment Assumption (WCA), followed by a context-sensitive strengthening. I argue that *de re* presupposition is best understood as a function of contextual accommodation, rather than substitution.

Keywords. presupposition; *de re*; attitude predicates; Mandarin Chinese; accommodation; belief projection

1. Introduction. A presupposition is an implicit meaning that a speaker assumes the listener will take for granted when making an utterance. Unlike assertions, which must contribute new information, presuppositions are typically treated as backgrounded assumptions that remain constant whether a sentence is affirmed, negated, or questioned. For example, sentence (1) presupposes that Mary has a brother. Even if the sentence is negated or questioned, as in (2), the presupposition that Mary has a brother still holds. This persistence of presuppositions across different embeddings is known as "presupposition projection", the phenomenon where a clause's presuppositions survive within more complex linguistic structures.

(1) Mary's brother is a student.
↪ Mary has a brother.

(2) a. Mary's brother is not a student.

b. Is Mary's brother a student?
↪ Mary has a brother.

However, research on presuppositional expressions under attitude verbs like *believe* and *want* reveals complex inference patterns. When a presupposition trigger is embedded under such verbs, it typically implies that the subject believes the presupposed content, a phenomenon known as "belief projection", as illustrated in (3). This effect is robust across embedding environments, as shown in (4), where the subject's belief in the presupposition persists even under negation,

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questions, or conditionals. Moreover, attempts to explicitly deny the subject's belief in the presupposition often result in infelicity, providing further evidence for belief projection (Blumberg & Goldstein 2023).

(3) John believes that Bill stopped smoking.
↪ John believes that Bill used to smoke.

(4) a. John doesn't believe that Bill stopped smoking.

b. Does John believe that Bill stopped smoking?

c. If John believes Bill stopped smoking, he will be happy.
↪ John believes that Bill used to smoke.

(5) # John believes that Bill never smoked before and that Bill stopped smoking.

Based on the evidence from (4-5), the belief projection view (Karttunen 1974; Heim 1992) posits that sentences of the form *x A* S_p, where *x* is the attitude holder, *A* is the attitude predicate, and S_p is the embedded clause containing presupposition *p*, presuppose that *x* believes *p*. This view predicts that similar projection behavior should occur with other attitude verbs, such as *want*. Indeed, this prediction holds, as (6) gives rise to the inference that John believes Bill used to smoke instead of that John wants Bill to have smoked.

(6) John wants Bill to stop smoking.
↪ John believes that Bill used to smoke.

However, it was observed that belief projection does not always hold. That is, presuppositions need not always be satisfied within the attitude holder's beliefs (e.g., Heim 1992; Tonhauser et al. 2013). For example, Heim (1992) points out that presuppositions triggered by *again*, *too* and *even* needn't constrain a subject's beliefs. For instance, consider Mary's response in (7):

(7) Context: John and Mary are talking to each other over the phone.
-John: I am already in bed.
-Mary: My parents think I am also in bed.

According to arguments for belief projection, Mary's response should only be acceptable if her parents believe there is a conversationally salient proposition suggesting that someone other than Mary is in bed. However, Mary's response remains felicitous even if her parents do not believe that John or anyone else is in bed. Nonetheless, such a *de re* interpretation of presuppositions is subject to certain constraints. Specifically, when the common ground entails that the attitude holder does not believe the presupposed content, the *de re* reading seems to be unavailable, as shown by the infelicity of (8).

(8) Context: John and Mary know that Mary's parents think John and Mary competed for one job position. But in fact, there are two job positions.
-John: I got the job.
-Mary: # My parents think I also got the job! Adapted from Heim (1992)

It is also worth asking whether the *de re* interpretation is available for all presuppositional expressions. At least in the case of *only*, which presupposes its prejacent, forcing a *de re* reading seems odd, as illustrated in (9).

(9) Context: Mary passed the exam. Mary's parents don't know whether Mary passed or not. But they believe that John didn't pass the exam.
"Mary's parents believe that only Mary passed the exam."

However, a pilot survey I conducted shows that empirical judgments about the *de re* reading of presuppositions in examples (7-9) vary across speakers, likely because the contexts are not fully specified and speakers may implicitly enrich them in different ways. In what follows, I first review the substitution theory of *de re* interpretation, outlining its predictions and limitations for presuppositions in Section 2. Sections 3 and 4 present a picture-assisted naturalness judgment experiment conducted in Mandarin Chinese to empirically investigate the availability of *de re* readings across different presupposition triggers under various belief contexts. In the discussion section, I argue that the observed variation across triggers challenges purely substitution-based accounts and motivates a view based on accommodation. Finally, I propose a two-step accommodation mechanismthe Weak Commitment Assumption followed by subsequent strengtheningas a unified explanation for the licensing of *de re* presuppositions, before concluding in Section 6.

2. Substitution Theory. Under the substitution theory framework, the *de re* reading is the result of substitution mechanisms (Schwager 2009; Sudo 2014; Percus 2020; Benbaji-Elhadad 2023; Mayr & Schmitt 2024). Briefly, the substitution theory allows an element α in an intensional context to be replaced with another element β if some equivalence condition holds of α and β in the matrix world.

Specifically, Percus (2020) suggests that there is a silent element *R*(eplace) that can optionally adjoin to the prejacent of an attitude. *R* takes a free variable over propositions as its first argument, and the prejacent of the attitude as its second argument. It then replaces the prejacent with the contextually valued proposition if the truth of the prejacent is at issue, and it is presupposed that the prejacent is true as long as the first argument proposition is. For example, in the context presented by (10), the variable p_7 in (11) is resolved to the proposition that flight AF62 has arrived. Since the attitude prejacent that Mary has arrived is at issue and that flight AF62 has arrived contextually entails that Mary has arrived, the substitution conditions are met. The *de re* construal of (10a) is equivalent to the *de dicto* construal of (10b).

(10) Context: Mary is on flight AF62. Sue and Carol want to know if she arrived. Sue asks John, who works at the airport but does not know Mary is traveling, whether flight AF62 landed. He says he believes it has. Sue reports to Carol:

a. John thinks that Mary has arrived.

b. John thinks that flight AF62 has arrived.

(11) John thinks that [R p_7 [Mary has arrived]]

Benbaji-Elhadad (2023) further gives a formal definition of the operator *R*. He assumes the standard approach (Percus 2000) which posits that syntactic world variables bound by λ-abstractors locate under every intensional operator and above matrix sentence. In an attitude report with the syntax in (12), *R* is on the lowest clause. *R* takes a world *w*, a free variable *p*, and

the prejacent *q*, and replaces *q* with *p* as long as two conditions hold: (i) *p* does not logically entail *q*; (ii) there exists a proposition *r* distinct from *q* true in *w* and *r* together with *p* logically entail *q*. A binding condition on *R*'s world argument *w* is assumed, which posits that *w* cannot be bound locally by the λ-abstractor immediately dominating it.

(12) $[\lambda_i ...[\text{ATTITUDE } \lambda_j ...[\text{ATTITUDE}' \ \lambda_k[[R(w_{i/j/*k})(p_7)][q]]]]]$

(13) $[\![R]\!]^{g,c} = \lambda w \lambda p \lambda q \lambda w' : (p \not\subseteq q) \wedge \exists r \not\subseteq q[r(w) \wedge p \cap r \subseteq q].p(w')$

The substitution theory with *R* operator makes correct predictions for individual *de re* construals and narrow-scope transparent construals. Furthermore, it allows replacement of any presuppositional prejacent with its presuppositionless variant, as long as the presupposition holds in the context of the utterance. As in (14), suppose the additive presupposition that someone other than Mary is in bed holds in the discourse context, the presupposition together with the non-presuppositional variant *Mary is in bed* entails *Mary is also in bed*. Therefore, *R* can replace the presuppositional prejacent *Mary is also in bed* with its non-presuppositional counterpart *Mary is in bed*.

(14) John is in bed. Marys parents think [*R* p_1 [Mary is also in bed]]

Mayr & Schmitt (2024) proposed constraints on replacement. They observe that replacement is allowed as long as (i) a suitable replacement concept is salient in the context, and (ii) the QUD-constraint is satisfied, that is, the resulting interpretation for the sentence as a whole resolves the QUD in the same way that the sentence without replacement would[1]. The constraints are motivated by the examples in (15). In context of (15a), we can replace *Ann* with *the person dancing with Eve* to get the *de re* construal. However, in the context of (15b) where the QUD is changed to a different one, answering the QUD with a *de re* interpretation is degraded. The distinction lies in that in (15a), both *Joe thinks that Eve is involved with Ann* and *Joe thinks that Eve is involved with the person she was dancing with* resolve the QUD "Does Joe think that Eve is single?" negatively, whereas in (15b) that *Joe believes Ann was at the party* rather than that *Joe believes the person dancing with Eve was at the party* resolves the QUD "Does Joe know that Ann was at the party?".

(15) a. Context: Joe and Bob went to a party. Ann and Eve were among the guests. Bob knows Ann and Eve. He didnt see them together at the party, but is certain they are a couple. Joe recognizes Eve, but not Ann (and does not think Eve knows Ann). He saw them dancing with each other and thinks Eve and the person she danced with are lovers. There was debate about Eves relationship status. No one else has an opinion about it. We are discussing if Joe thinks that Eve is single.
"Joe thinks that Eve is involved with Ann."

b. Context': [...] We are discussing who Joe thinks was at the party.
#"Joe believes that Ann was at the party."

[1] According to Mayr & Schmitt (2024), p and q resolve P in the same way iff for some $c \in P$, $p \subseteq c$ and $q \subseteq c$, where a QUD is treated as a partition P of the logical space W such that for each $w \in W$ there is a cell $c \in P$ such that $w \in c$ and there is no $c' \neq c$ such that $w \in c'$ (Groenendijk & Stokhof 1984).

Notice that this constraint is largely trivial when it comes to applying replacement to presuppositional content. Presuppositions are typically considered non-at-issue and, as such, do not generally address the QUD. For instance, in (16a), it is odd to answer a question by presupposing a positive response; similarly, in (16b), it is generally odd to use the accommodated content to answer the question[2]. In other words, in a presuppositional sentence S_p, it is always the at-issue component S that addresses the QUD. Therefore, a presuppositional sentence and its non-presuppositional counterpart invariably resolve the QUD in the same way.

(16) a. A: Did Ann go skiing?
B: # John goes skiing, too.

b. A: Do you have a sister?
B: # I picked up my sister at the airport.

The substitution theory predicts that any non-presuppositional content S in an intensional context can be replaced with a presuppositional counterpart S_p provided they share the same assertion and the presupposition p holds in the matrix world. However, this prediction is too permissive and requires further refinement. It must rule out cases like (8), where the attitude holder does not accept the presupposed content. Additionally, it remains empirically unclear whether all types of presuppositions can support a *de re* interpretation. For instance, under the context provided in (17), interpreting *Bill believes that only Lizzie went camping* as *Lizzie went camping and Bill believes Patrick and Luke didnt go* feels odd. However, the judgment varies among the speakers I consulted. The following section presents a pilot experiment aimed at establishing an initial empirical landscape regarding variation across presupposition triggers.

(17) Context: We know that three of our friends-Patrick, Lizzie, and Luke-were planning to go camping. However, Bill only heard from Patrick and Luke about the plan, and he doesnt know that Lizzie was also included. We know that Lizzie eventually went camping, but were unsure whether Patrick and Luke did. We're now discussing what Bill believes.
%"Bill believes that only Lizzie went camping".

3. Experiment on *de re* presuppositions. A picture-assisted naturalness judgment task was conducted to examine the availability of *de re* interpretations for different presuppositions in Mandarin Chinese.

Four different triggers were selected for testing: additive particle *ye* ('also'), change-of-state particle *buzai* ('no longer'), exclusive particle *jiu* ('only'), and factive predicate *yishidao* ('realize').

The target sentence is of the form *x juede* S_p ('x believes S_p'), where *x* is the attitude holder, S is the assertion, and *p* is the presupposed content.

[2] The accommodated content may naturally answer the question when the answerer assumes the answer should have already been known by the questioner, for example:

- A: Do you have a sister?
  B: You met my sister yesterday! (Buccola, p.c.)

In other words, the presupposed content is not genuinely accommodated; rather, the answer serves as a reminder to the questioner of the common ground they should have already assumed.

Due to the complexity of the context setting, each discourse is depicted in four scenes. In each discourse, there are three participants: A, B, and *x* who is the attitude holder. Four conditions of context are created: (i) [B(ELIEVE)]: the common ground knowledge between A and B entails *x*'s belief on *p*; (ii) [I(GNORE)]: the common ground knowledge between A and B entails *x*'s ignorance of *p*; (iii) [D(ENY)]: the common ground knowledge between A and B entails *x*'s denial of *p*; (iv) [N(ULL ATTITUDE)]: the common ground knowledge between A and B does not entail *x*'s attitude on *p*. In the first scene, A and B together asks *x* a question *whether p?*, and *x* replies with a positive answer in [B] condition, a negative answer in [D] condition, reports her ignorance of *p* in [I] condition, and does not give an answer in [N] condition. In the second scene, B excuses to leave. In the third scene, A and *x* continue talking, and *x* reports her belief in S. In the last scene, A and B meet again, and A reports *x believes* S_p in [B] condition, and reports *p, and x believes* S_p in [I], [D] and [N] conditions. The stimuli of each condition are exemplified in Figure. 1-4.

Figure 1. Sample stimuli for *ye* ('also'): [B(ELIEVE)] condition

For each presupposition trigger type, four different context stories (s_1, s_2, s_3, and s_4) were created. These stories share the same discourse structure but differ in the names of the discourse participants and the described activities (e.g., being selected for a scholarship, passing an exam, etc.). Each story was adapted into four versions corresponding to the experimental conditions, resulting in a total of 16 stories per trigger. These 16 stories were then divided into four groups, with each group containing all four conditions but using different stories to avoid repetition within any group. Since four triggers were tested, each group contained 16 trials (4 triggers $\times$ 4 conditions).

Each participant was randomly assigned to one of the four groups. They read each story scene by scene, with one scene appearing on the screen at a time. In the final scene, a blank was

Figure 2. Sample stimuli for *ye* ('also'): [I(GNORE)] condition

Figure 3. Sample stimuli for *ye* ('also'): [D(ENY)] condition

Figure 4. Sample stimuli for *ye* ('also'): [N(ULL ATTITUDE)] condition

	Condition	Group 1	Group 2	Group 3	Group 4
trigger	[B]	s_1	s_4	s_3	s_2
	[I]	s_2	s_1	s_4	s_3
	[D]	s_3	s_2	s_1	s_4
	[N]	s_4	s_3	s_2	s_1

Table 1. Division of the stimuli

presented to be filled in. At the bottom of the screen, two response options were available: one visible option displaying the target sentence in the form *x juede ('think')* S_p, and one hidden option. Participants were instructed to select the hidden option only if they found the visible sentence unnatural. The 16 trials assigned to each group were presented in randomized order. Because the trigger types differ and function as natural fillers for one another, no additional filler items were included. In total, each participant tasked on 16 trials.

Condition [B] serves as a baseline. Since the presupposed content *p* is always true within the attitude holder *x*'s belief, the target sentence *x juede ('think')* S_p should be perfectly natural.

The experiment was implemented via PsychoPy. 80 Mandarin Chinese native speakers were recruited online and randomly assigned to one of the four groups. Each group contains 20 participants. Participants are mostly university students from Beijing and Tianjin. Each was paid $2 as compensation.

4. Results. To assess whether participants' judgments varied by experimental group, trigger type, and context condition, a generalized linear mixed-effects analysis was conducted using the *glmer* function (Bates et al. 2015) in R. The binary outcome variable was participants judg-

ments (0 = choose the visible option, meaning the presuppositional target sentence is natural; 1 = choose the covered option, meaning the presuppositional target sentence is unnatural), modeled with fixed effects for group, trigger, and context, as well as their interactions, and a random intercept for subject to account for repeated measures. A likelihood ratio test comparing the full model (*judgment* $\sim$ *group* + *trigger* $\times$ *context* + *(1 | subject)*) to a nested model excluding group (*judgment* $\sim$ *trigger* + *context* + *trigger:context* + *(1 | subject)*) confirmed that group had no significant effect on participants judgments, $\chi^2(3) = 0.56$, $p = .90$. I therefore collapsed across groups in subsequent analyses. To investigate the effects of presupposition trigger type

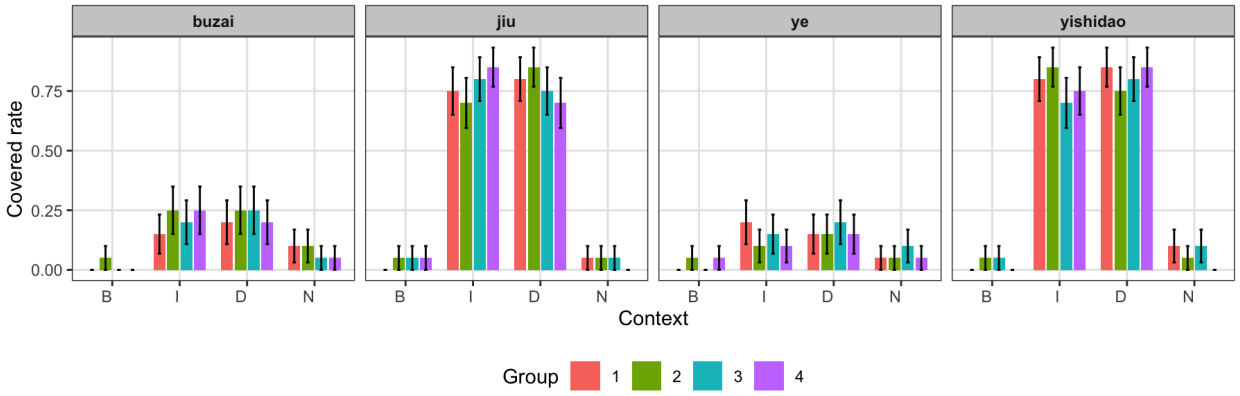

Figure 5. Mean selection of covered options by Group, Trigger, and Context

and context on acceptability judgments, a generalized linear mixed-effects model was fit with trigger, context, and their interaction as fixed effects, and random intercepts for subjects (*judgment* $\sim$ *trigger*$\times$*context* + *(1 | subject)*). The model revealed a significant main effect of context, with both [D] (*estimate* = 3.13, $z = 3.01$, $p = .003$) and [I] (*estimate* = 3.06, $z = 2.94$, $p = .003$) yielding significantly higher judgments relative to the baseline context [B]. The effect of [N] was marginal (*estimate* = 1.85, $z = 1.70$, $p = .0895$). No main effects of trigger were found (all $p >$ .33). However, the model revealed a substantial interaction between trigger and context, with several trigger-context combinations diverging significantly from the baseline. To further explore this interaction, post hoc pairwise comparisons were conducted using estimated marginal means with Tukey adjustment for multiple comparisons.

In contexts [B] and [N], all triggers yielded low ratings on covered options (log-odds $<$ -2.5), and no significant differences were observed among them (all $p > .95$), indicating uniformly low rate on selecting the covered option. In contrast, both [D] and [I] significantly increased choice on covered options, particularly for the triggers *jiu* and *yishidao*. In context [D], *jiu* (emmean = 1.25) and *yishidao* (emmean = 1.48) were significantly more acceptable than *buzai* (emmean = -1.25) and *ye* (emmean = -1.65), with all contrasts yielding $p < .0001$. A similar pattern emerged in context [I], where *jiu* and *yishidao* (both emmean = 1.25) again significantly received more rate on covered options than *buzai* (emmean = -1.32) and *ye* (emmean = -1.85) did, all $p < .0001$. Notably, no significant difference was found between *jiu* and *yishidao* in either [D] or [I], suggesting similar context sensitivity for these two triggers.

5. Discussion. The results show that there is variation among different trigger types in whether the *de re* interpretation is available for presuppositions. When the context entails the attitude

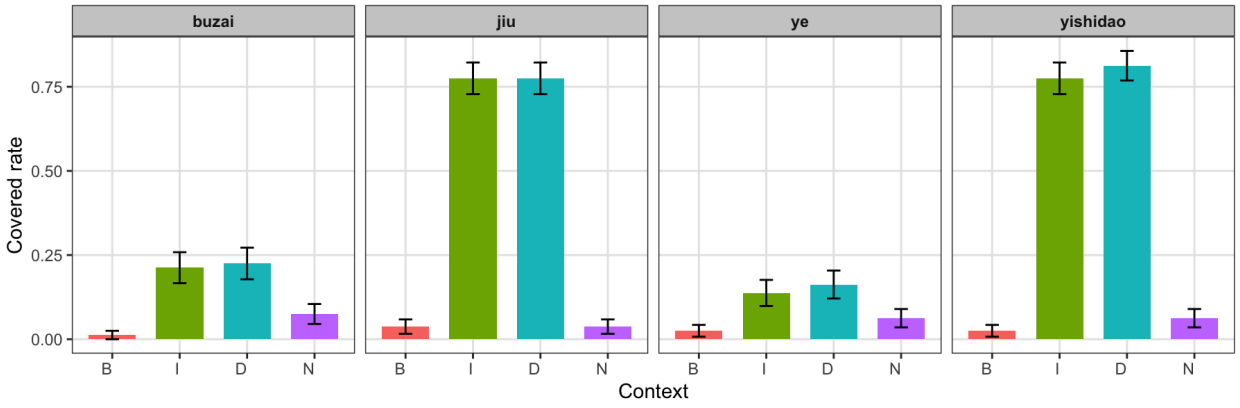

Figure 6. Mean selection of covered options by Trigger and Context

holder's ignorance or objection to presupposition, only *buzai* ('no longer') and *ye* ('also') are able to receive the *de re* reading, while *jiu* ('only') and *yishidao* ('realize') are not. This poses a challenge for the substitution theory of *de re*, as it must introduce additional constraints to account for the variation in the availability of *de re* readings across different presupposition triggers.

Before presenting my explanation for the results, I would first like to mention an independent finding on *de re* predicates. Sudo (2014) discusses a pair of examples as shown below. In (18a), the context does not explicitly mention that Mary does not know that Sue is Catholic, the *de re* construal is available; while in (18b), the context explicitly entails that Mary does not think Percus' brother is Canadian, the *de re* reading of the target sentence is thus not licensed.

(18) a. Context: Being an ignorant atheist, Mary cannot distinguish different branches of Christianity, and in her mind all Christians are simply Christians, although she knows that there are different groups and that Catholicism is one of them. One day, she heard that our religious friend, John, recently started dating a girl named Sue. Because of his religious orientation, she concluded that John's new girlfriend must belong to the same denomination as him, but she doesn't know which. We know that John is a devout Catholic.
"Mary thinks that Sue is Catholic." (Sudo 2014)

b. Context: Mary thinks that Pierre, a Canadian, is Percus' brother, and since Percus is American, she concludes that he is American, too.
#"Mary thinks that my brother is Canadian." (Percus 2000)

Sudo suggests that the distinction can be explained by the accommodation process. People are always willing to accommodate whenever they can, but they do not accommodate contradictory beliefs. This assumption is dubbed as Default Assumption in (19).

(19) Default Assumption: Unless mentioned otherwise, assume that the attitude holder shares beliefs with the conversational participants.

In (18b), it is not mentioned Mary's beliefs in the intension of being a Canadian. According to the Default Assumption, comprehenders assume that Mary knows being Canadian is distinct

from being American, just as assumed by the common ground. Following the *de re* rule in (20), *being Canadian* can only be interpreted as *being American* if $\forall w' \in Dox_w(mary)[[\![being\ Canadian]\!](w') = [\![being\ American]\!](w')]$. Since we assume $\forall w' \in Dox_w(mary)[[\![being\ Canadian]\!](w') \neq [\![being\ American]\!](w')]$, ***being Canadian*** cannot be interpreted as ***being American***, that is, (18b) only has a *de dicto* reading. As a consequence, the sentence in (18b) leads to oddness.

(20) *de re* rule: If there is a function ξ of type $\langle s, \tau \rangle$ that is contextually equivalent to $[\![E]\!]$, then $[\![E]\!]$ can optionally be interpreted as ξ; where two funtions ξ and ζ are contextually equivalent in context C, if for all $w \in C$ and for all w' that is maximally similar to *w* such that $\xi(w') \neq \emptyset$ and $\zeta(w') \neq \emptyset$, $\xi(w') = \zeta(w')$. (Sudo 2014)

Applying the Default Assumption (DA) to presuppositional embeddings in intensional contexts: when the discourse does not explicitly address the subjects attitude toward the presupposition, comprehenders assume that the subject believes the presupposition. The presupposition is then accommodated locally within the scope of the attitude predicate, licensing the felicitous use of the embedded presupposition. By contrast, when the discourse entails that the subject is ignorant of or objects to the presupposition, comprehenders can no longer assume the subjects belief in presuppositions; the Default Assumption does not apply. As a result, the felicity condition, which requires that the common ground entail the presupposition for felicitous use, is not satisfied, leading to the infelicity of presupposition triggers in such intensional contexts. The Default Assumption predicts no difference among presuppositional triggers. That is, all presuppositional embeddings under attitude predicates should permit a *de re* interpretation as long as the discourse does not explicitly address the subject's attitude toward the presupposed content. This prediction, however, is inconsistent with the observed variation across different presupposition triggers.

However, I believe that the Default Assumption is on the right direction in explaining the results. The key difference between *buzai* and *ye* vs. *jiu* and *yishidao* resides in their ability in overriding the felicity condition on presuppositions. It is observed by previous studies that the natural use of certain presupposition triggers can be used felicitously even when their presuppositions are only implied as possibilities in the common ground. For instance, in (21), the presupposition of the additive particle *too* is not entailed by the context, yet the use of *too* here remains felicitous (cf. van der Sandt & Geurts (2001), van der Sandt & Huitink (2002), Zeevat (2004)). The change-of-state presupposition *no longer* also remains natural when its presupposition is merely entailed as possibility. By comparison, triggers like *only* and *know* lead to oddness if their presupposition is not fully entailed. The Mandarin Chinese share the same intuition.

(21) a. John thinks Mary has gone to Bills party. Carol has gone there too.

b. John possibly will sing tonight. I will sing too.

c. John dreamt that his car was stolen. My car was stolen too.

(22) John may have often smoked in the past, but now he no longer does so frequently.

(23) a. John possibly went skiing. # Bill knows he went skiing.

b. John possibly went skiing. # Only John went.

Based on the independent evidence from triggers' ability in overriding the felicity condition, I propose to weaken the Default Assumption in (19) to a moderate one, as in (24): instead of assuming that the attitude holder shares beliefs with the common ground, discourse participants merely assume the attitude holder's weak commitment to the common ground beliefs.

(24) Weak Commitment Assumption (WCA): In the current discourse where the common ground entails *p*, unless explicitly mentioned, assume the attitude holder *x*'s weak commitment of *p*, schematically, $\exists w' \in Dox_w(x)[p(w')]$.

Evidence supporting WCA and challenging DA is presented in (25)-(26). Examples (25a-b) illustrate that the sentence *x is happy that p* asserts *x* is happy and presupposes that *x* believes *p*. Example (25c) demonstrates that when this presupposition is not fully entailed, the sentence sounds odd. Now, consider a context where the discourse participants are uncertain whether Kate knows that Bill won the game. Moreover, they are aware that none of them knows Kates stance on this matter, as outlined in (26). Under this scenario, if DA were to apply, the absence of an explicit mention of Kates attitude toward *Bill winning the game* should lead the participants to assume that Kate believes *Bill won*. Consequently, the sentence *Kate is happy that Bill won* should sound natural, contrary to our actual judgment. By contrast, if WCA applies, the discourse participants would only assume Kates weak commitment to *Bill winning the game*. Since this does not satisfy the presupposition triggered by *Kate is happy that Bill won*, the sentence appears odd, aligning with our intuitions. In other words, DA risks overriding Grice's Maxim of Quality, which requires speakers to avoid stating what they do not believe, whereas WCA does not.

(25) a. Kate is happy that Bill won the game.
$\rightarrow$ Kate is happy

b. Kate is not happy that Bill won the game.
$\rightarrow$ Kate is not happy
$\hookrightarrow$ Kate believes that Bill won the game

c. Kate thinks that Bill probably won the game. #And she is happy that Bill won.

(26) (We have no idea if Kate knows that Bill won the game)
"Bill won the game... #Kate is happy that Bill won."

WCA is able to explain Percus' example (18b) on the unavailability of *de re* readings of predicates as well. In this example, without explicit mention, based on WCA, the discourse participants assume that Mary has a weak commitment to the idea being Canadian is distinct from being American, $\exists w' \in Dox_w(mary)[[\![being\ Canadian]\!](w') \neq [\![being\ American]\!](w')]$. This does not satisfy the condition on *de re* rule application, thus, (18b) is only interpreted as *de dicto*.

According to (24), WCA applies whenever the attitude holder's belief about the relevant *p* is not explicitly mentioned. Situations that WCA applies can be divided into the following possibilities. Consider a conversation between two individuals, a Listener (L) and a Speaker (S), where S utters the target sentence *x believes* U_p, with *p* representing the presupposed content.

- (i) It is common ground that L has no prior knowledge of *x*'s belief and S's belief.

- (ii) It is common ground that L assumes it is common knowledge that *x* is ignorant of *p*. Yet S does not explicitly state that *x* doesn't believe *p*.
- (iii) It is common ground that L assumes it is common knowledge that *x* believes $\neg p$. Yet S does not explicitly state that *x* believes $\neg p$.

However, the application of WCA to Situation (i) seems to be inadequate. Utter (27) under Situation (i), for example, the inference we naturally get is that $\forall w' \in Dox_w(juan)$[Rual moved to BA$(w')$]. But under the assumption of WCA, we merely get a weak inference $\exists w' \in Dox_w(juan)$[Rual moved to BA$(w')$].

(27) Raul moved to BA. Juan thinks that Malena, too, moved to BA.
$\rightarrow$ Juan believes that Raul moved to BA.

I propose that belief presupposition accommodation is composed of two-step processes: (i) the WCA, and (ii) a follow-up strengthening mechanism as defined in (28). WCA applies whenever *x*'s attitude on *p* is not explicitly mentioned, suggesting the listeners' effort to actively adjust the common ground they assumed to maintain the flow of conversation. Strengthening applies after WCA only if the strengthened interpretation is consistent with the context. This second step captures the observation that accommodation is resisted when the accommodated content conflicts with the common ground.

(28) Strengthening: Strengthen the result of WCA,
$\exists w' \in Dox_w(x)[p(w')] \rightarrow_{strength} \forall w' \in Dox_w(x)[p(w')]$, if the strengthening does not lead to contradictions.

Return to Situation (i). L assumes S is a cooperative speaker that S only say what S believes to be true. After S uttered (27), L assumes Juan's weak commitment to Raul moving to BA. Since there is no evidence against Juan's commitment to Raul moving to BA, L further strengthens the assumption to a strong one. By contrast, in Situation (ii) and (iii), after hearing S utter (27), L doubts his initially assumed common ground and tries to adjust it accordingly. However, L does not have enough confidence to further strengthen it as the strengthening that $\forall w' \in Dox_w(juan)$[Rual moved to BA$(w')$] leads to a sheer contradiction to his initial assumption that $\exists w' \in Dox_w(juan)$[Rual moved to BA$(w')$]$\wedge\exists w' \in Dox_w(juan)$[$\neg$ Rual moved to BA(w')] in Situation (ii) and that $\forall w' \in Dox_w(juan)$[$\neg$Rual moved to BA$(w')$] in Situation (iii).

With these mechanisms in place, we can now explain the experimental results. In the final scene of the discourse, since the attitude holders belief regarding presupposition p is not explicitly mentioned, the Weak Commitment Assumption (WCA) applies across all conditions and triggers, reflecting the listeners cooperative effort to accommodate. However, strengthening only applies in the [N] condition, not in the [I] or [D] conditions, since in the latter two, a strengthened interpretation would contradict what the listener initially believes about the attitude holder's beliefs. As a result, listeners fully accommodate presuppositions in the [N] condition but only partially accommodate them in the [I] and [D] conditions. Because *buzai* and *ye* remain natural even when the local context only partially entails their presupposition, while *jiu* and *yishidao* do not, only the former two triggers maintain naturalness in the [I] and [D] conditions.

The two-step belief presupposition accommodation process can be extended to a more general presupposition accommodation mechanism. The broader version of WCA is defined in (29).

When a speaker's utterance presupposes content that is easily acceptable, as in (30a), the listener initially assumes the speaker's weak commitment, for example, that the speaker owns a car. Since it is generally expected for an adult to own a car and there is no evidence contradicting this assumption, the listener strengthens the weak commitment, ultimately assuming that the speaker is certain about owning a car. The presupposition is successfully accommodated. However, when the presupposition conflicts with the listener's common knowledge, as in (30b), where it is typically not realistic for someone to own a unicorn, the listener is less confident in strengthening the weak commitment. As a result, the presupposition fails to be fully accommodated.

(29) General Weak Commitment Assumption (GWCA): In the current discourse where the common ground does not entail p, unless explicitly mentioned, assume the speaker who uttered S_p has a weak commitment to p, $\exists w' \in Dox_w(speaker)[p(w')]$, where S is the assertion and p is the presupposed content.

(30) a. I parked my car in the parking lot.

b. I parked my unicorn in the parking lot.

To conclude, the two-step accommodation mechanism discussed in this section is composed of two processes: WCA and a follow-up strengthening. WCA represents people's initial effort to adjust their assumed common ground, and the strengthening step determines whether the accommodation succeeds or fails. For triggers that allow for override over the felicity condition, such as the additive particle and the change-of-state particle, the application of WCA already licenses its insertion in the scope of an attitude holder, and this explains the availability of *de re* interpretations of their presuppositions. By contrast, for triggers that strictly obey the felicity condition, such as the exclusive particle and the factive predicate, WCA does not license their use in intensional contexts, thus, the *de re* reading is not available for them at all. Zooming out for a bigger picture, the current study argues that the *de re* presupposition may not be a result of the substitution mechanism, rather, it may be reduced to a question related to local accommodation in intensional contexts.

6. Conclusion. This paper argues that *de re* interpretations of presuppositions in intensional contexts are not licensed by syntactic substitution mechanisms alone, but rather emerge from a process of local accommodation. Experimental data from Mandarin Chinese demonstrate that only a subset of presupposition triggers, specifically those more flexible in their felicity conditions, are capable of supporting *de re* readings in contexts where the presupposed content is not explicitly believed by the attitude holder. These findings motivate a two-step process of accommodation: an initial Weak Commitment Assumption that allows presuppositions to be locally inferred in the absence of contrary evidence, followed by a strengthening mechanism that upgrades weak beliefs into strong commitments when consistent with the common ground. By generalizing this mechanism beyond belief contexts, the study offers a unified perspective on when and how presuppositions are accommodated. Future research will explore how this mechanism interfaces with cross-linguistic variation and interacts with other types of projective content.

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