

## INTRODUCTION

**Background:** Faure & Palasis (2021) argue that in a ‘mixed’ language like French, *ex situ* and *in situ wh*-questions, while both involving a *wh*-dependency, do not target the same position. Specifically, they propose that *wh-ex situ* is associated to a lower head they label **Exclusivity**. An interesting corollary of their analysis is that these two dependencies might interact differently with **Topic**, that sits in between the two in the cartography of the left periphery first established by Rizzi (1997).

**Research question:** Can their observation extend to a language like Mandarin Chinese, where *wh*-in situ is the only strategy for questions and fronting is a marked strategy associated with contrastive focus (Cheung 2008)?

## METHOD

### Two parallel experiments in French and Chinese

**Tasks:** 1) acceptability judgment; 2) sentence-picture matching task; implemented in PCibex farm

**Design:** 2x2x2 design in 24 items: *in situ* (a-b, e-f)/fronted (c-d, g-h), subject (a, c, e, and g)/object (b, d, f, and h), and ‘*who*’/‘*which*’ (*qui/quel* in French, and *shui/nage* in Mandarin Chinese); 28 fillers including 4 ungrammatical ones; all items were *wh*-questions with a topicalization: object topic with subject questions, subject topic with object questions

**Participants:** 62 French speakers and 34 Mandarin Chinese speakers, respectively. They were recruited on RISC (Relais d’Information sur les Sciences de la Cognition) and social media.

**Procedure:** In both experiments, participants were required to read *wh*-questions, rate them on a 1-7 Likert scale, and then answer them by choosing the correct character from a picture (Fig 1).



Fig 1: Picture illustrating the ‘following’ event in examples

### Examples: French experiment

- a. Subject *in situ* with topicalization  
 [e] [Top Le cheval blanc], [qui/quel garçon le suit]?  
 the horse white who/which boy it follows  
 ‘The white horse, who/which boy is following it?’
- b. Object *in situ* with topicalization  
 [e] [Top Le cheval blanc], [il suit qui/quel garçon]?  
 the horse white it follows who/which boy  
 ‘The white horse, who/which boy is it following?’
- c. Subject *ex situ* (fronted) with topicalization  
 [Top Le cheval blanc], c’est est qui/quel garçon qui [e] le suit?  
 the horse white it’s who/which boy that it follows  
 ‘The white horse, it’s who/which boy that is following it?’
- d. Object *ex situ* (fronted) with topicalization  
 [Top Le cheval blanc], c’est est qui/quel garçon qu’il suit [e]?  
 the horse white it’s who/which boy that it follows  
 ‘The white horse, it’s who/which boy that it is following?’

### Examples: Chinese experiment

- e. Subject *in situ* with topicalization  
 [e] [Top Bai ma a], shui/nage nanhai zai genzhe ta?]  
 White horse TOP who/which boy PROG follow it  
 ‘The white horse, who/which boy is following it?’
- f. Object *in situ* with topicalization  
 [e] [Top Bai ma a], ta zai genzhe shui/nage nanhai?]  
 White horse TOP it PROG follow who/which boy  
 ‘The white horse, who/which boy is it following?’
- g. Subject *ex situ* (fronted) with topicalization  
 [Top Bai ma a], shi shui/nage nanhai [e] zai genzhe ta?]  
 White horse TOP it’s who/which boy PROG follow it  
 ‘The white horse, it’s who/which boy that is following it?’
- h. Object *ex situ* (fronted) with topicalization  
 [Top Bai ma a], shi shui/nage nanhai, ta zai genzhe [e]?]  
 White horse TOP it’s who/which boy it PROG follow  
 ‘The white horse, it’s who/which boy that it is following?’

## REFERENCES

Cheung, Candice Chi-Hang. 2008. *Wh*-fronting in Chinese. Los Angeles: University of Southern California PhD dissertation.

Faure, Richard & Caterina Palasis. 2021. Exclusivity! *Wh*-fronting is not optional *wh*-movement in Colloquial French. *Natural Language & Linguistic Theory* 39(1), 57–95.

Fodor, Janet Dean. 1978. Parsing strategies and constraints on transformations. *Linguistic Inquiry* 9(3), 427–473.

Pesetsky, David. 1982. *Paths and Categories*. Cambridge, Mass.: MIT PhD dissertation.

Rizzi, Luigi. 1997. The fine structure of the left periphery. In Liliane Haegeman (ed.), *Elements of grammar: Handbook of generative grammar*, 281–337. Dordrecht: Kluwer.

Villata, Sandra, Luigi Rizzi & Julie Franck. 2016. Intervention effects and Relativized Minimality: New experimental evidence from graded judgments. *Lingua* 179, 76–96.

## RESULTS

We analyzed data using linear mixed-effects models and cumulative link models in R-studio.

Results in **Chinese** (see Fig 4-5) were consistent with those in **French** (see Fig 2-3): in the *in situ* condition object questions were answered more correctly and rated higher than subject questions (object advantage), while in the fronted condition subject questions yielded more correct answers and higher ratings than object questions (subject advantage).

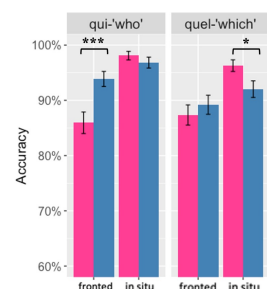


Fig 2 Mean response accuracy of *qui/quel* (‘who/which’) questions

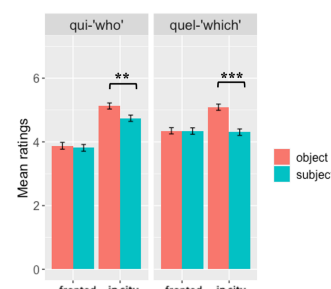


Fig 3 Mean ratings of *qui/quel* (‘who/which’) questions

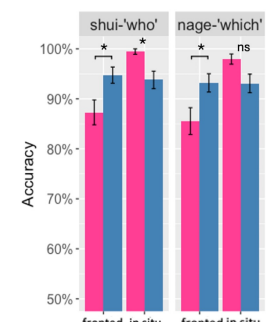


Fig 4 Mean response accuracy of *shui/nage* (‘who/which’) questions

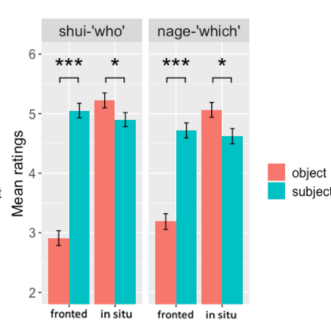


Fig 5 Mean ratings of *shui/nage* (‘who/which’) questions

While a subject advantage is a well-known phenomenon associated to A-bar dependencies (as an effect of relativized minimality: Villata et al. 2016), the object advantage emerging in covert *wh*-dependencies might seem *prima facie* surprising.

## DISCUSSION

If *in situ* questions target a higher position than *ex situ* questions, as argued by Faure & Palasis (2021), this contrast can be explained as a function of the well-known observation that nested dependencies are easier to process than crossing dependencies (stemming from Fodor 1978), a possible consequence of a grammatical constraint such as the **Path Containment Condition** (Pesetsky 1982): subject *in situ* questions and object fronted questions crucially involve crossing dependencies with topicalization (as in a, d, e, and h), while object *in situ* questions and subject fronted questions involve nested dependencies with topicalization (as in b, c, f, and g). This explains the subject advantage in fronted questions, and the object advantage in *in situ* questions.

## Conclusion

What initially appears to be a strong and unexpected difference between the processing of *wh*-in situ questions and fronted questions in French and Mandarin Chinese ultimately serves as robust empirical confirmation that *wh*-in situ questions target a position higher than fronted questions. Topicalization in Chinese *wh*-in situ questions interacts with the covert dependency in the same way as it does in French. This suggests that *wh*-in situ in French and Mandarin Chinese share important cartographic features.