

Linguistic-saving hypothesis among bilinguals: The effect of language on intertemporal discounting and future perception

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Note: We may conduct a pre-registered Study 3 and update the results on the ResearchGate: <https://www.researchgate.net/profile/Yuepei-Xu>

Introduction

The Sapir-Whorf Hypothesis: Language shapes the way we think.

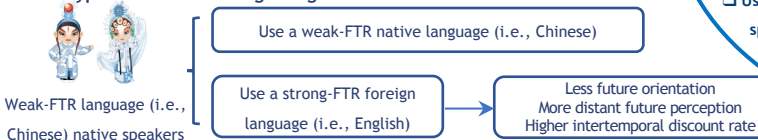
□ The linguistic-savings hypothesis (LSH, Chen, K., 2011)

Stronger future-time reference (FTR) of one's native language $\longleftrightarrow$ correlational relationship $\longleftrightarrow$ Higher intertemporal discount rate

□ Beyond native language: Take *foreign* languages into LSH

- Instantaneous effect of different language?
- Different languages impact individuals' decision preference (Keysar et al., 2012) and time perspective (Pérez & Tavits, 2017).

□ Our hypothesis: LSH among bilinguals



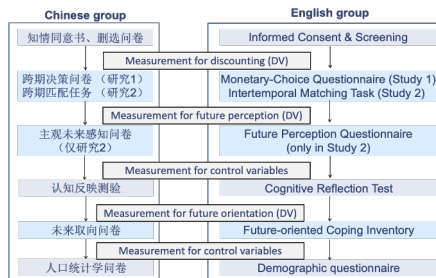
Methods

□ Study 1

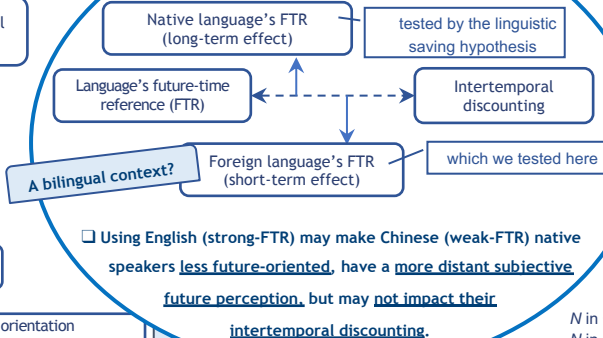
- Design:** Single-factor between-group design
- Sample:** 213 college students (use G-power, at least 156 participants are needed)
- Independent variable (IV):** Language (Chinese vs. English)
- Dependent variables (DVs):** Discounting rate, future orientation
- Control variables:** Cognitive reflection test, demographic variables

□ Study 2 (generally the same as Study 1)

- Sample:** 472 adults (at least 352 participants are needed)
- An extra DV:** Subjective future perception



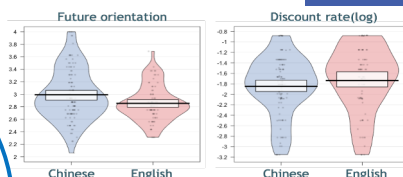
What did we found?



Results

Study 1

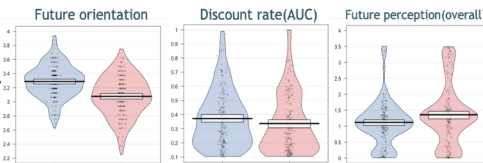
N in Chinese = 114
N in English = 78



- Less future orientation in English group, $p = .006$, Cohen's $d = 0.398$, $BF_{10} = 3.852$
- Non-significant effect of language on discounting, $p = .198$, Cohen's $d = 0.190$, $BF_{10} = 0.347$

Study 2

N in Chinese = 215
N in English = 208



- Less future orientation in English group, $p < .001$, Cohen's $d = 0.728$, $BF_{10} > 100$
- More distant future perception in English group, $p = .009$, Cohen's $d = 0.256$, $BF_{10} = 3.122$
- Non-significant effect of language on discounting, $p = .362$, Cohen's $d = 0.090$, $BF_{10} = 0.179$

Discussion

□ Consistent with Pérez & Tavits (2017)

- Manipulation: Use a strong-FTR language in interview
- Outcome: Less future orientation, less supportive for future-oriented policy

□ Consistent with Chen, I. J., He, and Riyanto (2019)

- Manipulation: An instantaneous language change (adding an auxiliary verb "will")
- Outcome: Did not change participants' intertemporal preference

□ Partially consistent with Bialek, et al. (2020):

- Manipulation: Use foreign languages
- Outcome: Did not benefited one's intertemporal decision