Pragmatically (ir)rational: loss aversion bias in L2 speakers of English
Zoe Schlueter, Chris Cummins, Antonella Sorace
Linguistics and English Language, University of Edinburgh

Foreign language effect in loss aversion
Decision-making is predictably irrational (Tversky & Kahneman, 1981): choices are affected by how information is framed.

Asian Disease Problem (ADP): A new disease will kill 900 people; you must choose one of two available medicines to combat it. They would have the following consequences:

- **Gain frame:**
  - If you choose Medicine A, 300 people will be saved. (safe option)
  - If you choose Medicine B, there is a 33.3% chance that 900 people will be saved and a 66.6% chance that no one will be saved. (risk option)

- **Loss frame:**
  - If you choose Medicine A, 600 people will die. (safe option)
  - If you choose Medicine B, there is a 33.3% chance that no one will die and a 66.6% chance that 900 will die. (risk option)

Which medicine do you choose?

Framing effect: safe option chosen more frequently in gain than in loss frame by L1 speakers, indicating loss aversion bias

“Foreign language effect”: L2 speakers might not show the same loss aversion (Costa et al., 2014; Keysar et al., 2012). But why?

- Are L2 speakers more rational in their L2 because of reduced emotionality?
- But: Does “200 people will be saved” mean exactly 200? At least 200? At most 200? Interpretation of number term changes which choice is rational (Mandel, 2013) and might be modulated by L2 proficiency
- Online study with L1 Spanish speakers (varying proficiency, most resident in L1 environment) suggested L2 proficiency correlates with stronger framing effect (Schlueter, Cummins & Sorace, 2018)

Is the foreign language effect on loss aversion modulated by L2 proficiency or L2 emotionality in highly proficient L2 speakers who live in an L2 environment?

**Experiment**

- 2 distinct versions of ADP (disease & economic scenarios, following Costa et al. 2014)
- one in gain and one in loss frame
- Forced choice between safe and risky option
- L2 proficiency: Oxford Placement Test
- L2 emotionality: rated words with positive, negative or neutral valence (10 each) in L1 and L2

**L2 Results**

**Italian group (N = 44)**

- significant framing effect (p = .04)
- no significant effect of scenario on framing effect (interaction frame x scenario: p = .37)
- L2 Proficiency: no significant interaction with framing (p = .51)
- L2 Emotionality: no significant interaction with framing (p = .06), but trend towards stronger framing effect for speakers with stronger L2 emotionality

**Chinese group (N = 51)**

- significant framing effect (p = .004), but it differs between scenarios (interaction frame x scenario: p = .04):
  - Disease: p = .55
  - Economic: p = .001
- L2 proficiency: no significant interaction with framing (p = .47)
- L2 emotionality: no significant interaction with framing (p = .08), but numerical trend towards stronger framing effect for speakers with stronger L2 emotionality

**Why does the Chinese group show a framing effect only in the economic scenario?**

Follow-up experiment: Investigate how L1 Chinese speakers’ decision-making in ADP-type scenarios compares in their L1 and L2

**Summary**

- Absence of a framing effect for L2 speakers did not replicate,
- No evidence that L2 proficiency affects framing effect in highly-proficient L2 speakers living in L2-speaking country
- Attaching more emotional weight to the L2 might contribute to the framing effect in the L2
- Nature of L1 might impact framing effects in different ADP-type scenarios

**References**

- Costa et al. (2014), Cognition, 130, 236-254.
- Keysar et al. (2012), Psychological Science, 23, 661-668.