



*Symposium on emotions in native and foreign languages*

# **Emotionality is not tied to the native language in bilinguals**

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# Different angles of approach

- CC: Experimental pragmatics, esp. quantity implicature
- AS: Impact of bilingualism on pragmatic interpretation
- Collaboration: pragmatic influence on reasoning experiments, and the effect of (one's choice of) language
  - Classic work on reasoning sometimes a little casual on the issue of linguistic interpretation (cf. Mandel 2014)

# Example: framing effects

- Tversky and Kahneman (1981): risky-choice framing
- Minimal example: Levin (1987)
  - Comparing ground beef described as “25% fat” with that described as “75% lean” (between-participants design, same product)
  - “75% lean” meat gets superior ratings, even to the extent of participants preferring its taste
  - Assuming “extensional equivalence”, this represents *prima facie* evidence of irrational or inconsistent thinking

# Problems with extensional equivalence

- Need to assume that *lean* and *fat* are complementaries
  - Not entirely obvious
- Need to assume that 25% means “exactly 25%” and 75% means “exactly 75%”
  - But numbers don’t always work like this in natural language...
- Possible interpretations of a numeral  $n$  include
  - “exactly  $n$ ”
  - “at least  $n$ ”
  - “approximately  $n$ ”
  - (and arguably “at most  $n$ ”, although the examples are a bit marginal)
- “75% lean” beef mustn’t be exactly 26% fat, but it (probably) can be exactly 24% fat

# Linguistic in(ter)ference

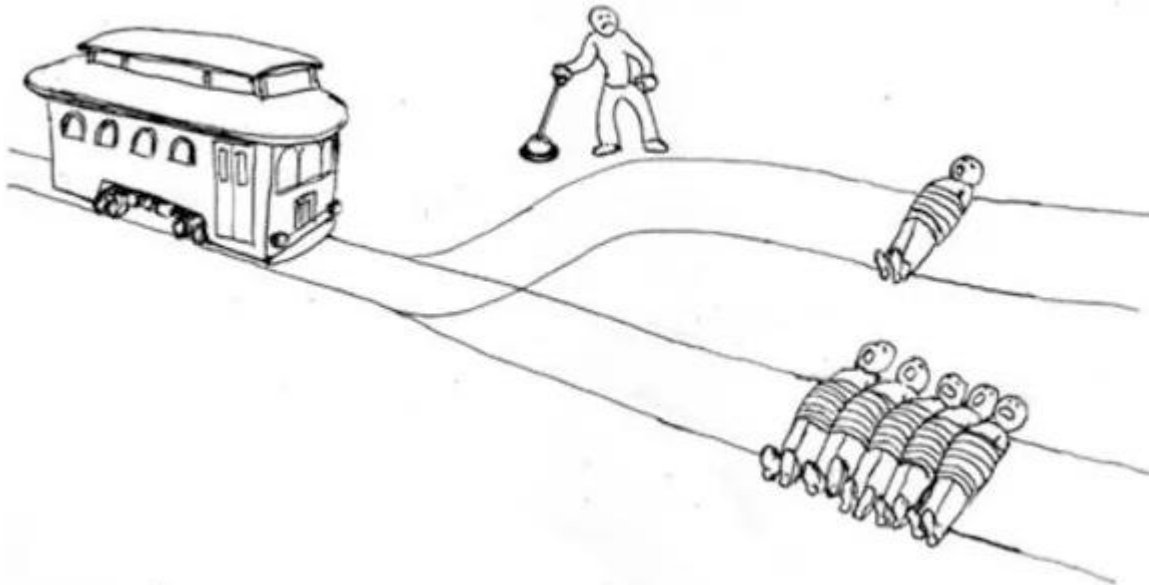
- Given the interpretation of number, the behaviour documented in Levin (1987) is potentially rational
  - The same goes for Tversky and Kahneman (1981), although the setup is more complicated
- A similar argument holds for the ‘Linda problem’ demonstration of the conjunction fallacy:
- *Linda is 31 years old, single, outspoken, and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice, and also participated in anti-nuclear demonstrations.*

Which is more probable?

1. Linda is a bank teller.
2. Linda is a bank teller and is active in the feminist movement.

# The foreign language effect

- Reasoning in an L2 reduces or eliminates framing effects (Keysar et al. 2012, Costa et al. 2014a)
- Also, L2 users produce more utilitarian decisions in moral dilemmas such as trolley problems (Costa et al. 2014b)



<https://nymag.com/intelligencer/2016/08/trolley-problem-meme-tumblr-philosophy.html>

# The foreign language effect

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- Also, L2 users produce more utilitarian decisions in moral dilemmas such as trolley problems (Costa et al. 2014b)
- (First) explanation: emotional distancing in L2 reduces participants' reliance on heuristics, which, if used, cause us to make reasoning errors
- Several parts to this claim:
  - L2 use leads to emotional distancing
  - Emotional distancing leads to non-use of heuristics
  - Non-use of heuristics leads to normatively accurate reasoning
- Also, language proficiency *per se* plays no role
  - Although Costa et al. (2014b) do elicit self-rated proficiency

# A sceptical alternative account

- These tasks magnify the effect of cognitive biases by eliciting (rational) pragmatic enrichments to their linguistic content
- L2 participants are less inclined to derive pragmatic enrichments, particularly at low proficiency levels
- The absence of these pragmatic enrichments results in the appearance of higher levels of normative rationality



# FLE in proficient bilinguals?

- Previous work on this with Zoe Schlueter
- Highly proficient bilinguals
  - Susceptibility in L2 to framing effect in risky choice somewhat correlated with L2 proficiency
  - But highly proficient L2 users indistinguishable from L1 users in their performance on these tasks
  - No evidence of this being mediated by the emotional connection with the L1 or L2, as measured by self-reported emotionality over a word list

LEVERHULME  
TRUST \_\_\_\_\_




# Surprising?

- Lack of FLE a bit surprising if you read Keysar et al. (2012)
  - More surprising if you read the people who read their press release

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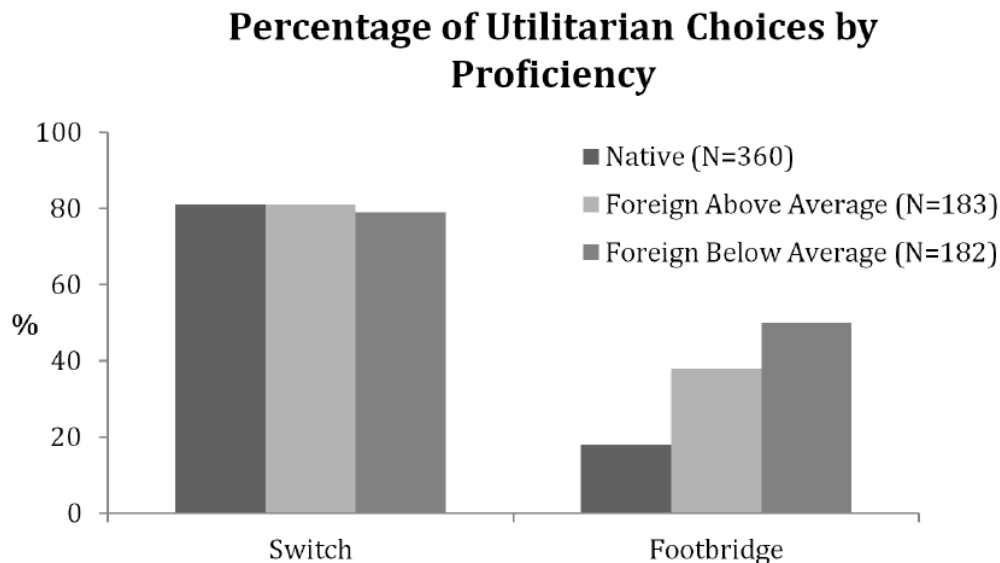
Roger Dooley Contributor 

*Better business through behavioral science*

<https://www.forbes.com/sites/rogerdooley/2012/10/30/foreign-language-effect/?sh=12ee367a58a5>

# Surprising?

- Lack of FLE a bit surprising if you read Keysar et al. (2012)
  - More surprising if you read the people who read their press release
- However, other work also finding FLE elusive
  - Brouwer (2019), Winkler et al. (2016)
  - Note also Costa et al. (2014b) on the effect of self-reported proficiency



**Figure 3. Percentage of utilitarian decisions by proficiency (Experiment 2).** Percentage of utilitarian decisions for the two versions of the trolley problem in the native language condition and the foreign language condition, divided by self-rated proficiency level. doi:10.1371/journal.pone.0094842.g003

# Emotional account revisited

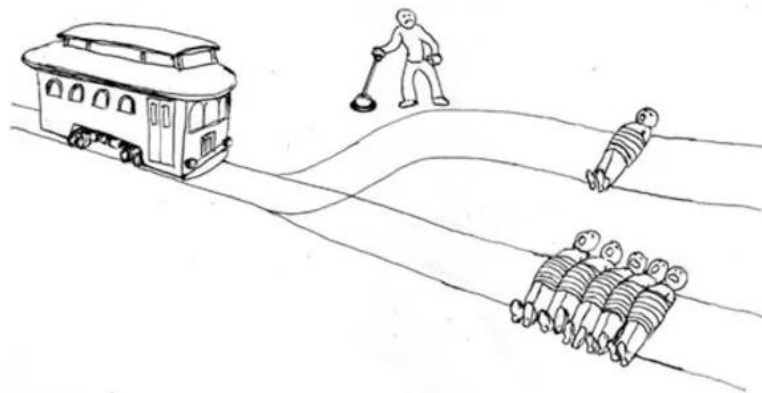
- Results are still compatible with the idea that this is non-use of heuristics in L2 driven by emotional distancing
- However, would need to drop the assumption that L2 use is intrinsically emotionally distancing
  - Heightened ability might be associated with higher emotionality (which would make sense in immersive contexts in particular)
  - Also natural to wonder whether L1 performance is affected by attrition, and if so, whether that is mediated by emotionality

# Work in progress

- With Eva-Maria Schnelten (RA)
- Attempting to profile proficient Italian-English bilinguals by battery of tests (some in **both languages**):
  - Language experience (LEAP-Q)
  - **(Lexical) proficiency (LexTale)**
  - **Emotional engagement / “blunting” (self-bias task, Ivaz et al. 2019)**
  - Cognitive control (AX-CPT)
  - **Moral dilemmas**
- Aiming to explore whether moral judgement is (best) predicted by language experience, emotional association, or general cognitive effects of bilingualism
- Results fairly imminent...

# Work still to do

- What about the effect of L2 use on pragmatic interpretation *per se*?
  - How does it play out in reasoning tasks?
  - Moreover, how does it play out in cross-cultural communication?
  - Number interpretation in focus, but also potentially things like deontic modality, perhaps relevant to the trolley dilemma



Would you?  
Can you?  
Should you?  
Must you?  
Do you have to?  
Did you ought to?  
...

- Not easy to (cause people to) make better decisions, but some hope of helping them (us!) communicate more effectively

# Thank you!

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# Appendix: Tversky and Kahneman (1981)

- Classic and much-replicated scenario
  - Disease “expected to kill 600 people...”

**Program A:**

200 people will be saved

72 | 28

**Program B:**

1/3 probability that 600 will be saved; 2/3 probability none will be

**Program C:**

400 people will die

22 | 78

**Program D:**

1/3 probability that no-one will die; 2/3 probability that 600 will



# Appendix: Gould's homunculus

“I am particularly fond of [the Linda] example because I know that the [conjoint] statement is least probable, yet a little homunculus in my head continues to jump up and down, shouting at me—“but she can't just be a bank teller; read the description.””

