



Learning to think in a second language

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Outline

- Multilingualism and reasoning
- Language and emotion
- Linguistic structures and similarity decisions

Reasoning: Why a multilingual angle?

- Multilingualism: the use two languages or more in everyday communication
- More than half of the world's population is multilingual
- Multilingualism is a global phenomenon
--> Ecological validity

Reasoning in a second language

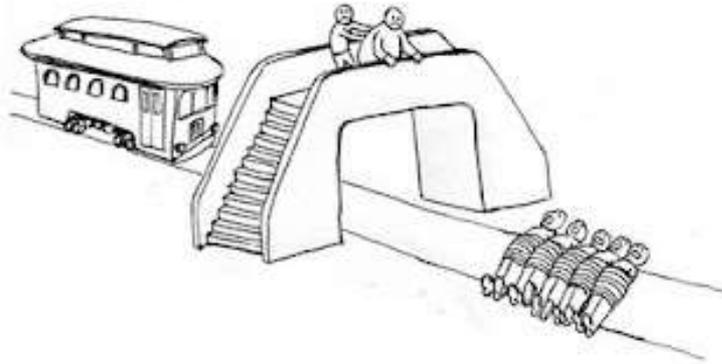
- Any different from reasoning in a first language?
- Yes...
 - Emotionality
 - Mastery of linguistic structures

Emotions in a second language

- Greater emotional ties to the mother tongue than to subsequently learnt languages (Dewaele, 2005; Pavlenko, 2014)
- This seems to spill over to decision making (Keysar et al. (2012; Costa et al., 2014, 2015)

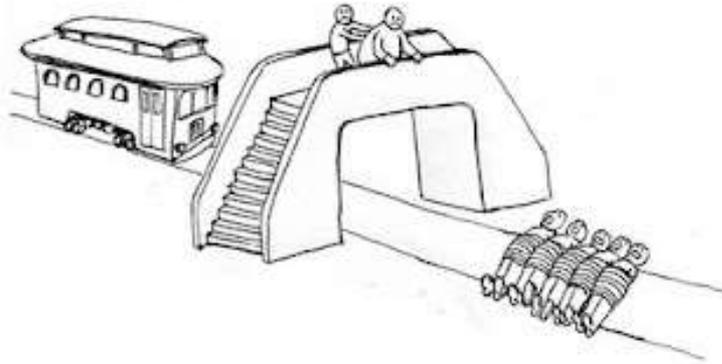
Emotions in a second language

- You're standing on a footbridge overlooking a train track. A small on-coming train is about to kill five people. The only way to stop it is to push a heavy man off the footbridge in front of the train. This will kill him, but save the five people.



Emotions in a second language

- If taking the test in their second language, participants are more likely to choose pushing the man off the bridge (Costa et al., 2015): “The foreign language effect”
- This holds across different language constellations
- Second language reasoning promotes cost-benefit considerations, thus increasing utilitarian judgements



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Linguistic structure and reasoning

- Does linguistic structure itself have an effect on reasoning?
- The case of counterfactual reasoning and linguistic markers of modality (Au, 1983; Bloom, 1981, Liu 1985)
- The principle of linguistic relativity: Language influences thought, such that speakers of different language think differently (Whorf, 1941/1956)
- Renaissance in linguistic relativity research since the 1990's, focusing on similarity judgements



(Goal-oriented motion event)

Event endpoints and grammatical aspect

- Speakers of **Afrikaans, Dutch, German, isiXhosa, and Swedish** mention and allocate visual attention to motion endpoints to a larger extent than speakers of **Algerian Arabic, English, French, Russian, and Spanish** (Athanasopoulos & Bylund, 2013; Bylund, 2008, 2011; Bylund et al., 2013; Bylund & Athanasopoulos, 2014; Carroll & von Stutterheim, 2006; von Stutterheim et al., 2012)
- These language groupings correspond to the presence of linguistic markers of ongoingness (so-called grammatical aspect) (e.g., *sing vs singing, a chanté vs chantait* etc.)

- Maximal viewing frame = event viewed in its entirety ('bare' verbs) (Langacker, 2008)



- Immediate viewing frame = event 'zoomed in' on (imperfective or progressive aspect) (Langacker, 2008)



Event endpoints and grammatical aspect

- The recurrent encoding of 'zoomed in', immediate temporal viewing frames leads to an entrenchment of such frames, which in turn render speakers of aspect languages more focused on ongoingness.

Similarity judgement task

Speakers of non-aspect languages are more prone to base their decisions on endpoints than are speakers of aspect languages

ie: to match the [+endpoint] alternate with the target scene

Target scene



Medium degree of goal-orientation

[-endpoint] alternate



Low degree of goal-orientation

[+endpoint] alternate



High degree of goal-orientation

(Clips from C. von Stutterheim and colleagues)

Similarity judgements of events in multilingual speakers

- How stable are these categorisation preferences?
- Does learning a new language change the way you think about motion?
- Studies on second language learners show that their decisions on similarity indeed change as a function of learning a new language (Athanasopoulos et al., 2015a, b; Bylund et al., 2015)
- Importantly, proficiency with grammatical aspect in particular predicts the degree of such behavioural shift (Bylund et al., in prep.)

Do multilingual speakers think differently about motion depending on the language context?

- Moral reasoning sensitive to language context, what about similarity judgements?
- German-English bilinguals took the judgement, with a test administrator who either spoke German or English
- Those who carried out the task in English behaved like English monolinguals, whereas those that carried out the task in German behaved like German monolinguals
- The acquisition of a given linguistic structure may tilt the relevant decision making in a certain way. The extent to which this happens depends on how well you master the structure, and the language context you are in.

Multilingualism and reasoning

- An individual who possesses skills in more than one language may be influenced by those skills when deliberating a choice
- This holds for two very different types of reasoning, involving moral and similarity judgements
- The exact locus of such language influences on reasoning is yet to be investigated, as is the limit of these effects



Thank you very much!
Merci beaucoup!