Context systematically distorts value encoding

Magdalena Soukupova & Stefano Palminteri

Département d'études cognitives - ENS - Université PSL

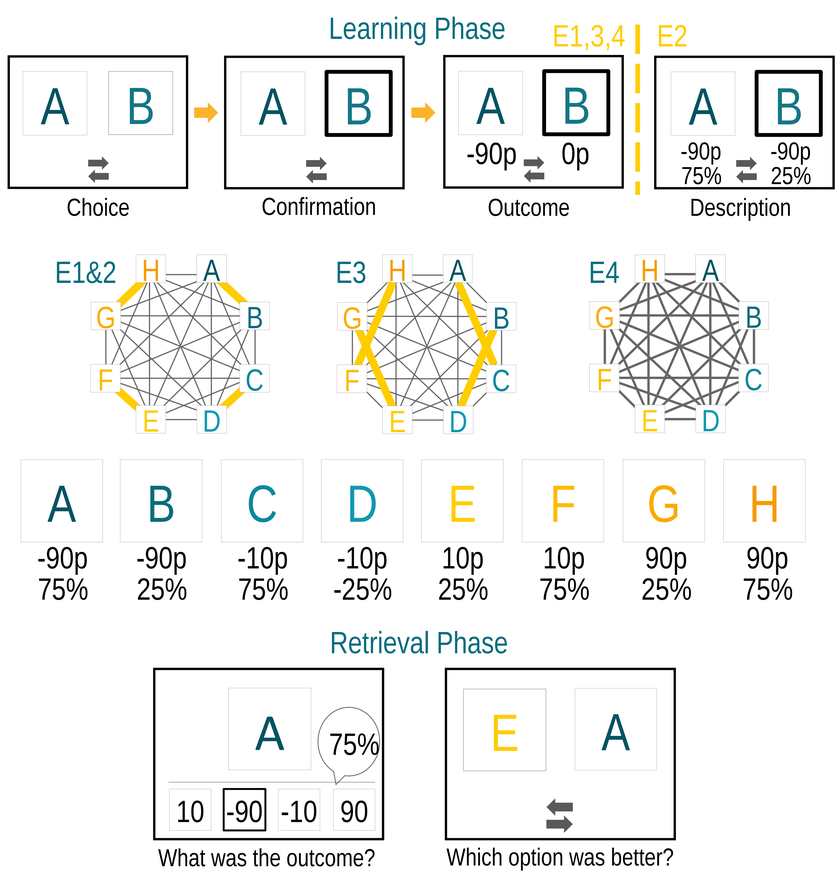
IN A NUTSHELL

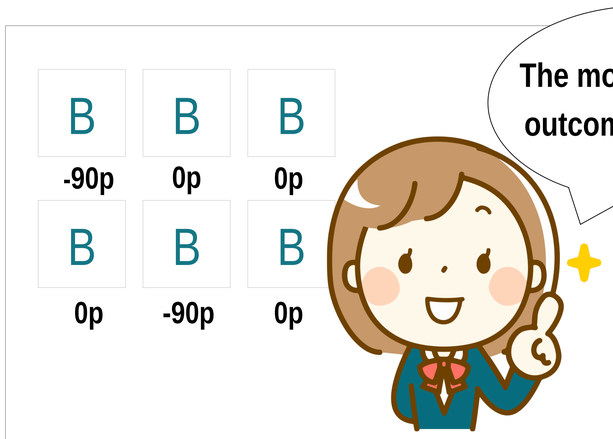
There is ample of evidence that economic choices are affected by context, i.e. other options present at the time of decision. It is also clear, that many decisions are made from memory. Yet, few studies investigated whether context influenced how values are stored and retrieved from memory.

Here we focus on explicit value recall and show that:

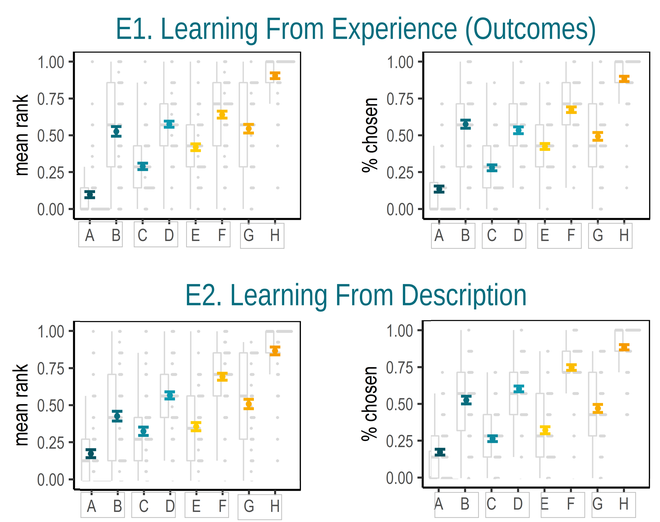
1. Context systematically distorted value encoding.
2. Participants' responses were robust to changes in the elicitation method and learning modality but sensitive to changes in learning architecture.
3. Responses were optimal only if options were learnt in multiple contexts.

EXPERIMENTAL SET-UP



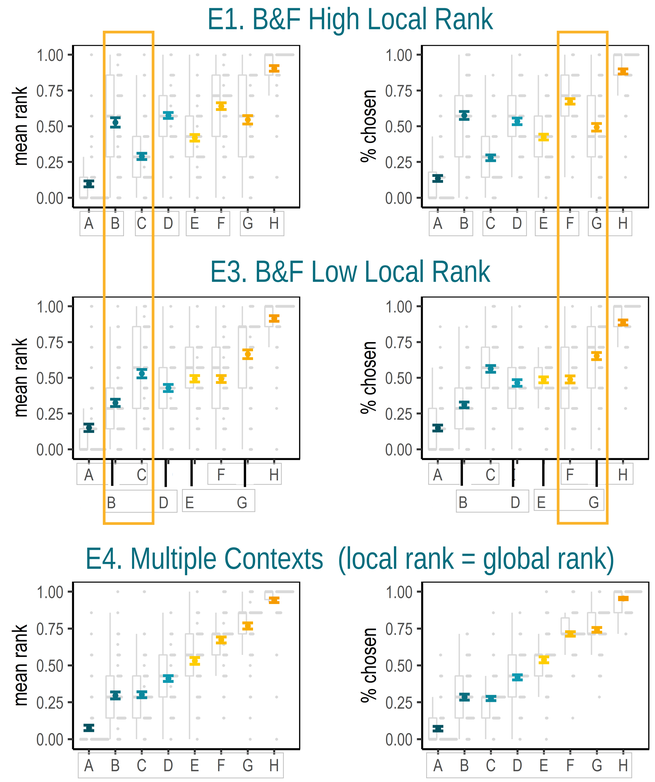


DIFFERENT LEARNING MODALITIES



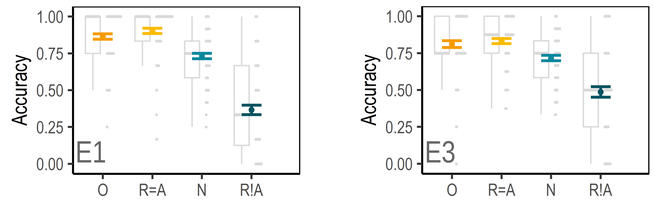
Regardless of learning modality, options with high local rank were rated higher and chosen more often than options with higher expected value and low local rank. Value judgements and choice-based responses were strongly correlated.

DIFFERENT LEARNING CONTEXTS



Options B&F were rated higher and chosen more frequently only if their learning pairmates had lower expected value. If it was higher, the pattern was reversed. Moreover, if options were presented in multiple learning contexs, responses were optimal.

CONTEXT AND ACCURACY



In all experiments, accuracy was high when options' local and global ranks agreed and low when they opposed each other.

Inserm ENS DEC DÉPARTEMENT D'ÉTUDES COGNITIVES PSL UNIVERSITÉ PARIS