Modelling value-based decision-making in daily tobacco smokers after experimental manipulation of mood

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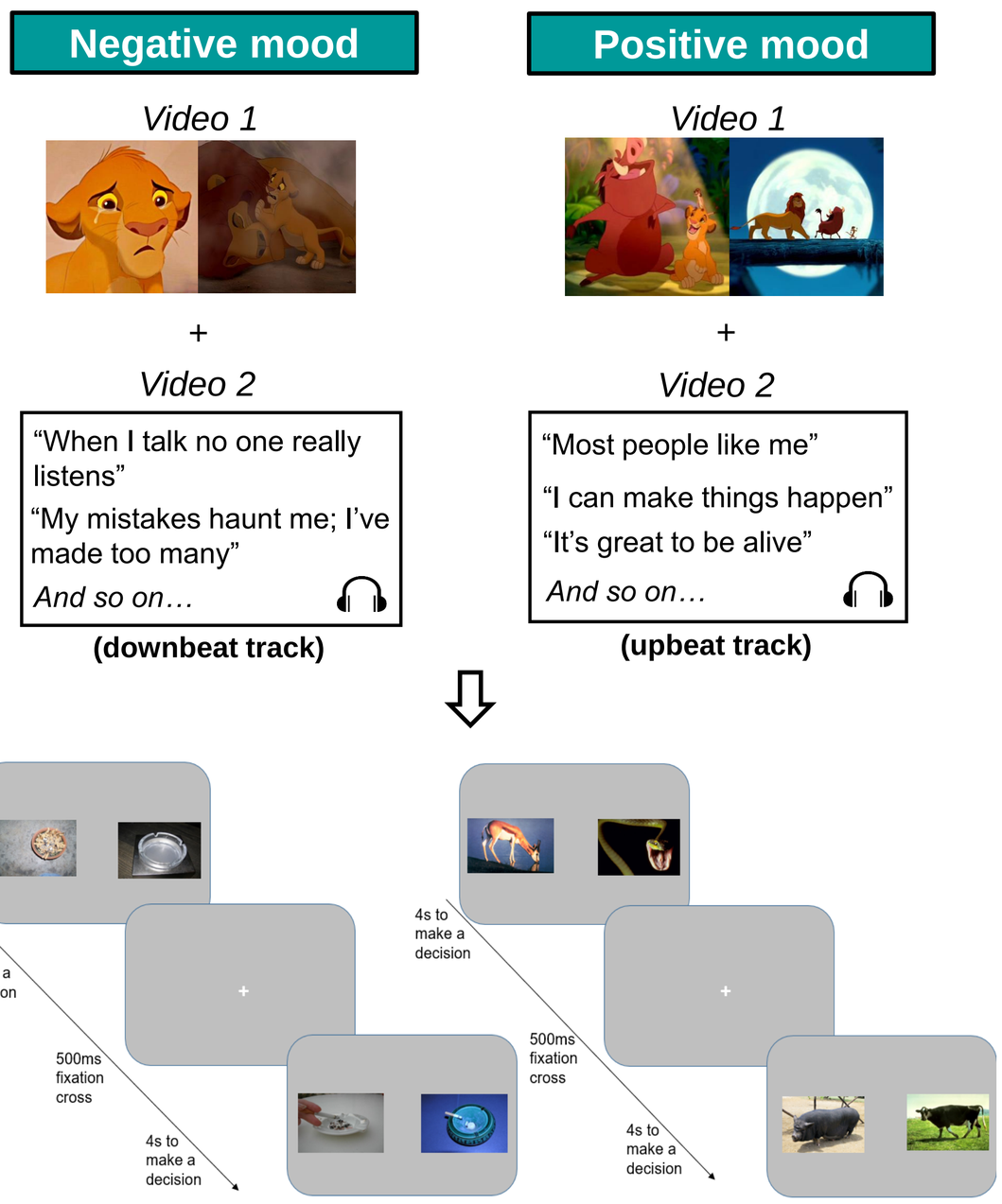
Background

- Inducing negative mood increases tobacco value indexed by increased tobacco choice (Hogarth et al., 2015)
- However, less is currently known about the *underlying mechanisms* through which valuation processes influence tobacco choice
- Aim: Apply a computational model of VBDM (Field et al., 2020) to decisions about tobacco and tobacco-unrelated cues after experimental manipulation of mood

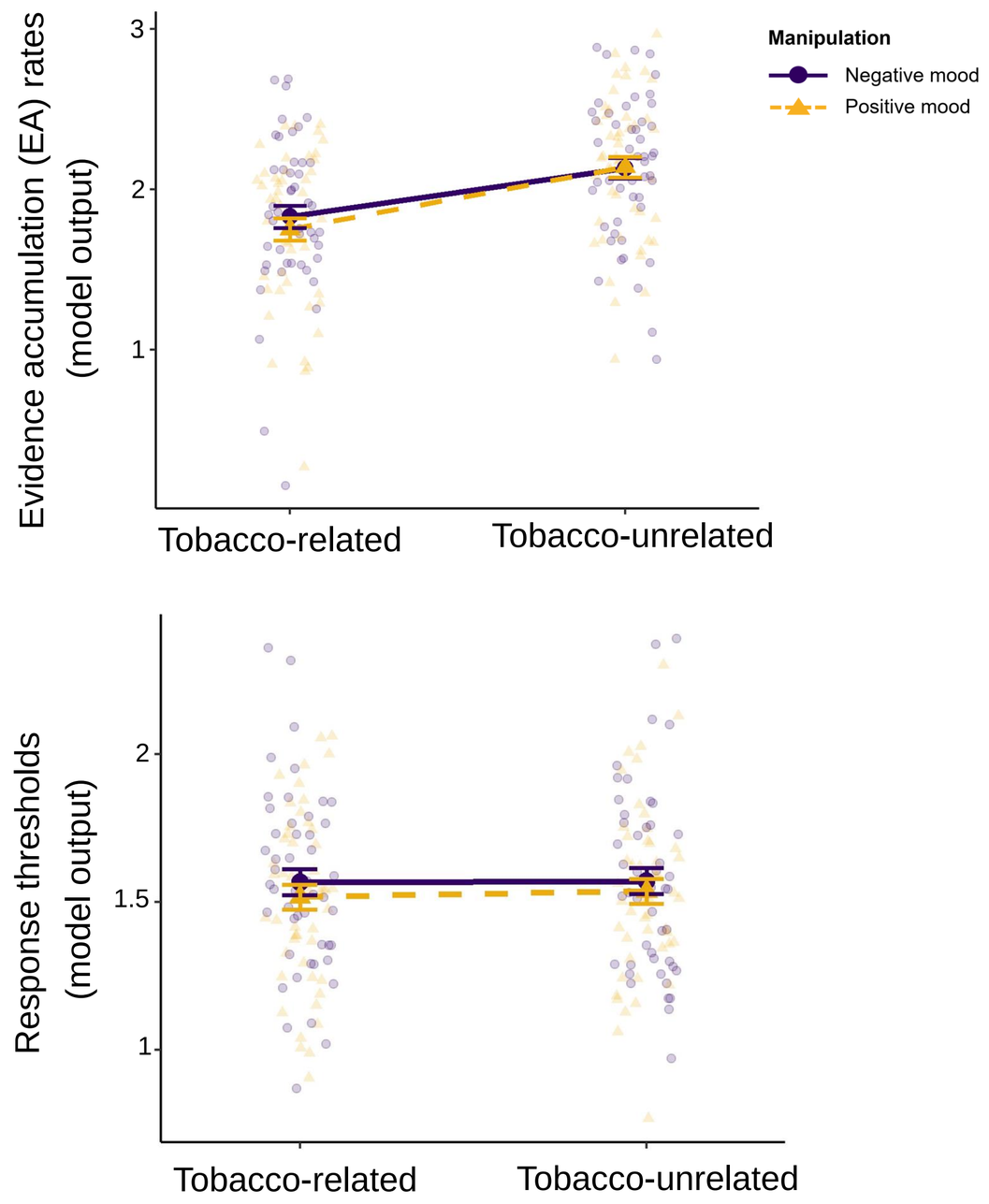
Method

- Pre-registered, within-subject manipulation design
- Forty-nine daily tobacco smokers (>10 cigarettes) were recruited via Prolific (www.prolific.co/)
- Participants first made value judgements about tobacco and tobacco-unrelated (animal) images
- They then underwent separate manipulations of mood (order randomised) before completing a VBDM task

Hypothesis: Evidence accumulation (EA) rates will be higher, and response thresholds lower, when making value-based choices about tobacco after negative mood induction compared to positive mood induction



Results



Conclusions

- **Experimental manipulation of mood did not lead to alterations in the internal processes that precede value-based decisions made about tobacco-related and tobacco-unrelated cues**
- Findings may be interpreted in line with research uncovering complexities within the relationships between mood and substance use (Dora et al., 2022; Tovmasyan et al., 2022)
- Future studies may replicate this research with other forms of tobacco value manipulation, such as nicotine deprivation (Lawn et al., 2015) and satiety (Hogarth & Chase, 2011)

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To view our study pre-registration, visit: tinyurl.com/SSA-reg

Scan for references!

Ethical approval was obtained from the University of Sheffield research ethics committee

All authors report no conflicts of interest