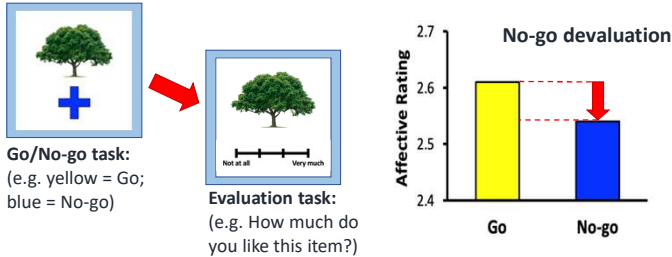


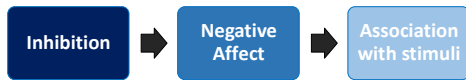
Cognitive control has affective consequences

Withholding a motor-response from a visual stimulus leads to relatively negative affective ratings.



Explanation: negative affect from cognitive inhibition

- Inhibitory signals trigger affectively negative responses that become associated in memory with the perceptual details of the stimuli.



Practical Applications

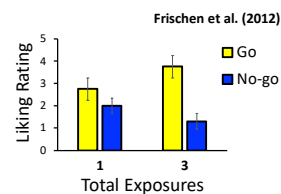
- Treatment of self-control disorders: reducing the motivational salience of addictive substances and problematic behaviours.
- However: we need to explore ways that could increase the magnitude of this No-go devaluation.



Can we increase the magnitude of this devaluation?

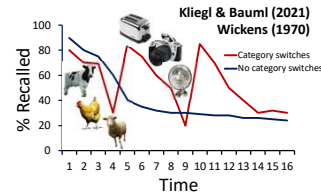
Salience of memory representations

Exposures



Seeing items before they appear on Go/No-go trials increases No-go devaluation. **Stronger memories support greater devaluation.**

Uniqueness of items



Category switches increase item distinctiveness and memory salience. **Do stronger post-switch memories support greater devaluation?**

Predictions

If pre-exposures to stimuli & category switches increase memory salience, we should see greater No-go devaluation for:

- Stimuli that have been seen repeatedly before a Go/No-go task than those seen for the first time.
- Stimuli occurring immediately after a category switch than those occurring before a switch.

Methods

Sample Size

N = 94

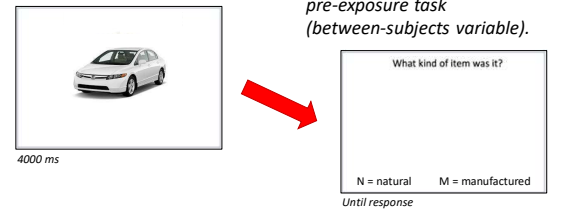
Demographics

- Mean age: 19, 83% female
- Online data collection through Pavlovla

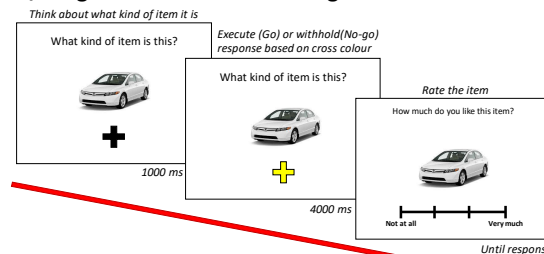
Stimulus Categories



Pre-exposure task



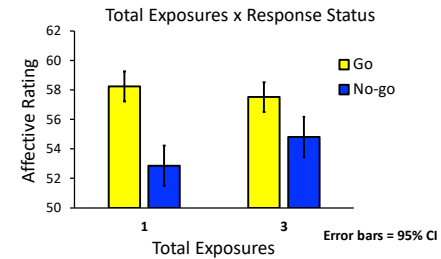
Go/No-go task & Affective Rating task



Go and No-go colours counterbalanced across participants.

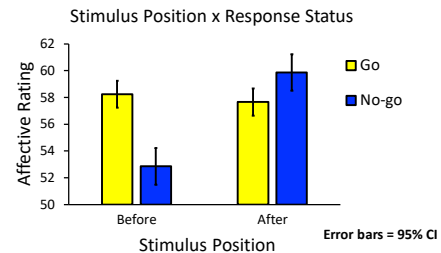
Results

Do we see greater No-go devaluation for pre-exposed stimuli? **No.**



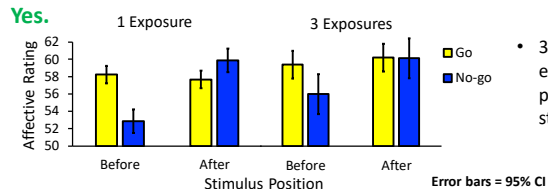
- No-go items rated more negatively than Go items
- (Go/No-go main effect, $p < .001$)
- But No-go devaluation **decreased** for pre-exposed items
- (Go/No-go X exposure interaction, $p = .85$)

Do we see greater No-go devaluation for stimuli immediately after a category switch? **No.**



- No-go devaluation **decreased** immediately after a category switch
- No-go items were subsequently rated as more affectively **positive**
- (Go/No-go X stimulus position, $p < .001$)

Does the effect of category switches depend on number of exposures? **Yes.**



- 3-way interaction: total exposures X stimulus position X response status, $p = .002$

Discussion

- We did not see greater No-go devaluation for stimuli that participants were pre-exposed to, or for stimuli occurring after a category switch
 - Possible that memory salience does not have an impact in the way we anticipated
- Theoretical finding that category switches lead to more positive affective ratings of No-go items
 - Clinical applications regarding the treatment of self-control disorders

Future directions:

- Further research is required to explore potential alternative explanations for the interactions (e.g. mere exposure effect, surprise)
- Exploring more ways in which memory salience and stimulus devaluation can be achieved (memory task)