Abstract Number: 1141

PRESENTER

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Background

- A salient stimulus can overshadow a nonsalient even when both are predictive of the response.
- When a cue is contingent with the occurrence of a target response, it can create a contingency learning effect.
- Immediate Stimulus Repetition trials can explain CL effect.

Does overshadowing occur by contingency learning or stimulus repetition effects?

Methods

N=70 & N = 67
English speaking Adults

Prolific

Odd/Even number categorization Task

- Compound Learn Display → Both Salient and Nonsalient cue(For eg., G (salient) and X (nonsalient))

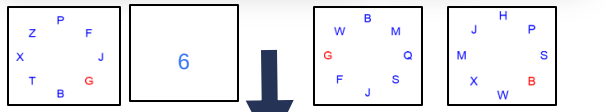
Contingency with the target response: If contingent → Valid; If not contingent → Invalid trial

- Single Cue Test Display → Either the Salient/Nonsalient + valid/invalid target based on contingency; Test for Overshadowing

Contingency Guessing Trials:

A "?" is shown in place of a number and a response is pressed.
Awareness Questionnaire with questions regarding contingencies is shown.

Experiment 1: Presented in between the experiment and at the end experiment.
Experiment 2: Presented only at the end of the experiment



Compund Learn Display | Response(right) Even Number | Salient Single Cue Display | NonSalient Single Cue Display

1. **2x2 ANOVA: Validity (Valid vs Invalid) x Saliency(Salient vs Nonsalient)**
2. **Mixed 2x2x2 ANOVA: Validity x Saliency x Awareness**

Aware/ Unaware based on the guessing trials' accuracy.

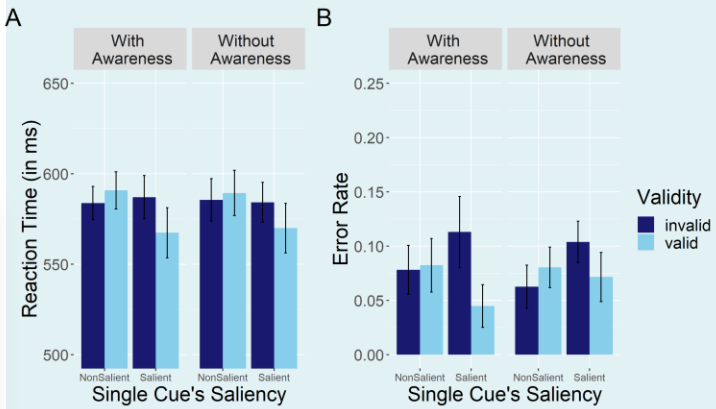
3. **MLM analysis**

To check for stimulus repetition effects

If you know you know!

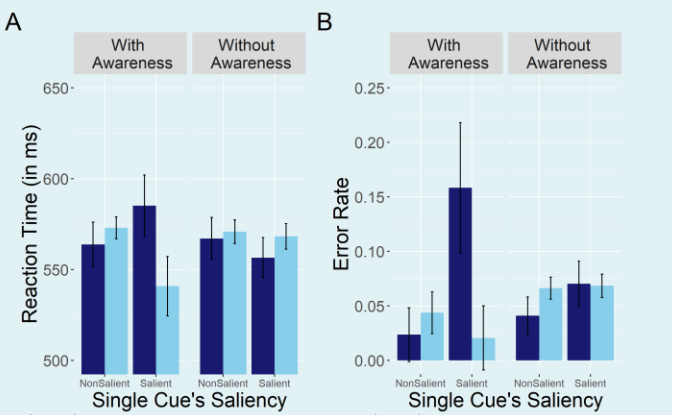
Awareness modulates overshadowing of salient over non-salient cues

Experiment 1



$F(1,68)=0.28$, $p=.596$, $\eta_p^2<.01$ | $F(1,68)=0.45$, $p=.504$, $\eta_p^2=.01$

Experiment 2



$F(1,65)=13.93$, $p < .001$, $\eta_p^2=.18$ | $F(1,65)=11.39$, $p = .001$, $\eta_p^2=.15$

Results

1. Overshadowing Effect: 2- way interaction Validity x Saliency for Single Cue Test Trials

	Experiment 1	Experiment 2
Reaction Time	$F(1,69) = 8.02$, $p=.006$, $\eta_p^2=.10$	$F(1,66) = 3.29$, $p = .074$, $\eta_p^2=.05$
Error Rate	$F(1,69) = 13.9$, $p < .001$, $\eta_p^2=.17$	$F(1,66) = 14.7$, $p < .001$, $\eta_p^2=0.18$

2. With Awareness Scores: 3-way interaction Validity x Saliency x Awareness Level
   - ➢ Contrasting results for Experiment 1 and Experiment 2 which differed in placement of guessing trials

	Experiment 1	Experiment 2
2-way interaction	Remained significant for RT and ER	Not significant for RT but significant for ER
3-way interaction	Not significant for both ER and RT	Significant for both RT and ER

3. MLM analysis did not reveal any effect of previous response or last occurrence → NO benefit from stimulus repetition in overshadowing.

Conclusion

1. Overshadowing effect is driven by awareness of the contingencies and not by stimulus repetition effects
2. Once the awareness was tested at the end (Experiment 2) rather than nudging participants during the experiment (Experiment 1), awareness played a moderating role in driving the overshadowing effect

Overshadowing occurs when one is aware of the contingency relation between the cues and the response.

In the (K)now: Dissociating the Role of Episodic Bindings Versus Insight-Based Contingency Awareness for Overshadowing Effects in Learning

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BINDING AND RETRIEVAL IN ACTION CONTROL