

# Attentional processes in multiple-cue judgments

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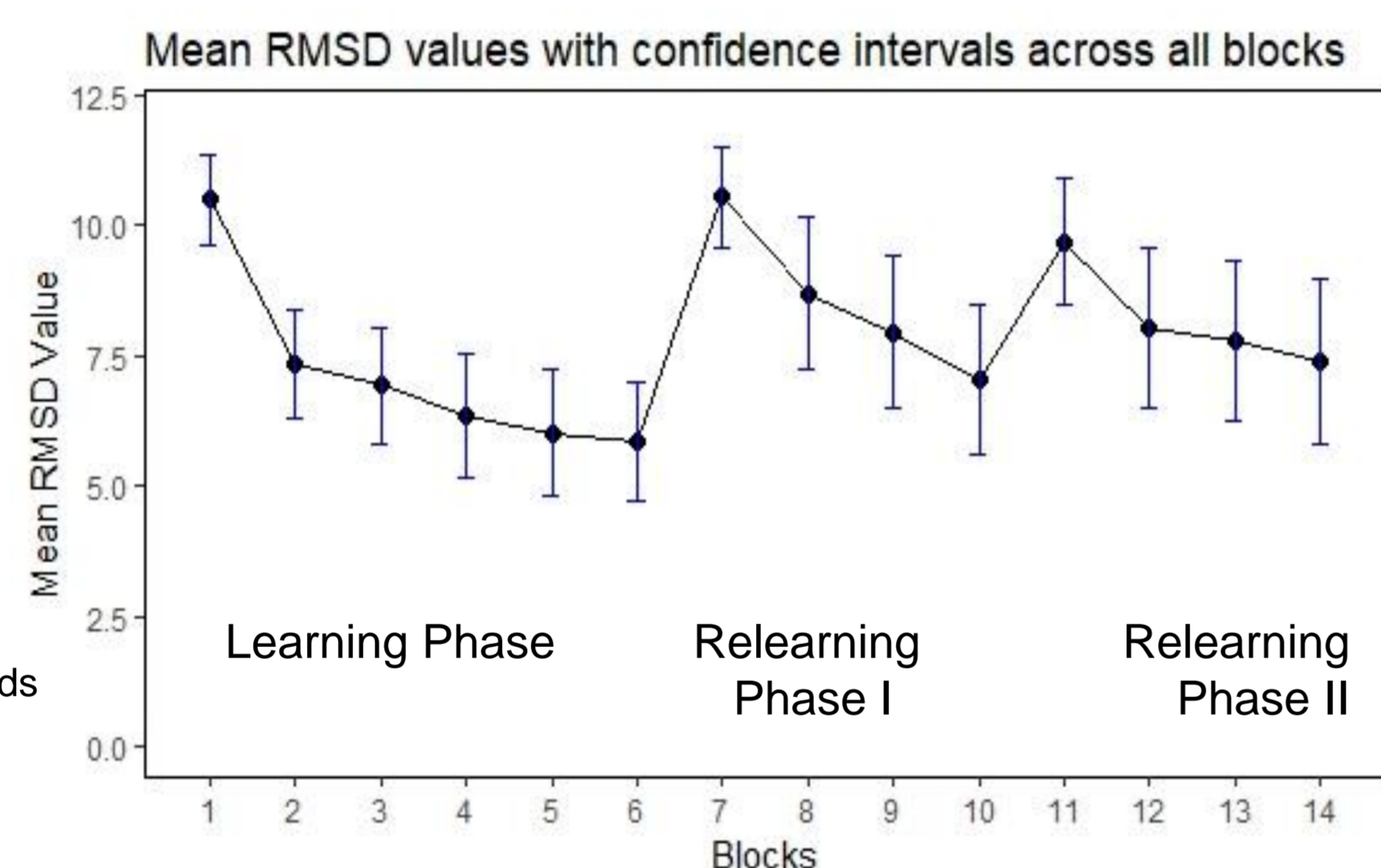
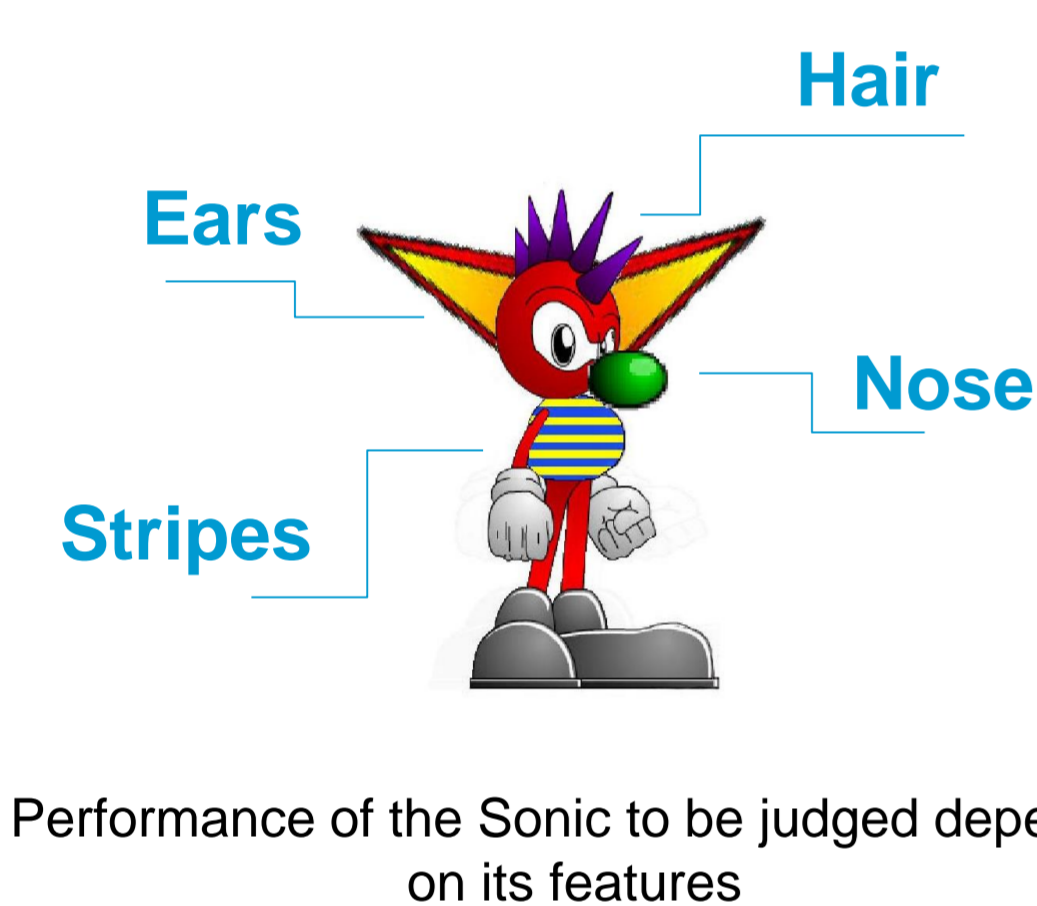
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## Abstract

This study addresses the question of how attention interacts with the importance people assign to different aspects and thereby allows individuals to detect and adapt to changes in the features' importance. Past research suggests that individuals pay more attention to salient information, when no prior knowledge is available, but learning shifts attention towards more predictive features. However, it is still unclear if individuals adjust their hypotheses about each features' importance because new, salient information is introduced or previously learned information becomes irrelevant. To contrast these two attentional mechanisms, participants learned to predict in an initial learning phase which feature was important for making a correct judgment. In two subsequent relearning phases, the feature that best predicted the judgment changed, while another feature became salient. We manipulated salience by increasing the dispersion on the respective feature. After each judgment, participants rated how important each feature was for their judgment. As predicted, judgment accuracy declined after the predictive feature changed. However, people still rated the previously important feature as important for their judgment, but neglected salient new information. These findings suggest that people attribute judgments errors more strongly to a previously important feature than a currently more salient one.

## How do we make a judgment in a changing environment?

- To make accurate judgment, individual needs to find out which pieces of information are relevant for the decision at hand and which aspects can be ignored.
- It is assumed that judgments are formed by weighting and then combining the feature (cue) values linearly additively:  $w_1X_1+w_2X_2+w_3X_3+w_4X_4=Y$ ,  $w_i$  – cue weight assigned by the judge,  $X_i$  – cue value and  $Y$  – judgment.



## Prediction

In the beginning of relearning phase the weight of the important cue decreases compared to the end of the previous phase while the weight of salient cue increases up until participants start improving their judgment and important cue weight increases again.

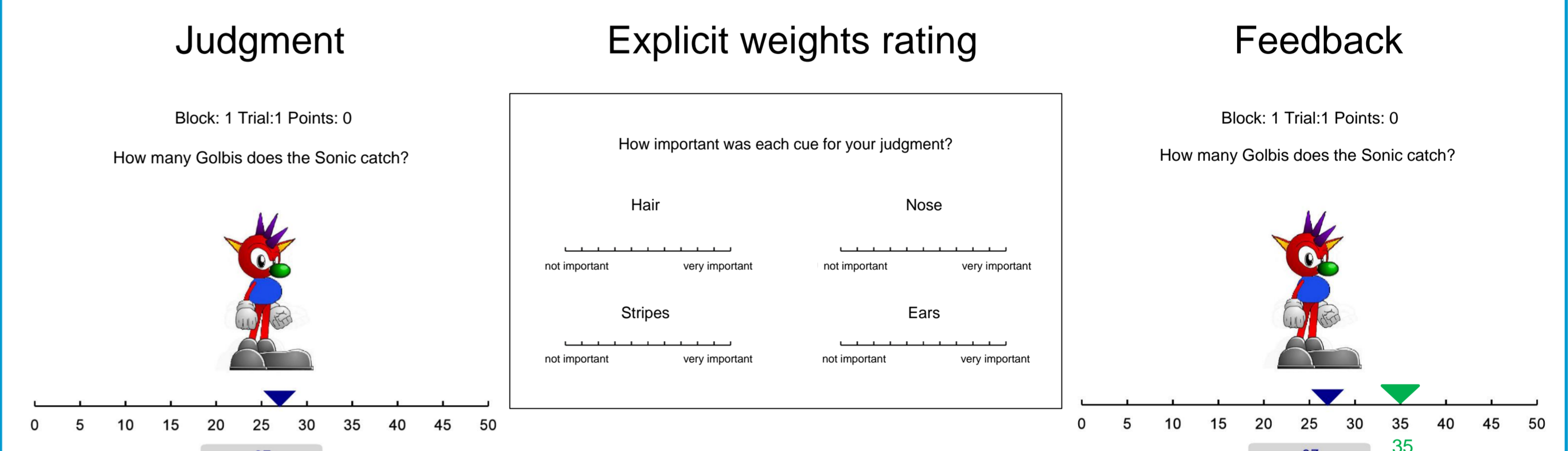
## What is the role of attention?

Attention allows to selectively process information and to prioritize certain pieces of information, while ignoring less relevant cues.

If no prior knowledge about the decision task available:

- Individuals pay more attention to visually salient information and weigh it higher
- Attention shifts towards more predictive features as a result of learning

## Experimental design



### Experiment 1

$N = 50$  (38 female)  
 $M_{age} = 23$  ( $SD = 3.35$ )

Within-subject design  
14 blocks (350 trials)

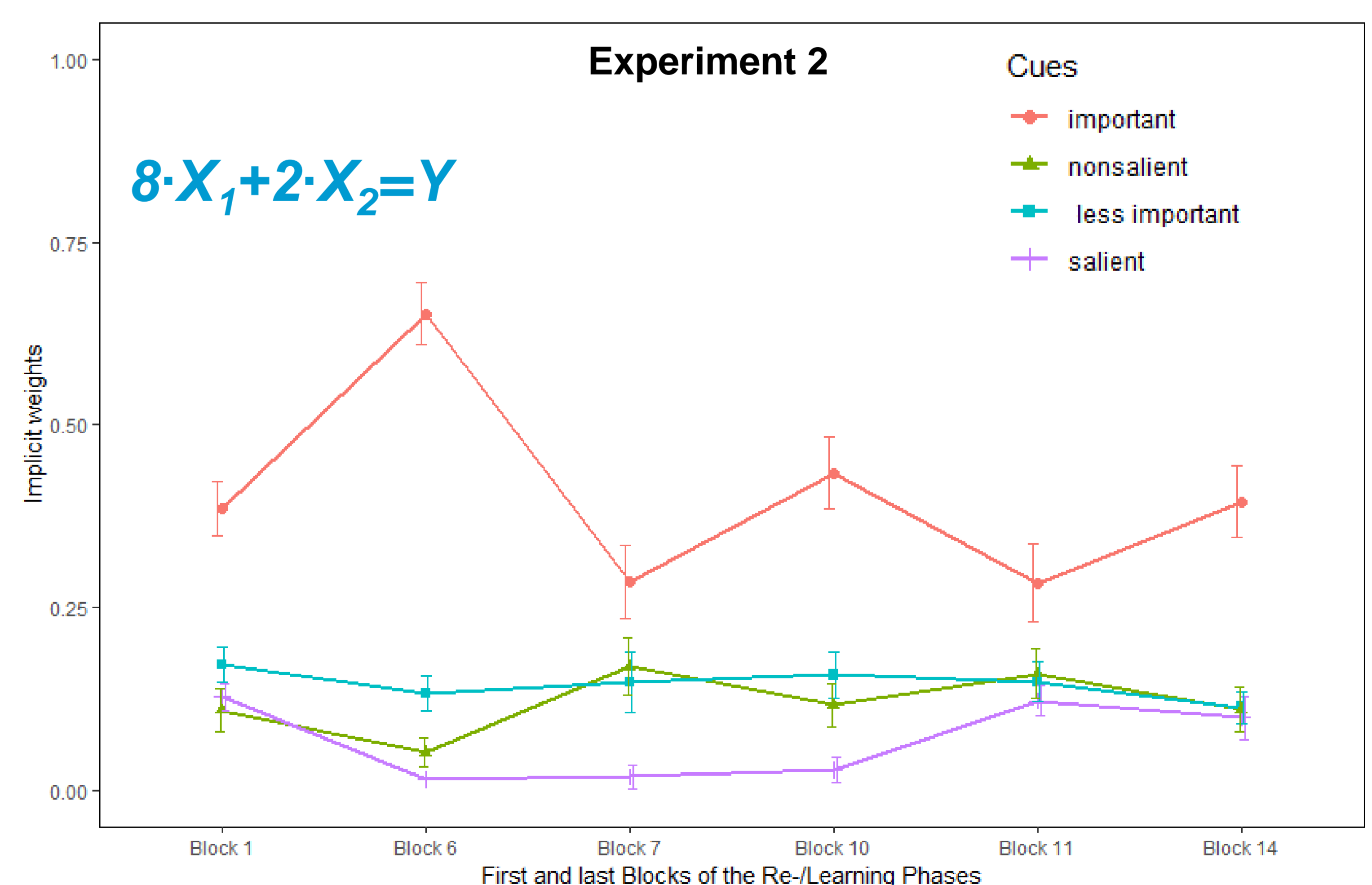
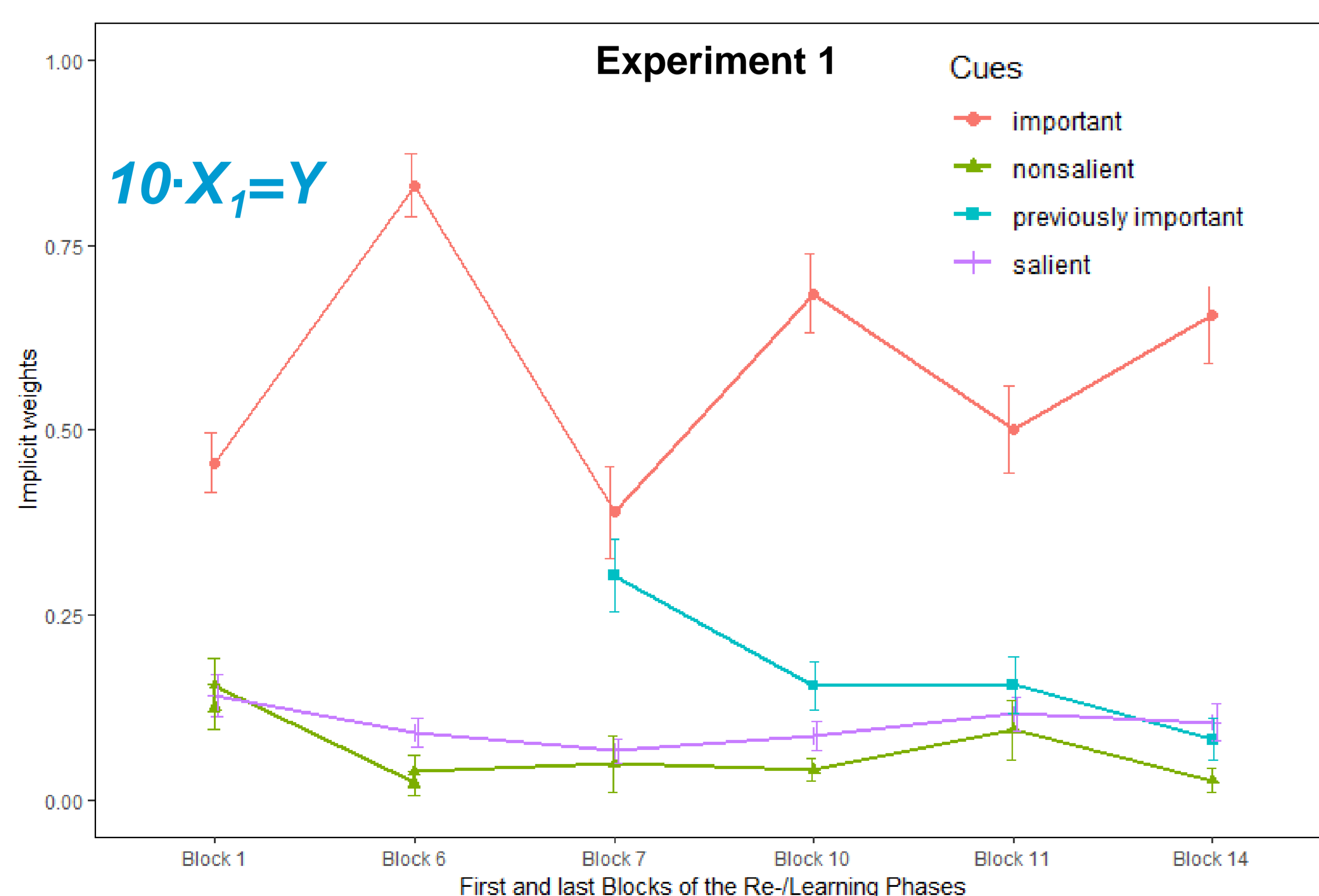
### Experiment 2

$N = 50$  (37 female)  
 $M_{age} = 23$  ( $SD = 3.18$ )

In two subsequent relearning phases, we changed which feature(s) predicted the criterion and another feature became salient.

## Results

Implicit weights calculated with linear regression for the six critical blocks of the experiment (the beginning and the end of each re-/learning phase)



## Conclusions

Participants learn fast and it is important to use relearning phases to capture the change.

People seem to attribute judgments errors more strongly to a previously important feature than a currently more salient one. This result highlights that people rely more on the learned information than the new salient one when adjusting their hypotheses about features' importance.