

Effects of salience on visual working memory disappeared!

Context during retrieval matters.

Martin Constant and Dirk Kerzel
University of Geneva

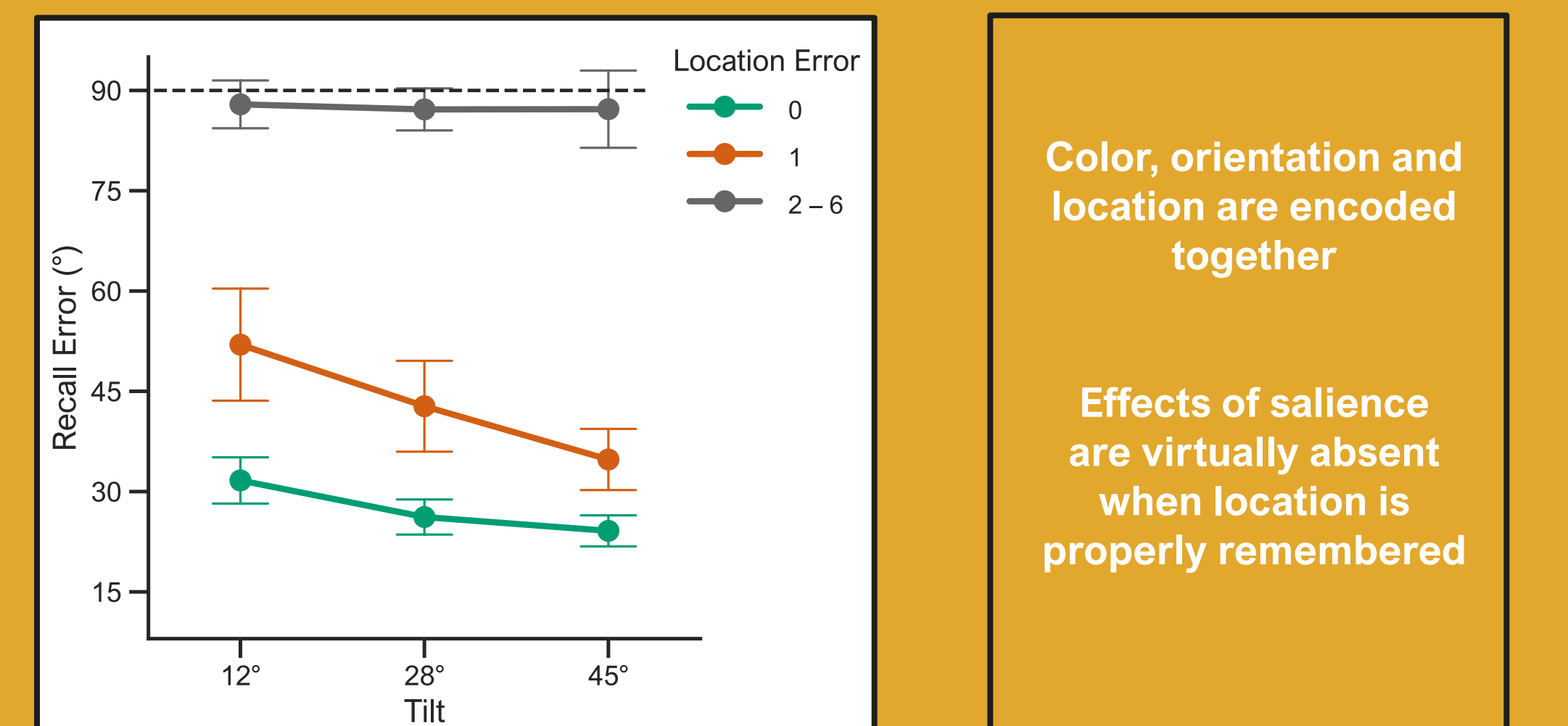
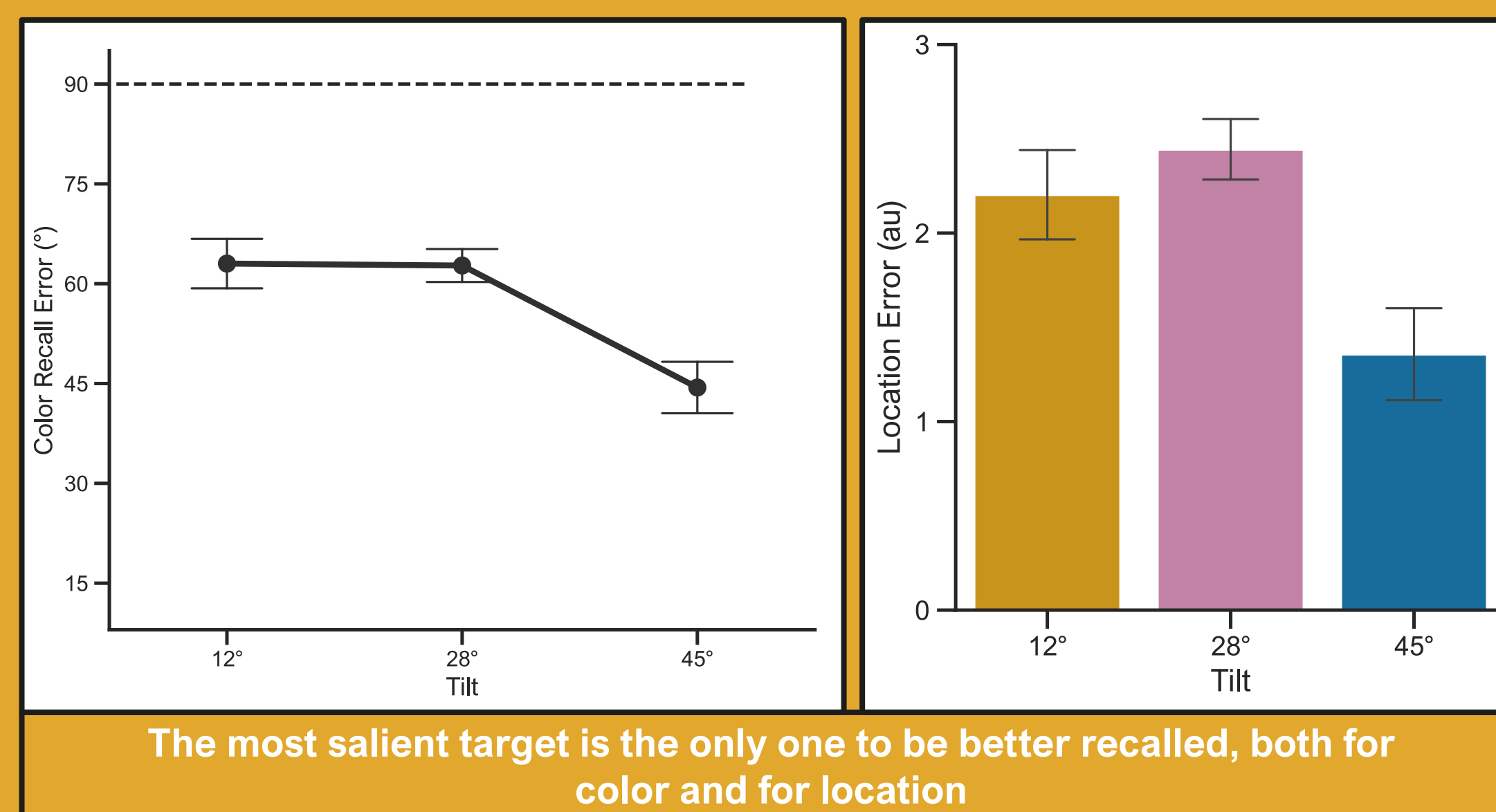
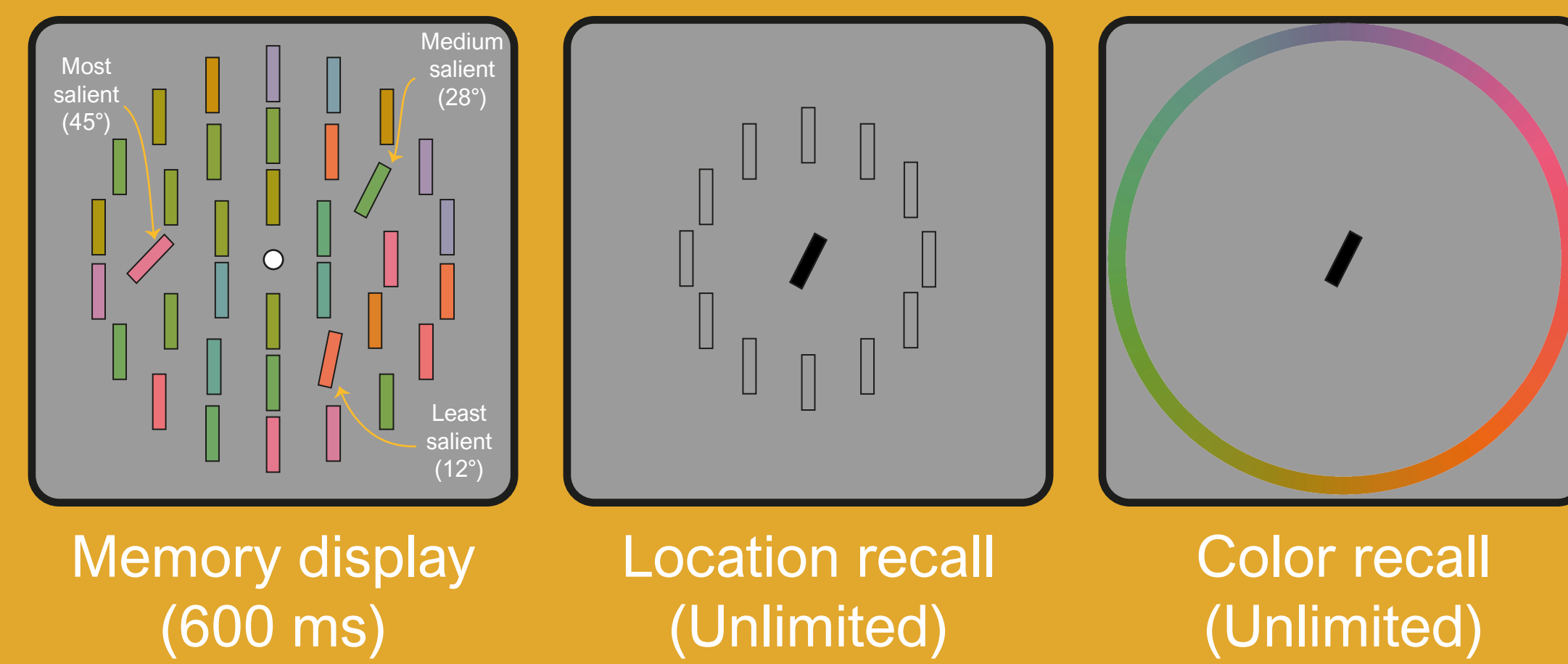
We investigated whether salience influences visual working memory for location the same way it does for color^[1,2,3]
We thought the salience might exert its influence through a reduction of swap errors.
To our surprise, parametric effects of salience disappeared, leaving only a boost for the most salient target.

We hypothesized that this could either be due to:
(1) The fact that participants had an interfering task between encoding and color recall
(2) The fact that the target was presented alone at recall and therefore lost its absolute salience

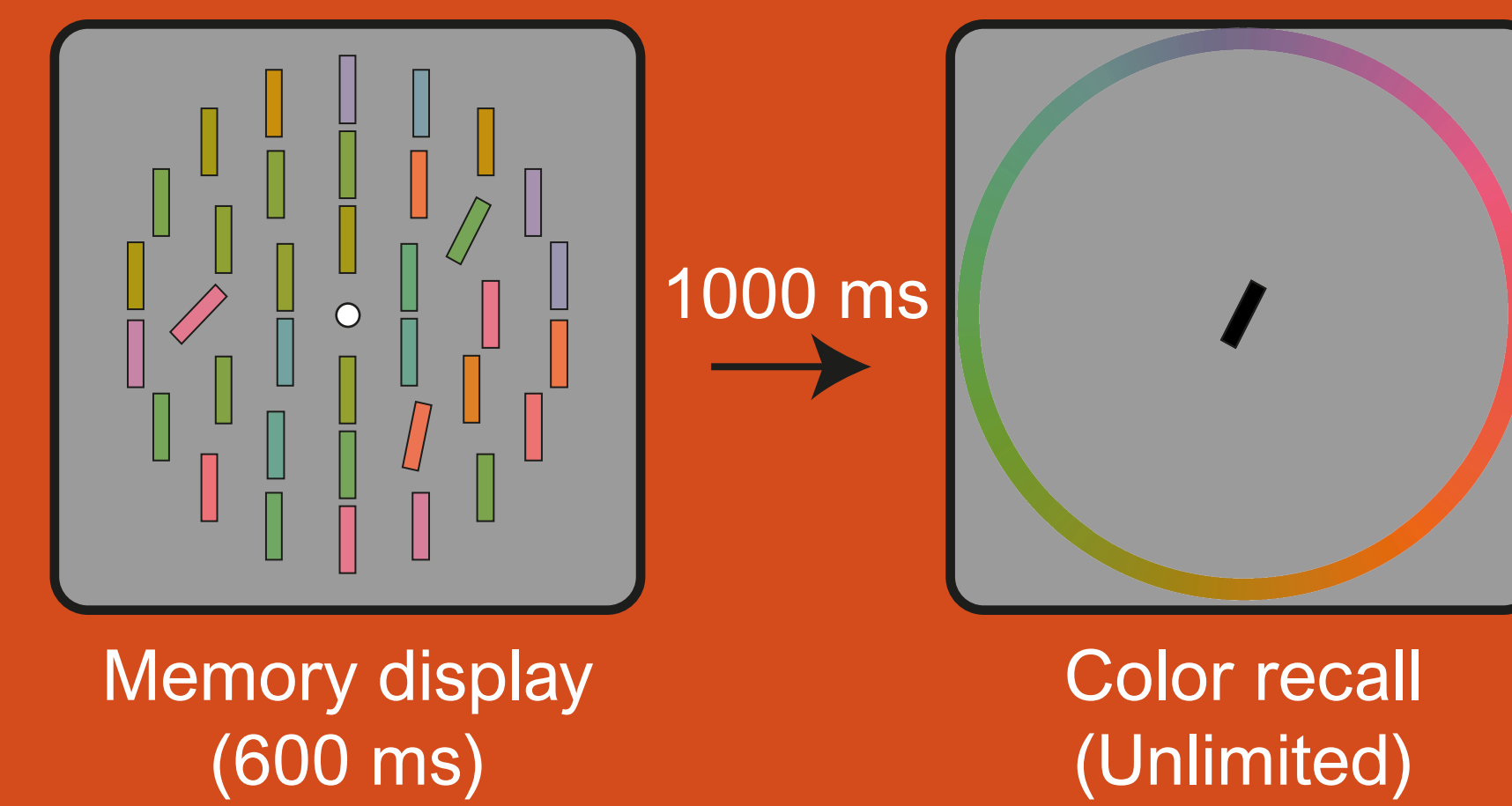
We again observed the same pattern of results and therefore ran a third experiment to investigate the second hypothesis. Here, we recreated the context of salience at recall to see whether salience itself was encoded.

Finally, we ran a fourth experiment with a different response modality, allowing us to investigate whether salience improves memory by reducing swap errors. We also used two different response displays to find out the conditions under which swaps are more likely.

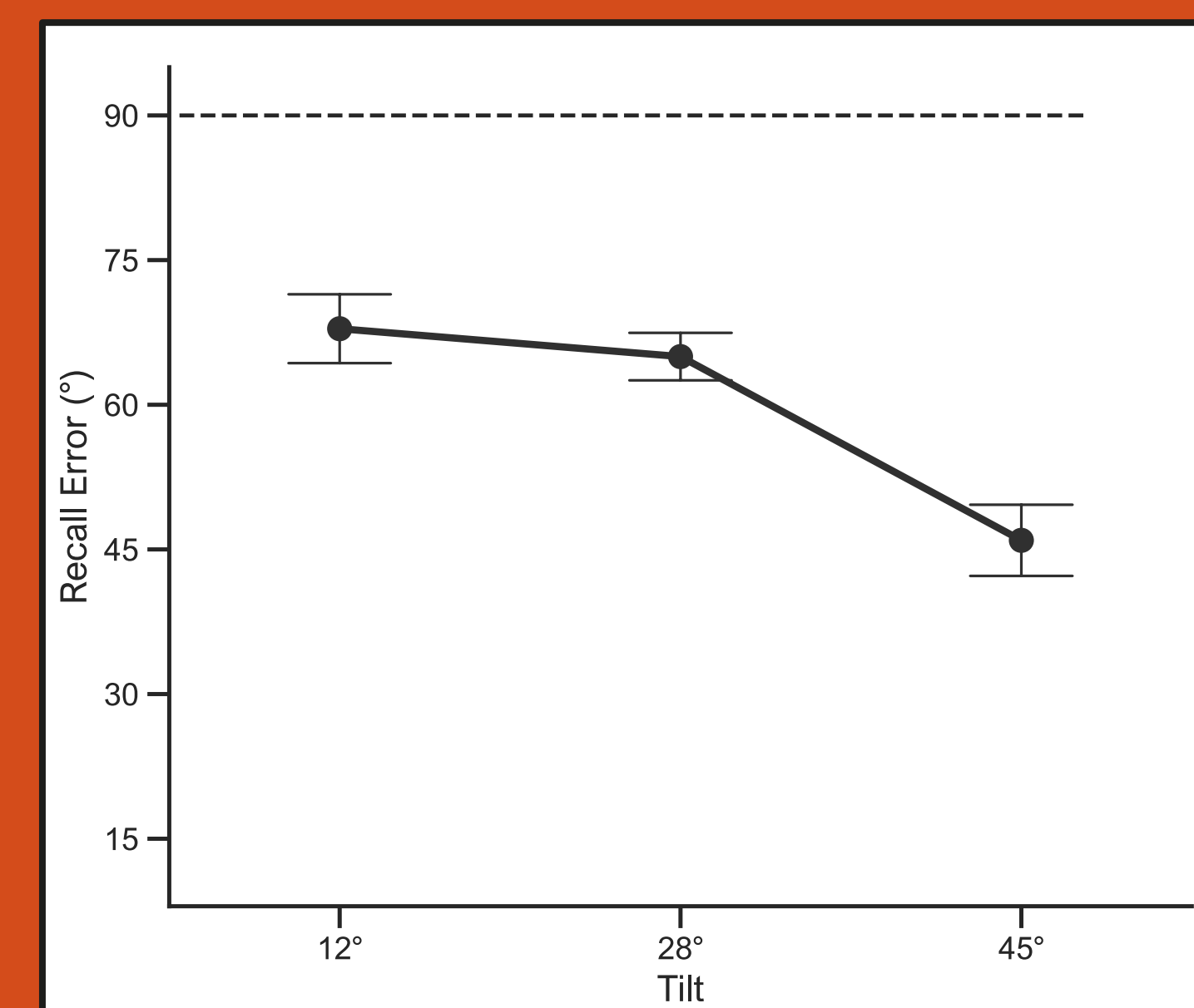
LOCATION AND COLOR RECALL



RULING OUT DUAL-TASK COST



The absence of parametric effects does not seem due to the interfering task

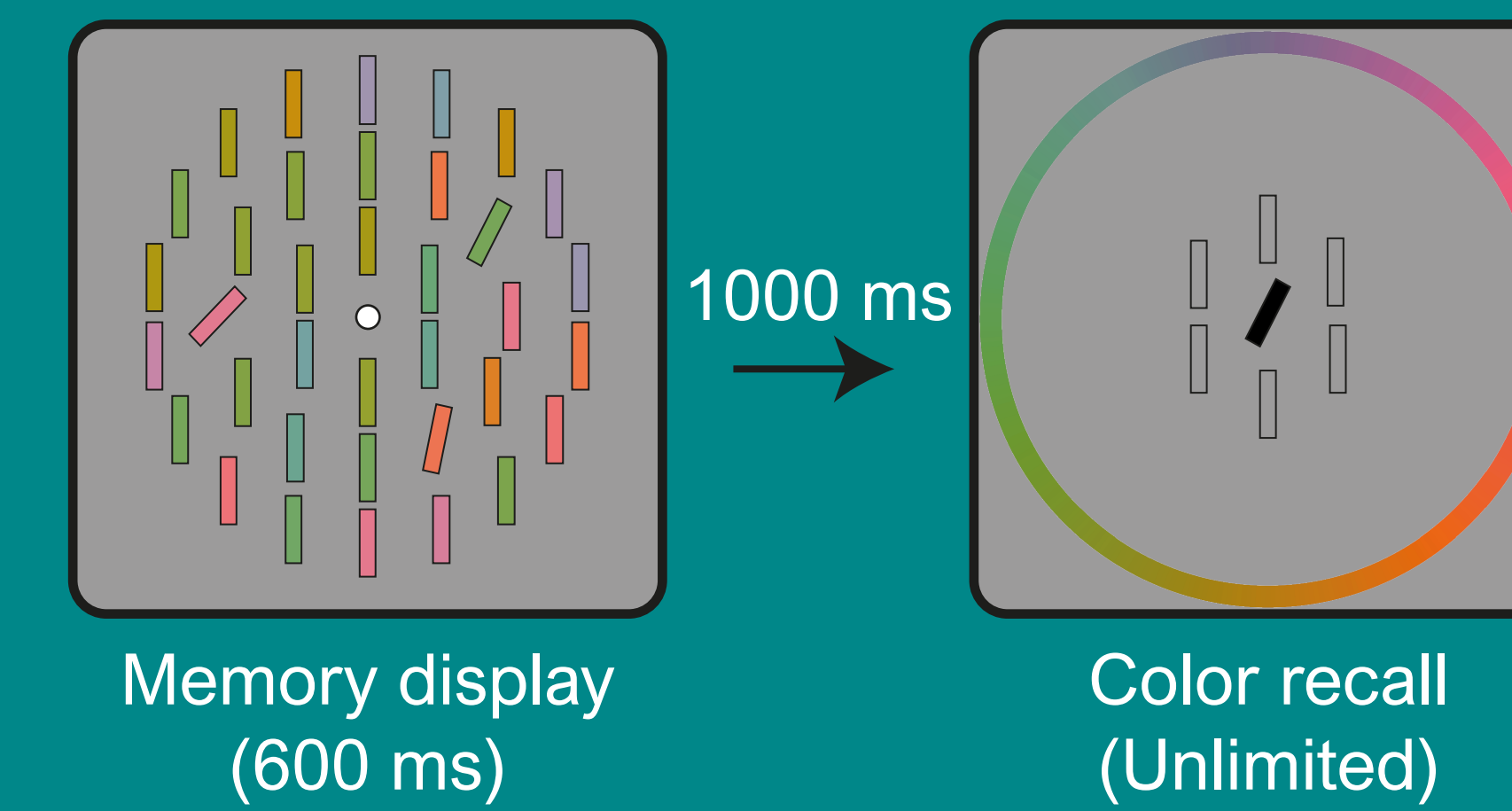


The most salient target seems very distinguishable from the other two and is therefore better recalled. It could be that it is kept in a special state.

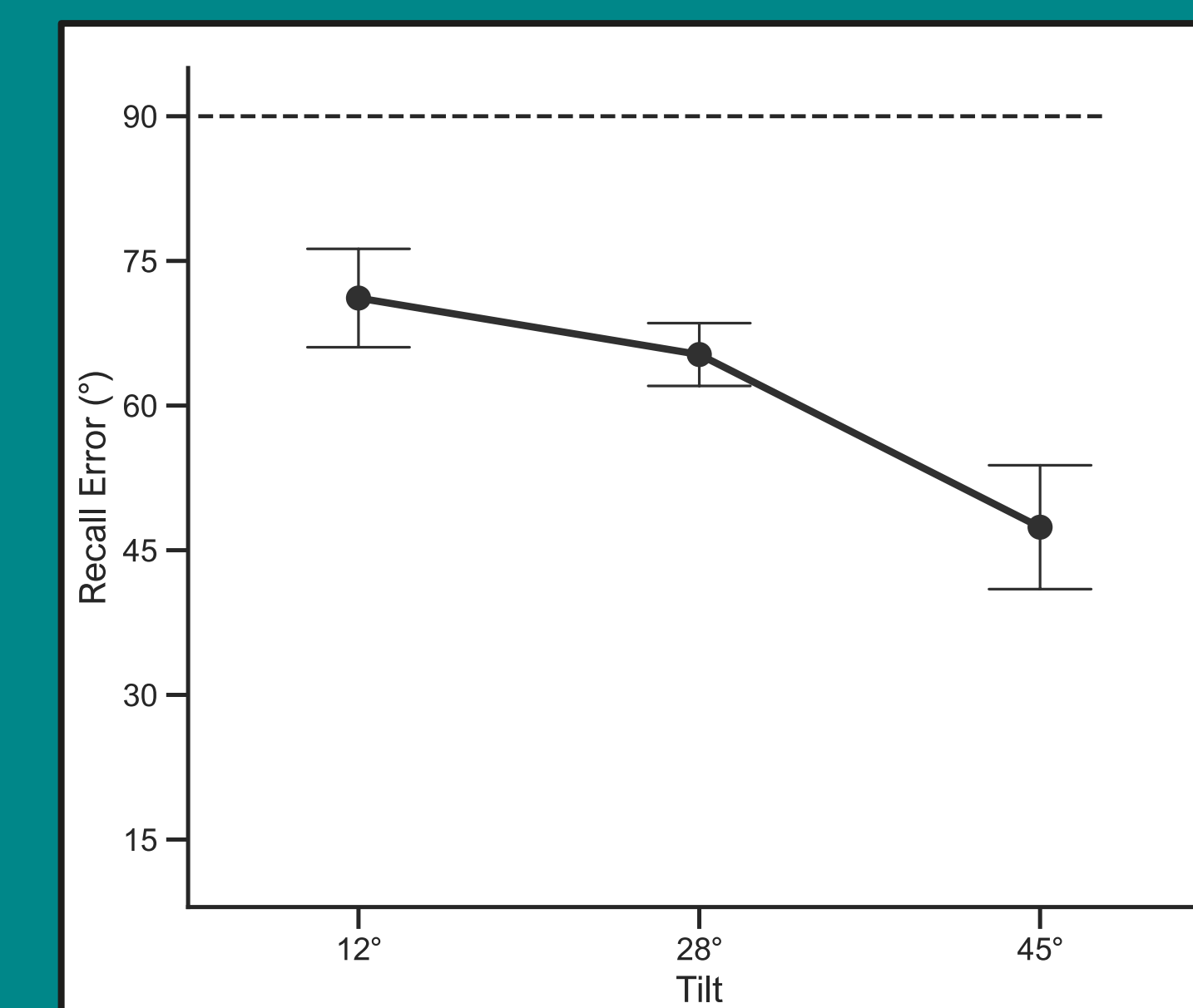
On the other hand, the less salient targets may not be very distinguishable based on their orientation alone. This could lead to more swap errors.

However, if salience, rather than orientation, is encoded, it might be beneficial to reintroduce vertical bars to restore the local feature contrast context.

CENTRAL RECALL WITH SALIENCE CONTEXT



The parametric effects of salience is technically back



A major divergence from previous studies is that, at recall, the probed target is not presented at its previous location. Overall, the average performance is

however quite poor. This could be for two reasons. (1) The target color might be encoded along with its location, and moving the target to the center during

recall disrupts encoding. (2) Once again orientation, even with salience context, is not enough to efficiently separate the less salient targets from each other.

4-ALTERNATIVE FORCED CHOICE

