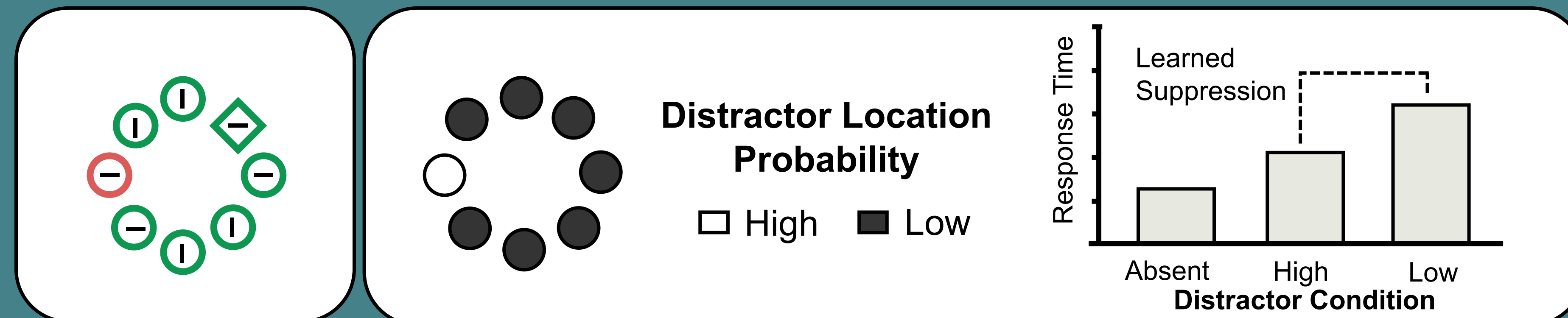


Not so Spatial After All? Learned Suppression of Probable Distractor Locations Acts on Spatially Invariant, Configural Representations

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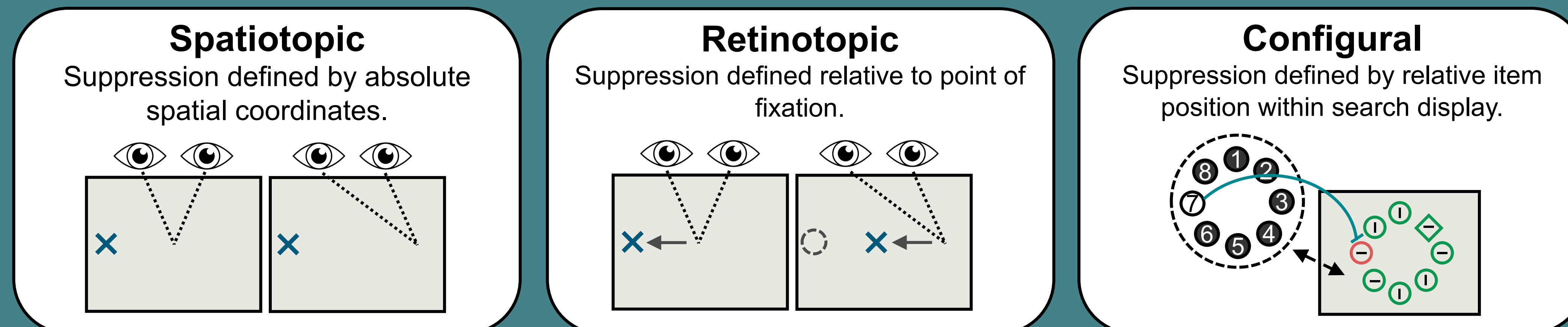


Attentional capture by a salient, singleton distractor is attenuated when presented at a location that frequently contains the distractor (i.e., learned suppression).



Adapted from Wang & Theeuwes (2018)

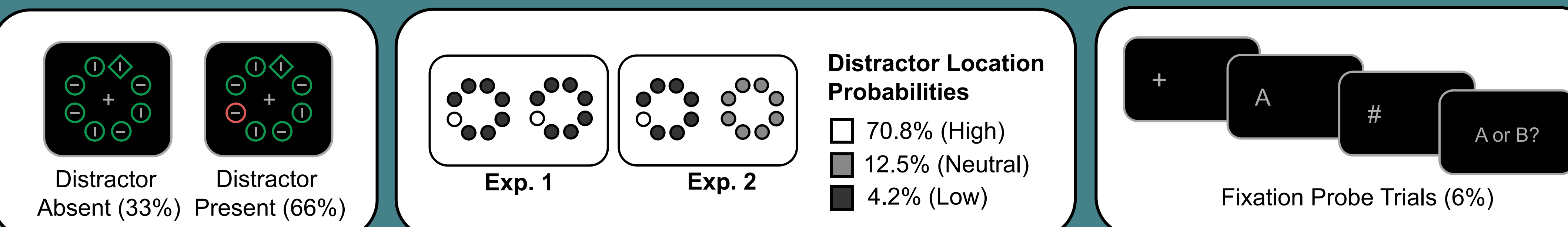
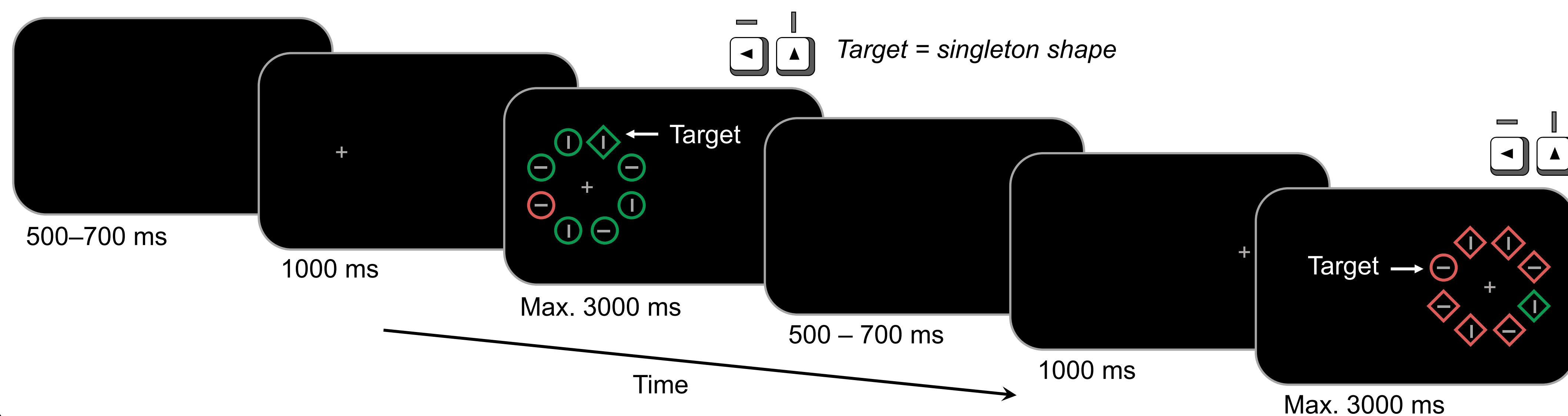
On what frame of reference does learned suppression of probable distractor locations occur?



To disentangle the contributions of these frames of reference, we examined the extent to which learned suppression transfers to unbiased search displays when spatial and/or featural contexts are varied across trials.

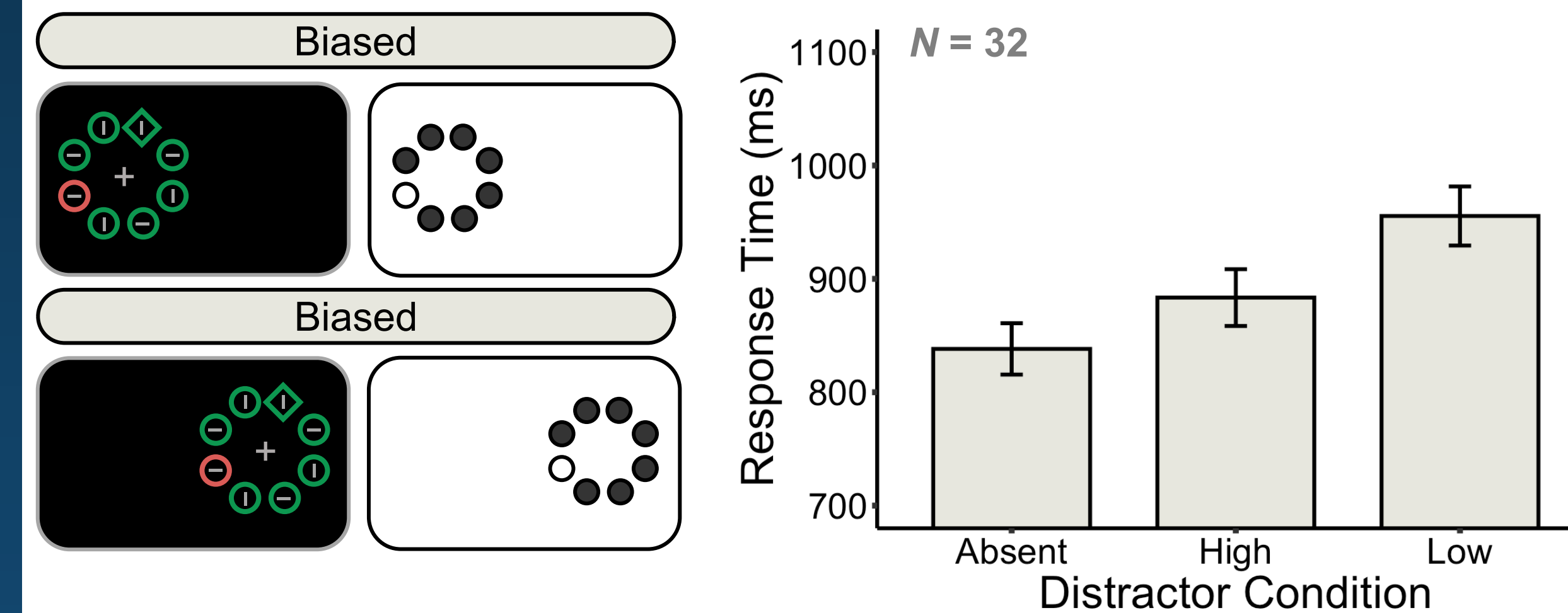
Experiments 1 and 2 Procedure

128 Trials x 6 Blocks (768 Total)



Experiment 1

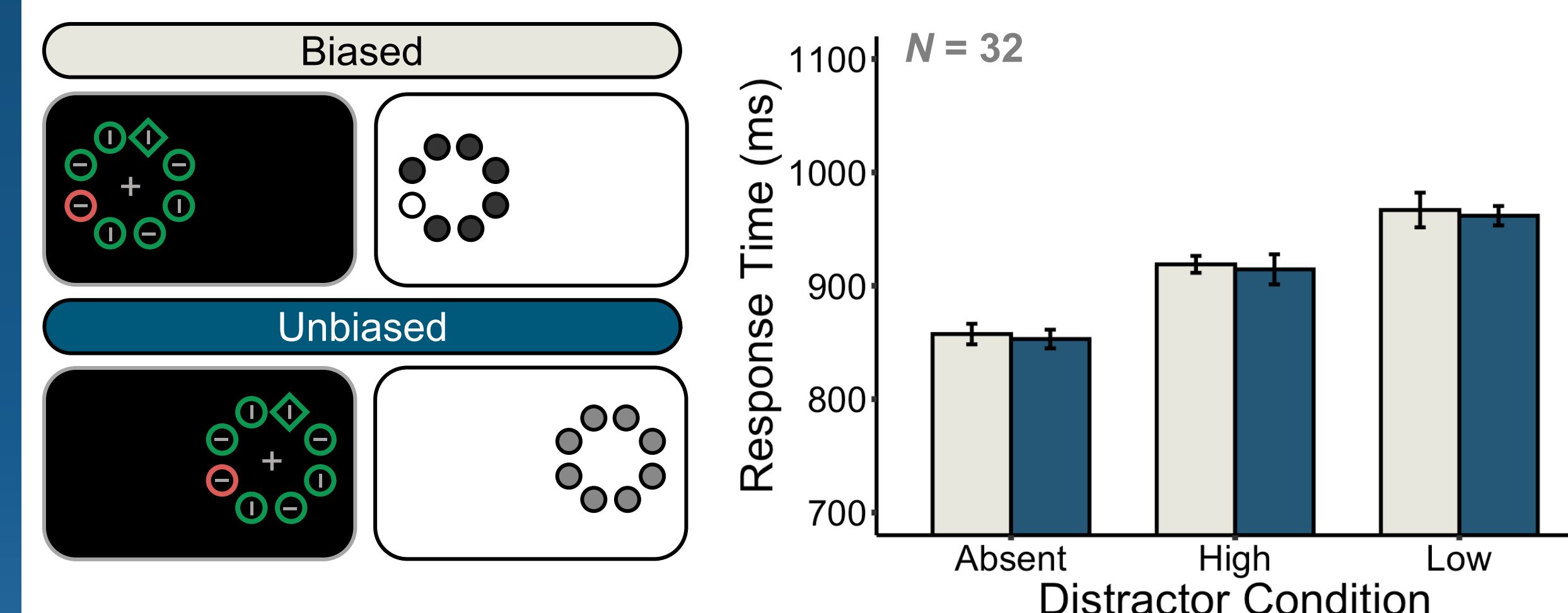
Search displays presented in different spatial contexts (i.e., left vs. right). Biased displays presented in both spatial contexts.



Learned suppression effect observed at high probability distractor location when biased displays presented in multiple spatial contexts.

Experiment 2

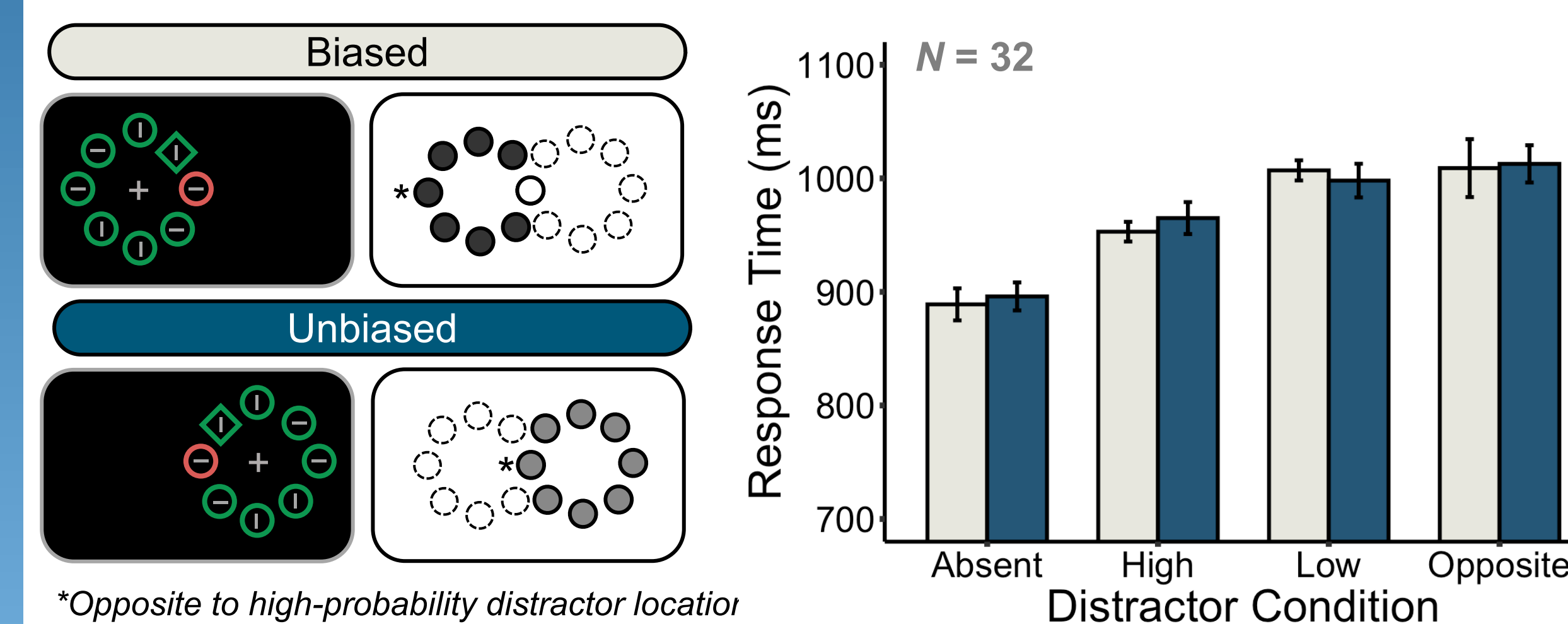
Biased and unbiased displays presented in different spatial contexts (i.e., left vs. right).



Learned suppression effect transfers to unbiased spatial context; consistent with retinotopic and configural frames of reference, but not spatiotopic.

Experiment 3

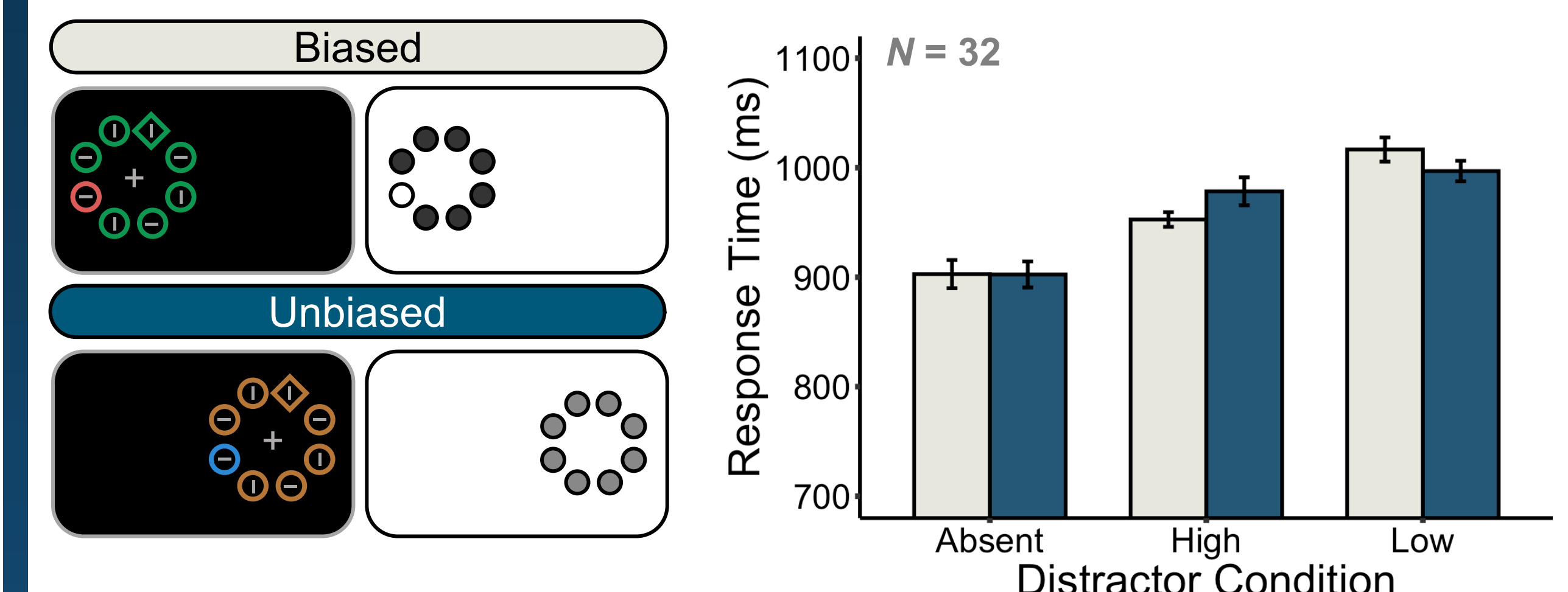
Biased and unbiased displays presented in different spatial contexts (i.e., left vs. right). Displays overlapped at high-probability distractor location.



Learned suppression effect transfers to unbiased spatial context; no evidence of suppression at absolute position of high-probability location in unbiased display.

Experiment 4

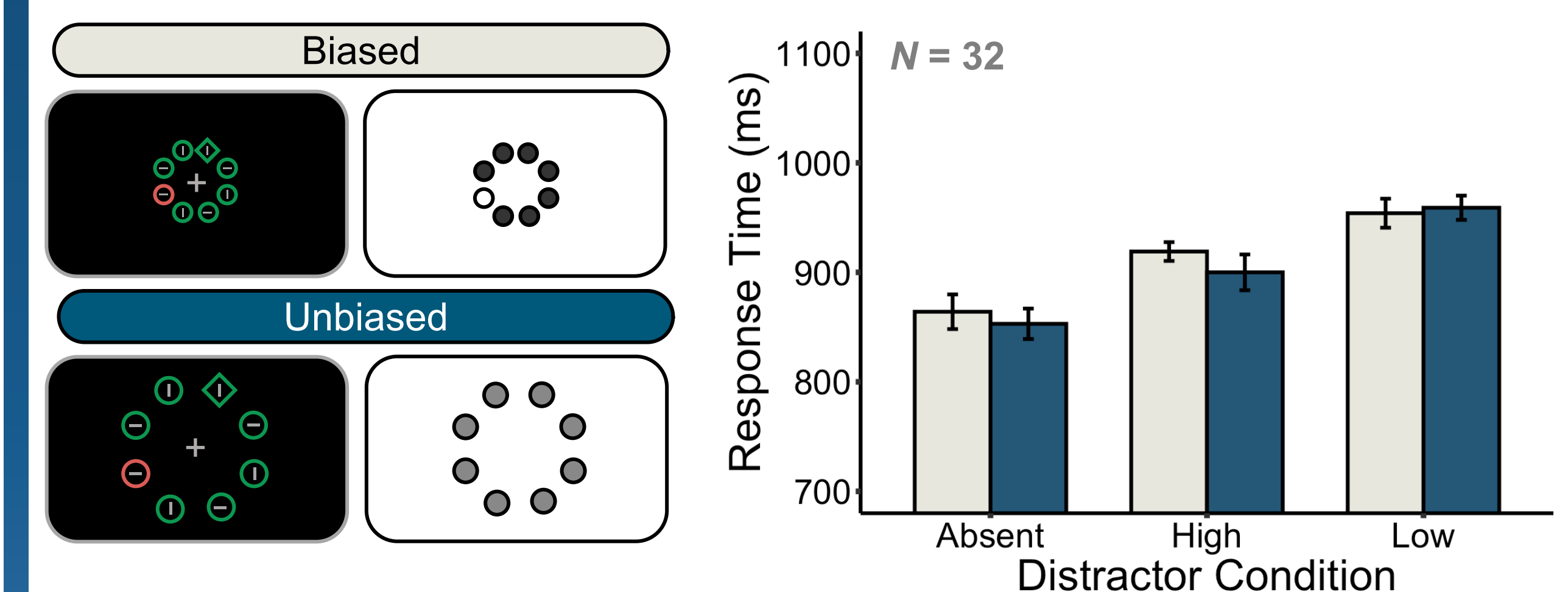
Biased and unbiased displays presented in different spatial contexts (i.e., left vs. right). Different color pairs used for displays.



Transfer of learned suppression to unbiased spatial context eliminated when differentiated by color pairings; consistent with configural frame of reference.

Experiment 5

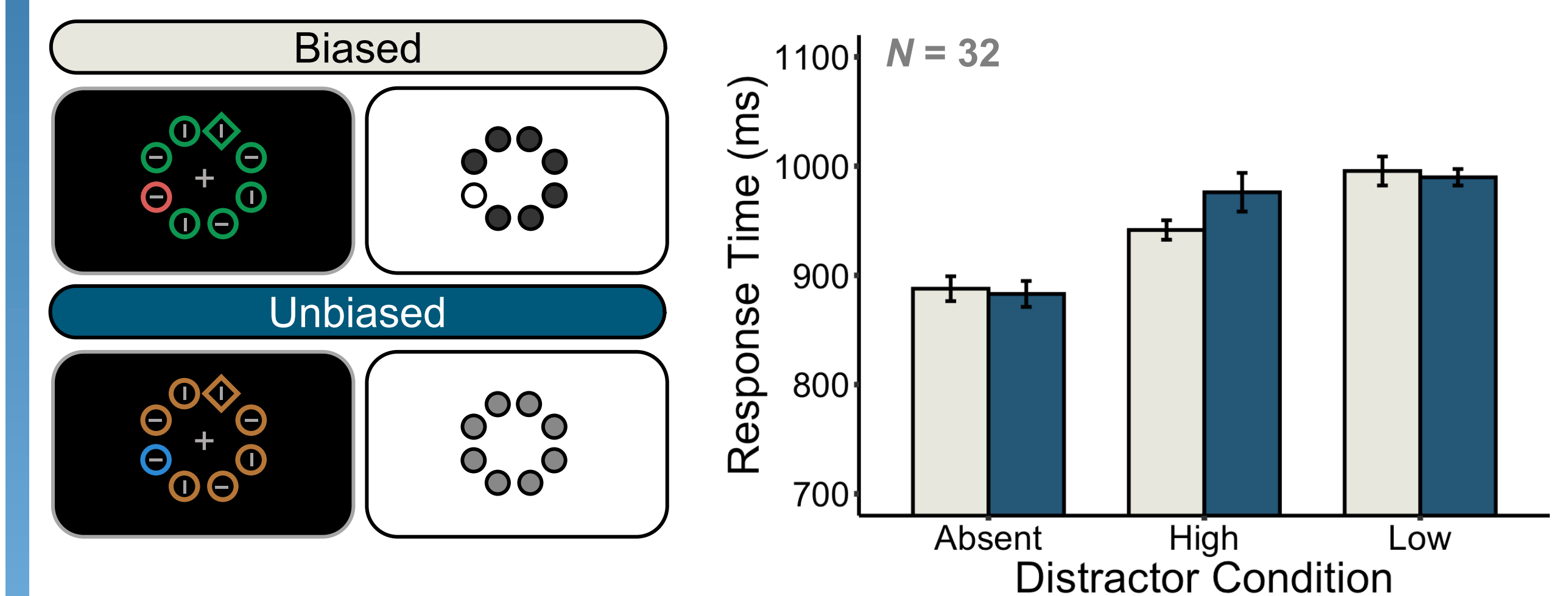
Biased and unbiased displays presented at different eccentricities (i.e., inner vs. outer).



Transfer of learned suppression to displays at unbiased eccentricity; consistent with configural frame of reference, but not retinotopic or spatiotopic.

Experiment 6

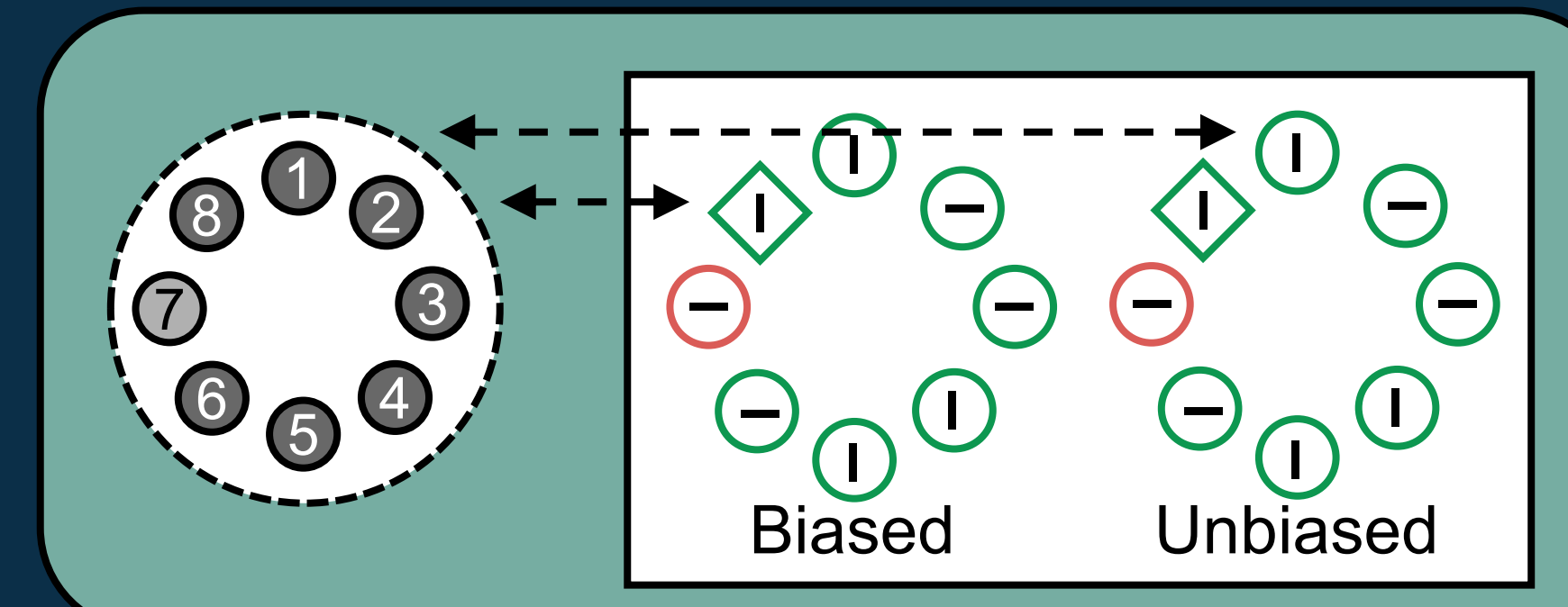
Biased and unbiased displays presented in same spatial context (i.e., center), but differed by color pairings.



No transfer of learned suppression to unbiased displays differentiated by color within single spatial context; consistent with configural frame of reference, but not retinotopic or spatiotopic.

Conclusions:

Learned suppression effects primarily act on a configural frame of reference. When biased and unbiased displays share common featural properties, suppression is determined by the joint probabilities at the relative item positions.



When biased and unbiased displays are distinct from one another, separate representations are formed of the different search displays, and suppression is reactively applied according to the encountered context.

