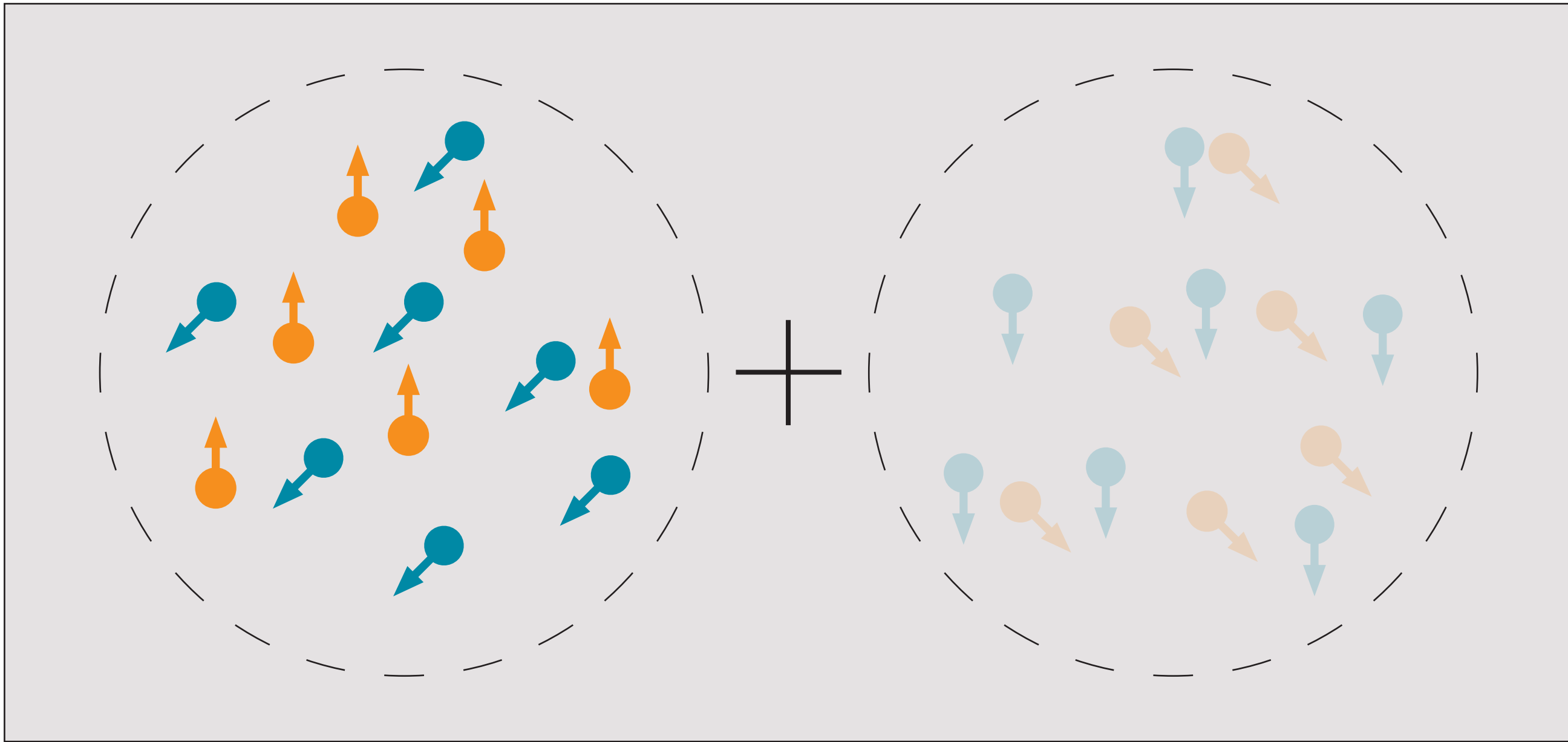


Putting spatial and feature-based attention on a shared perceptual metric

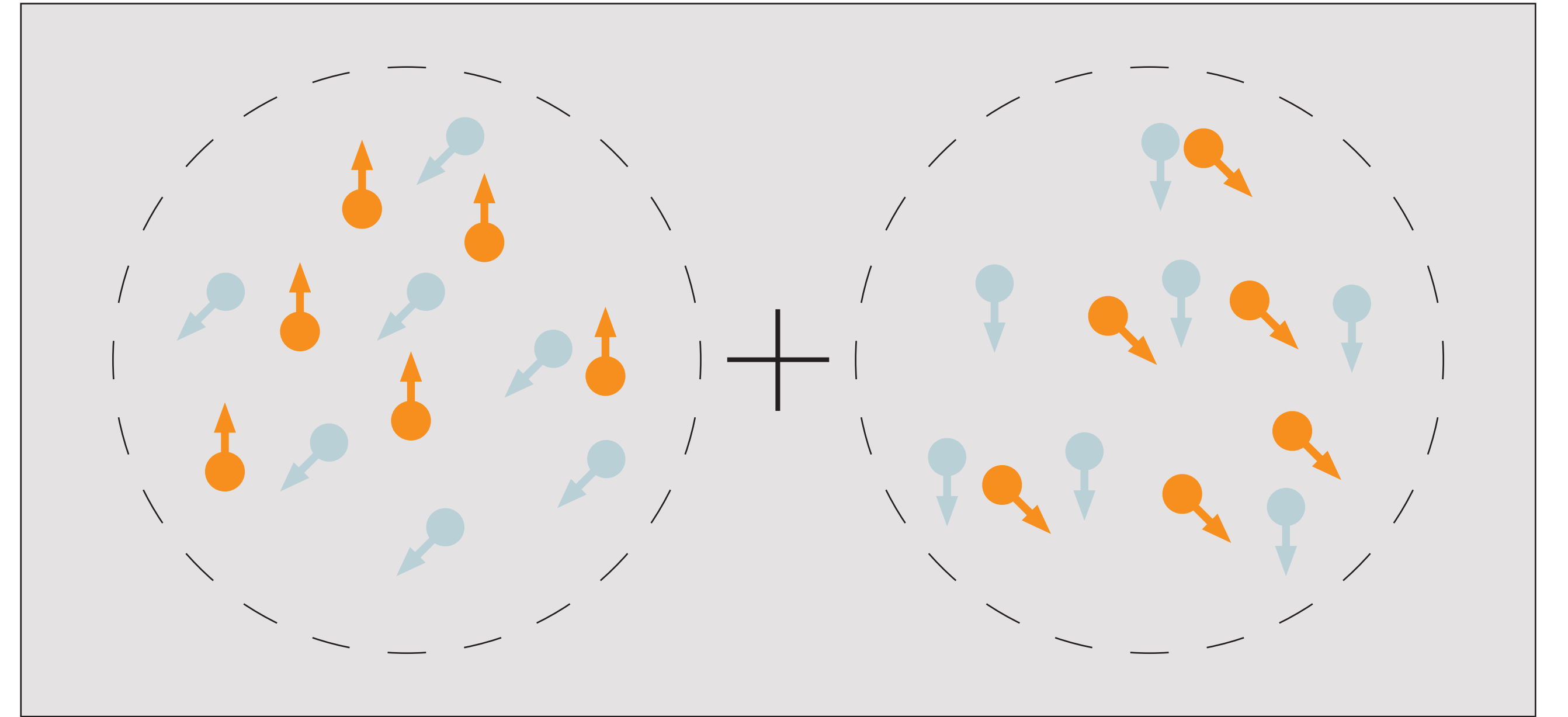
1. Introduction

How can we compare different forms of sensory selection? We used two tasks designed to measure perceptual sensitivity in which observers could either select information by location or by feature (e.g. color).

Selection by location:



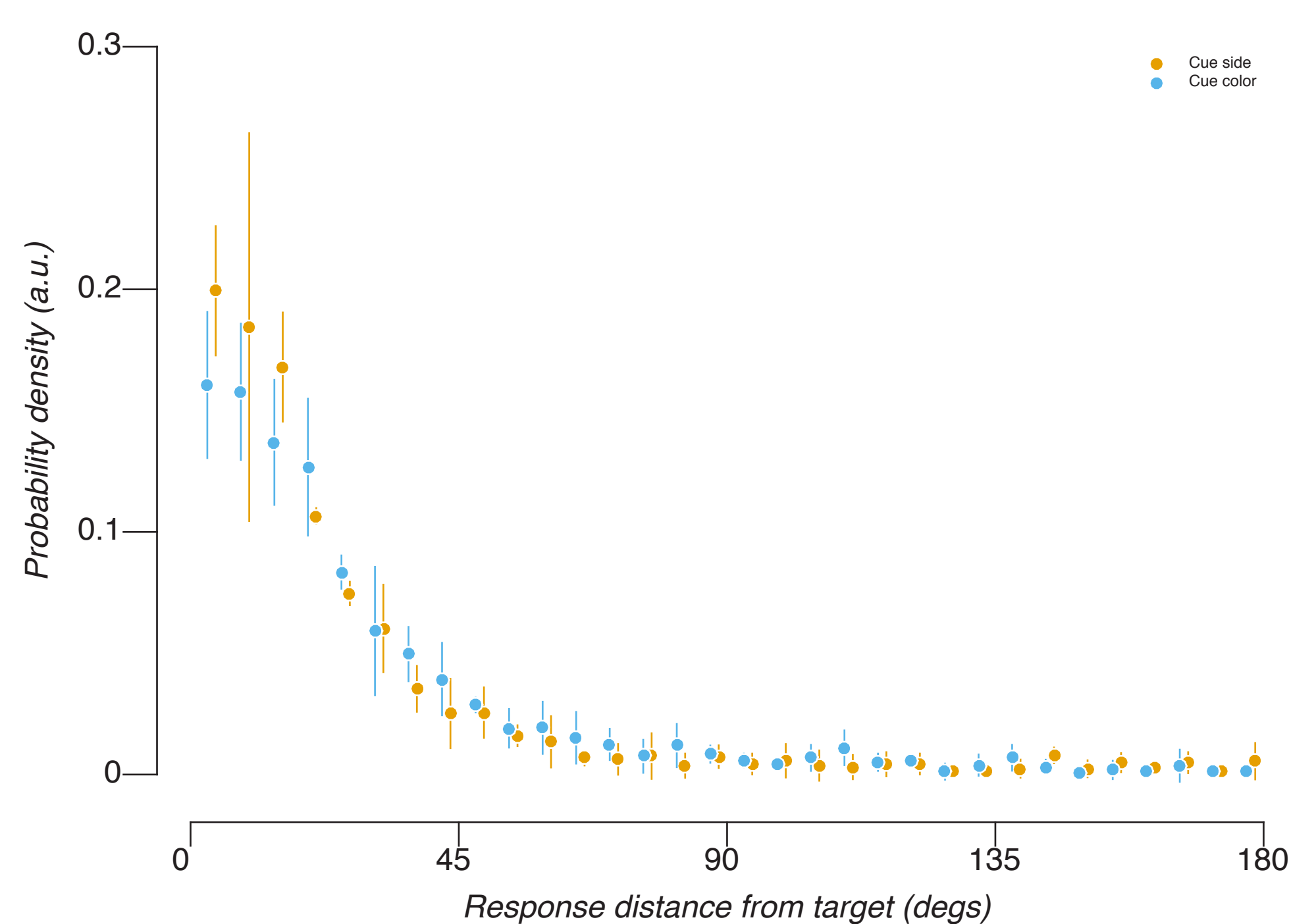
Selection by feature (color):



2. Similar strength of selection

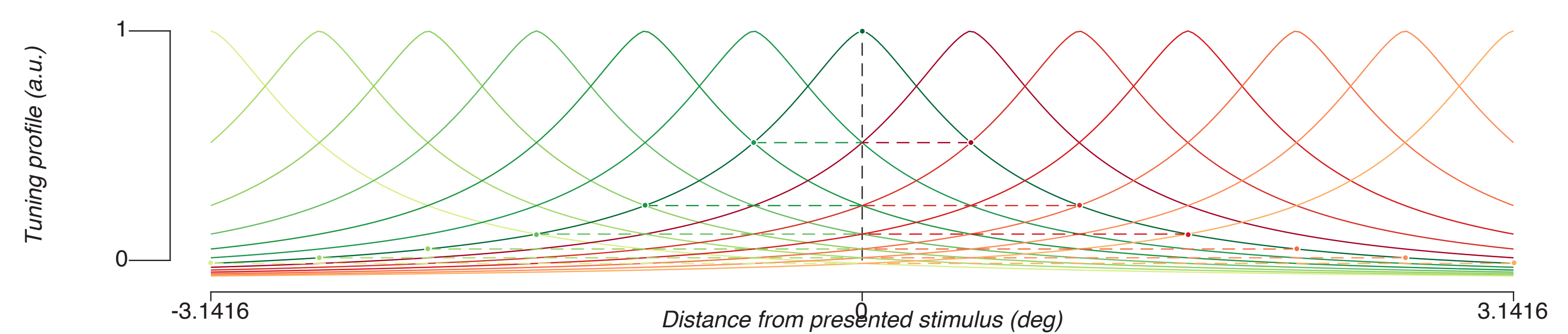
Observers (n=4) were asked to average the motion direction of two patches, selected by color or side.

Todo-task figure

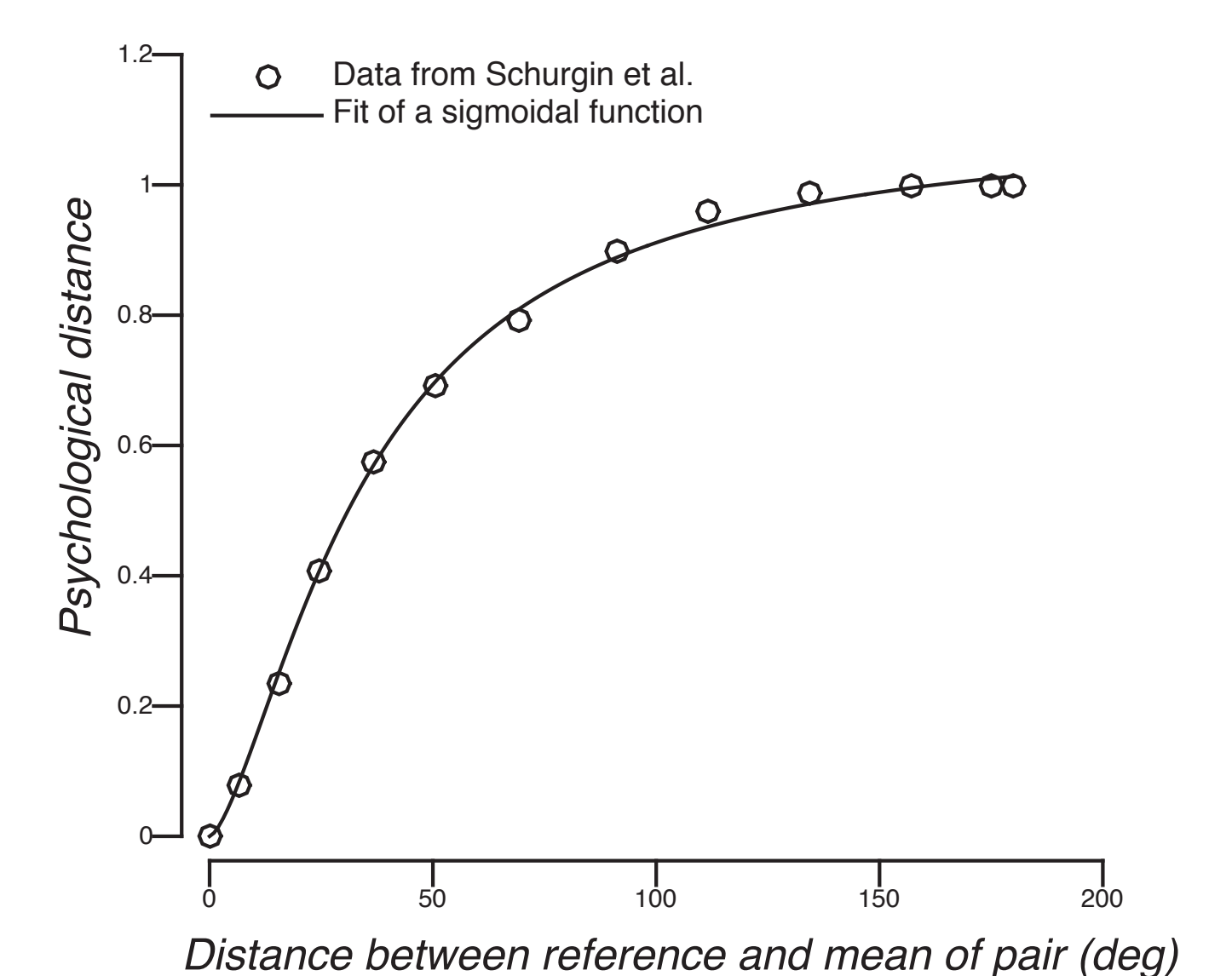
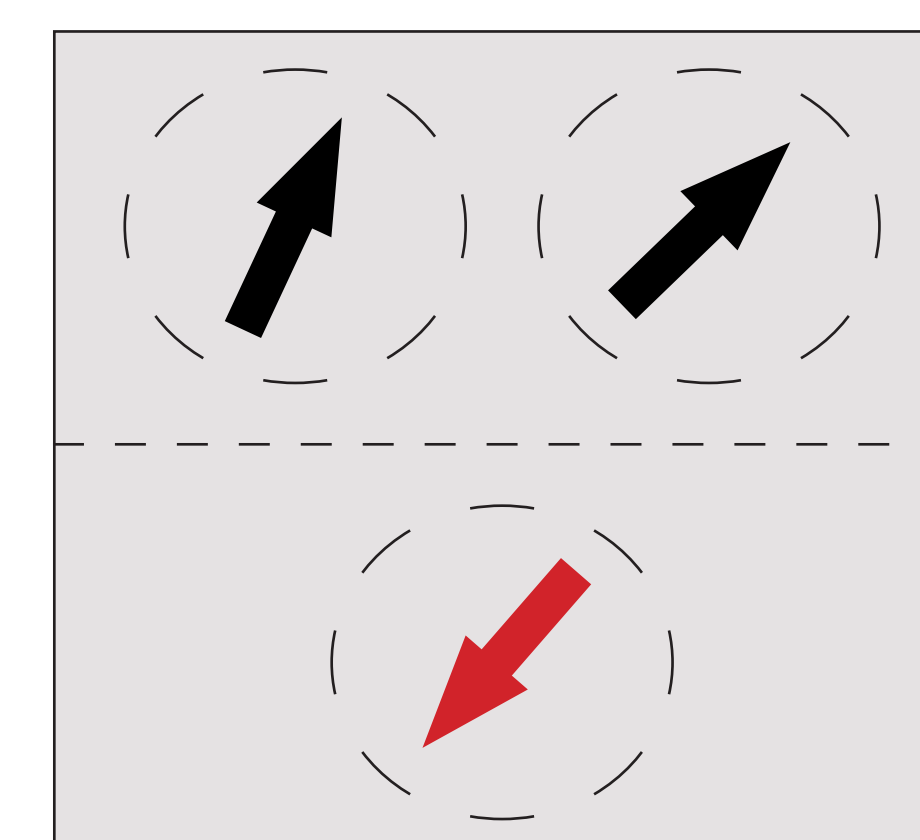


3. Model details

Our model of behavior assumes that a stimulus is encoded by m channels, each with a tuning profile to the stimulus properties¹.

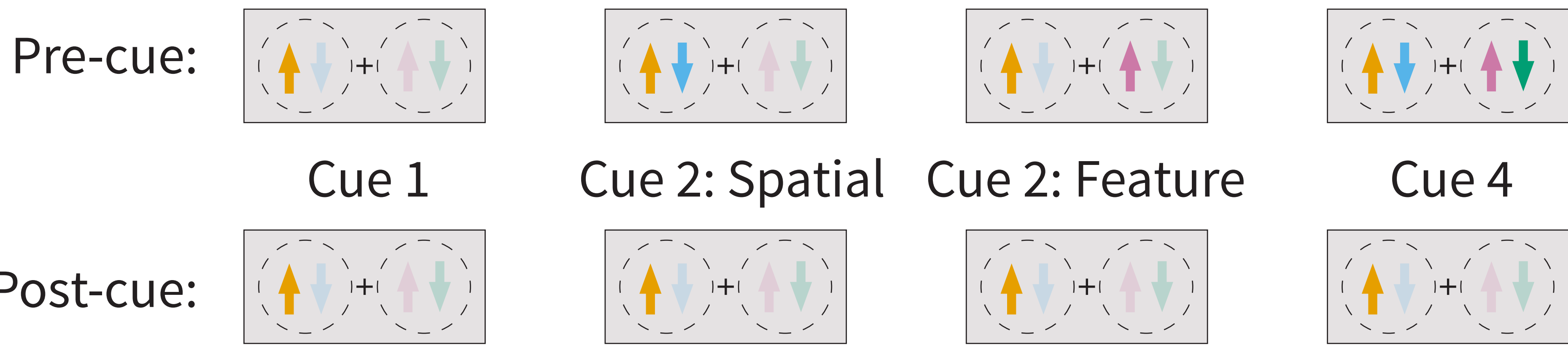


The tuning profile of each channel is empirically derived from a psychological distance function.

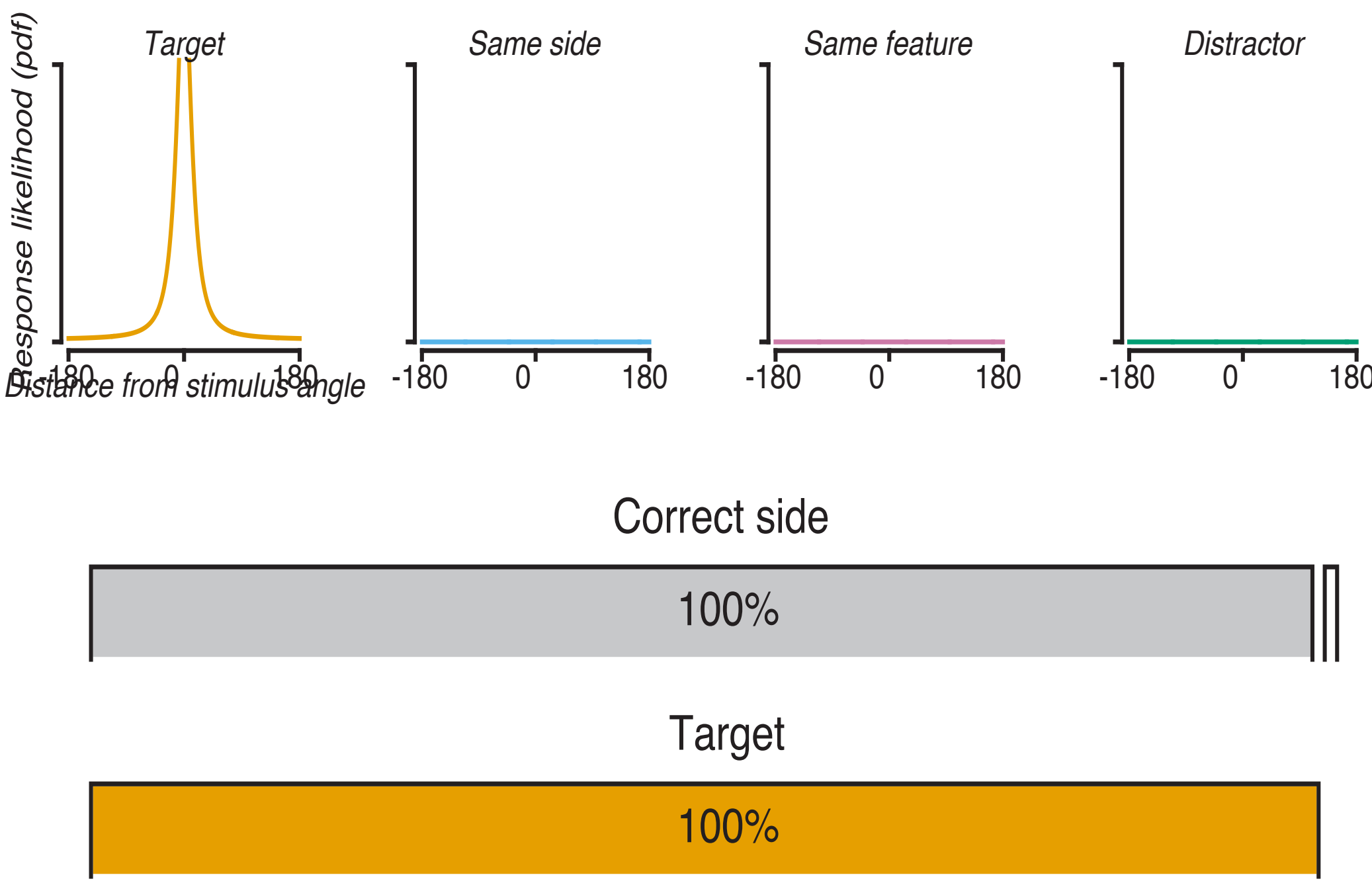


4. Bias due to spatial overlap

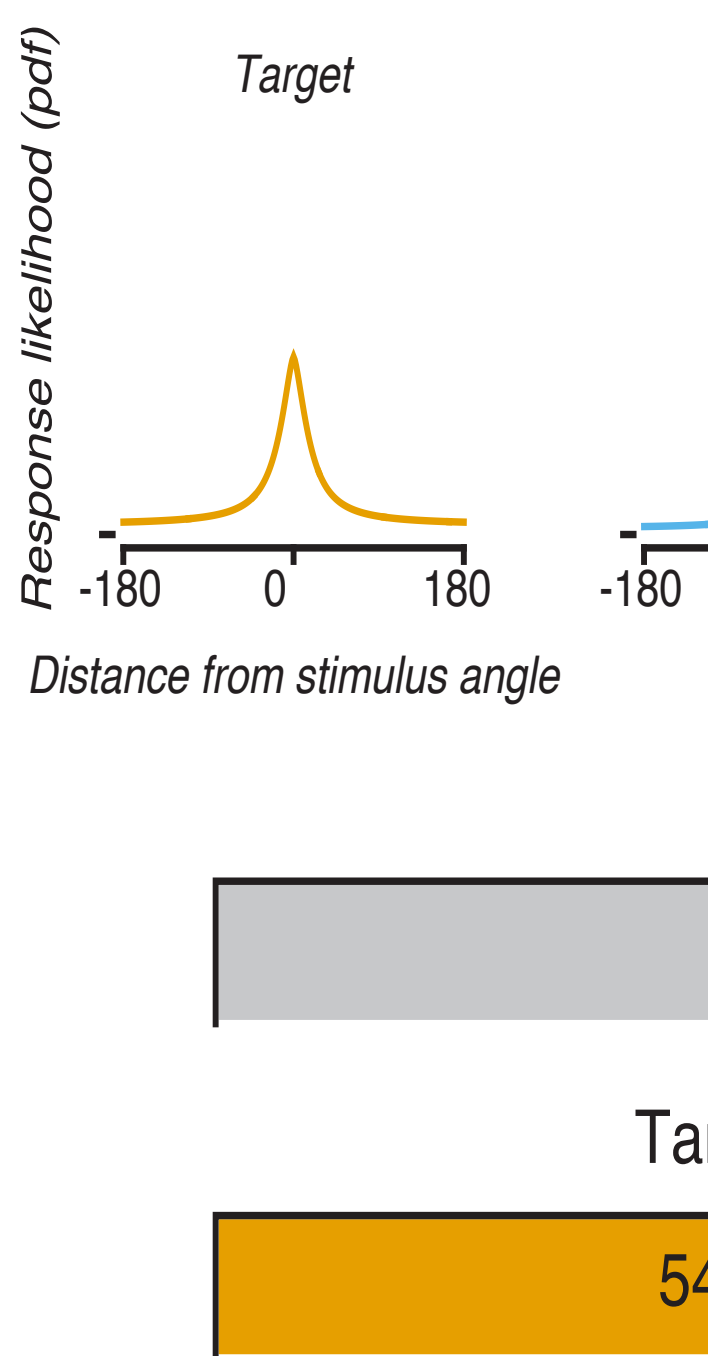
Observers (n=5) were asked to recall the color of a single patch. We varied what information was cued in advance to control sensory selection. (data from 250 ms duration)



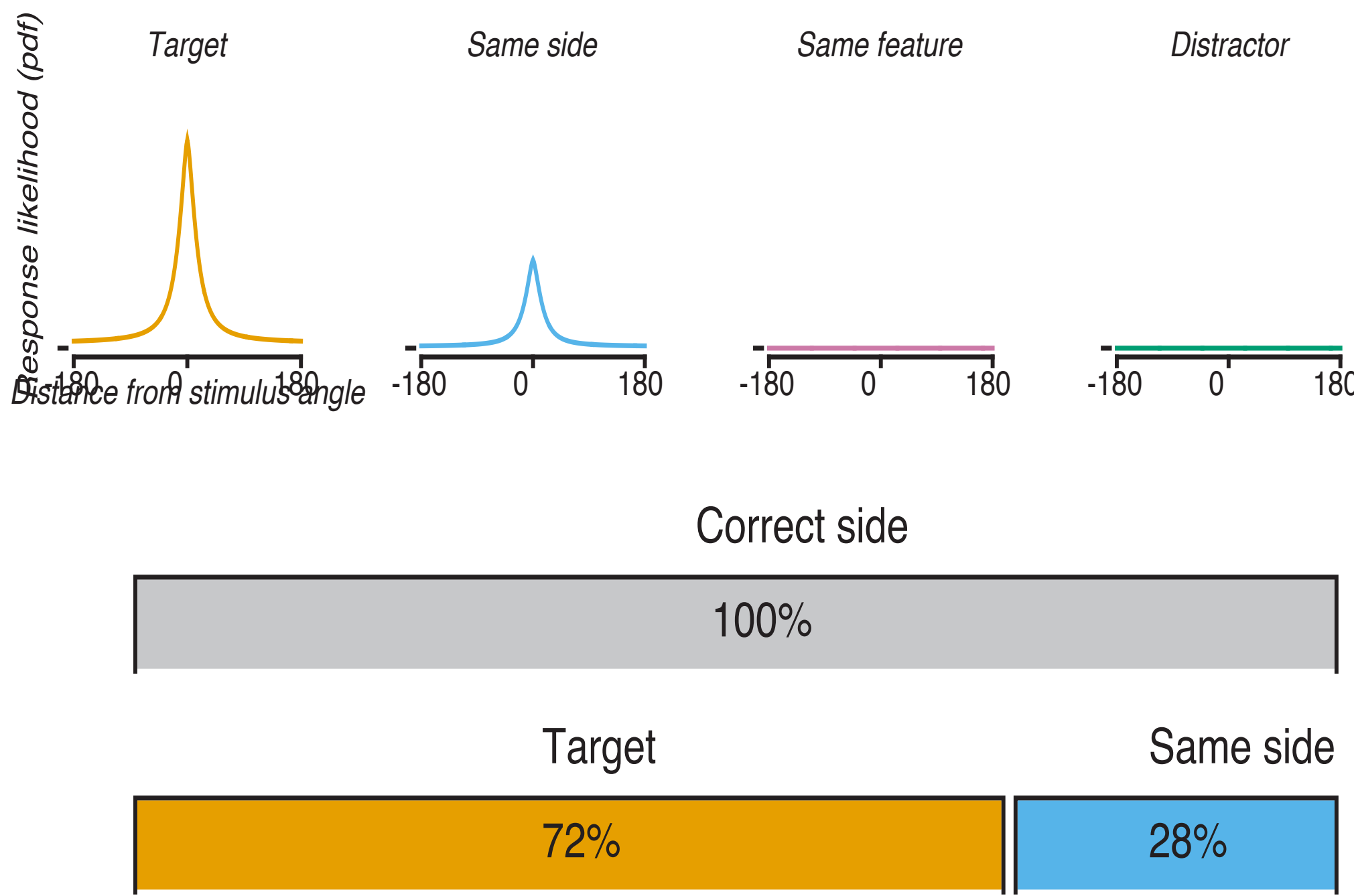
Cue 1



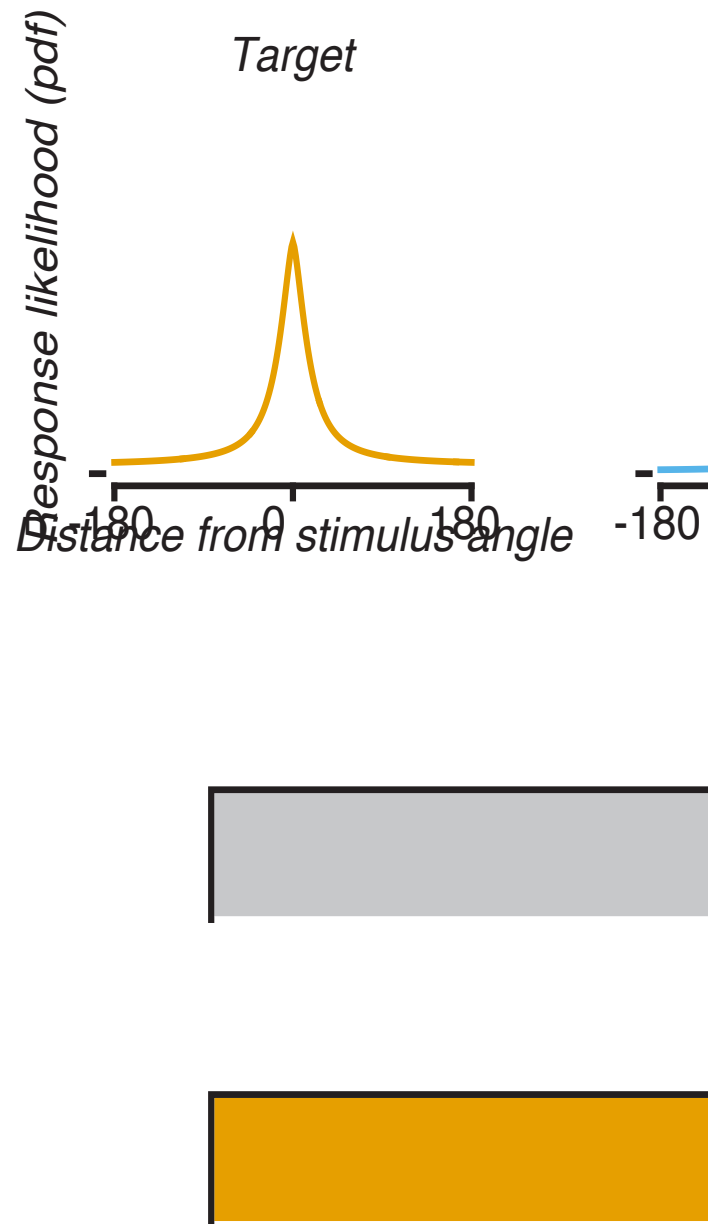
Cue 4



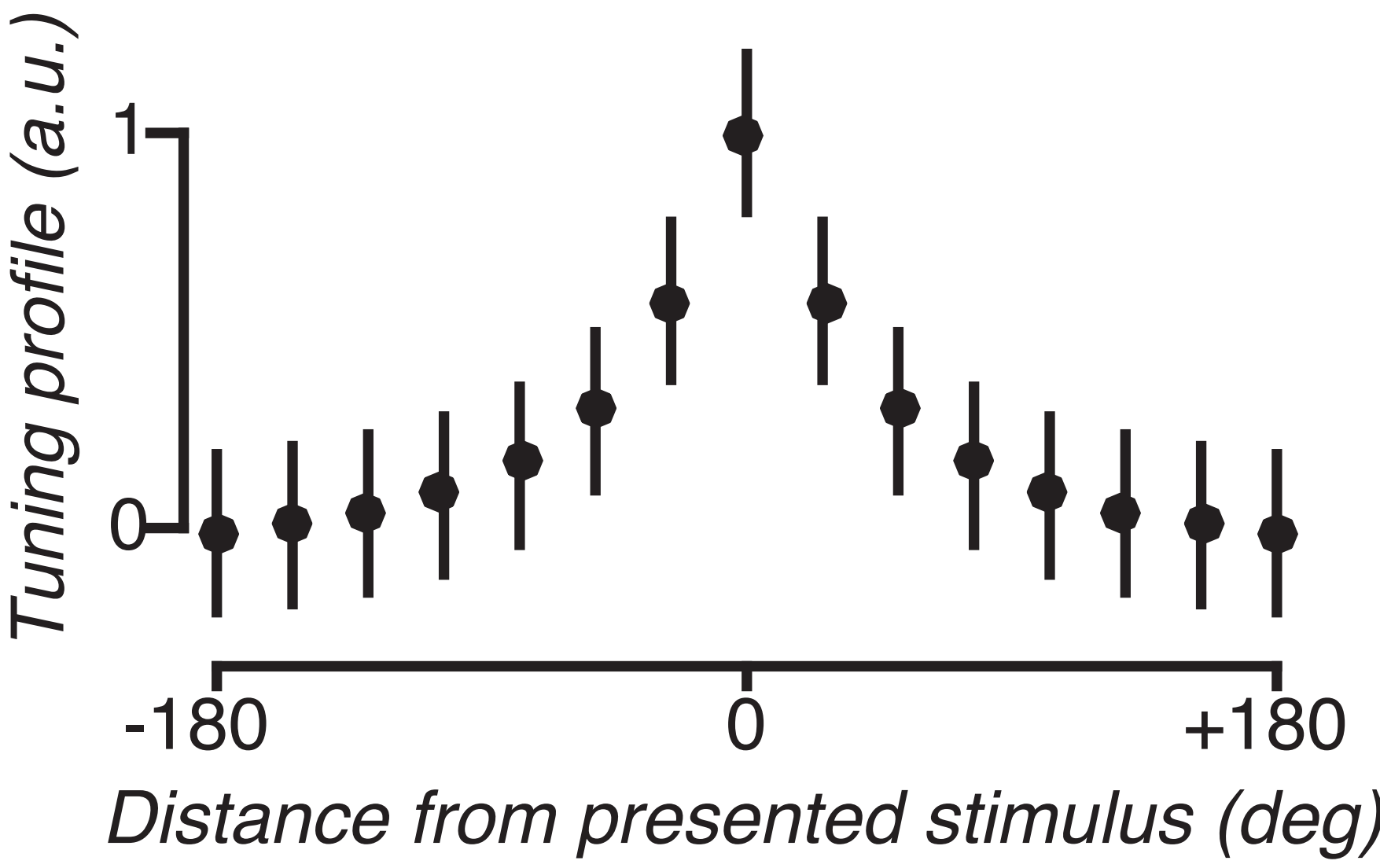
Cue 2: Spatial



Cue 2: Feature



At the time of readout, the channel with maximum activation is reported. Noise in the channels leads to response variability.



5. Similar selection hints at similar implementation

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