



Title	Dissociating goal-directed and stimulus-driven determinants in attentional capture
Author(s)	Chan, LKH; Hayward, WG
Citation	The 7th Asia-Pacific Conference on Vision [亞太視覺會議] (APCV 2011), Hong Kong, 15-18 July 2011. In i-Perception, 2011, v. 2 n. 4, p. 323
Issued Date	2011
URL	http://hdl.handle.net/10722/138001
Rights	Creative Commons: Attribution 3.0 Hong Kong License

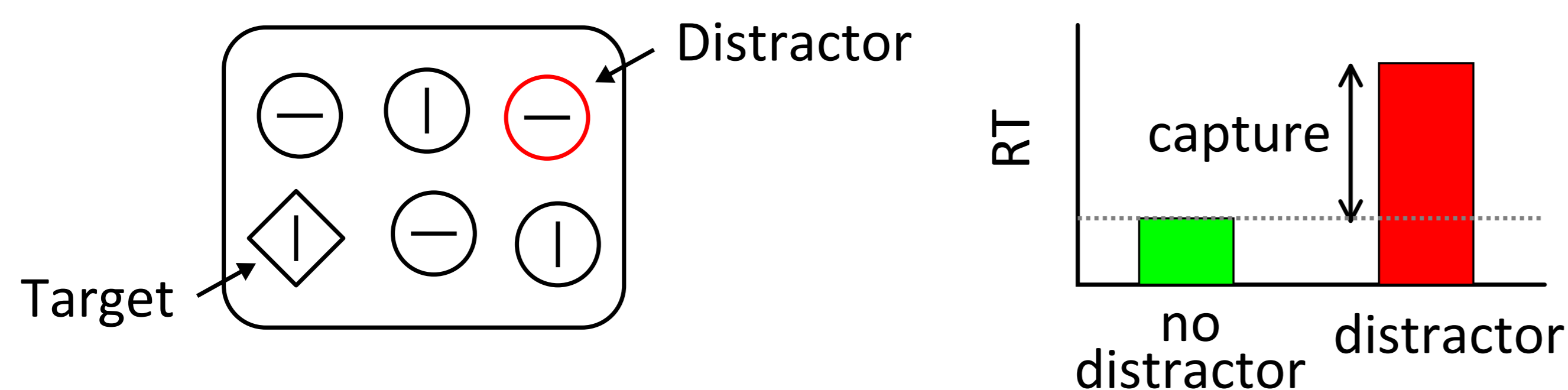
Dissociating goal-directed and stimulus-driven determinants in attentional capture



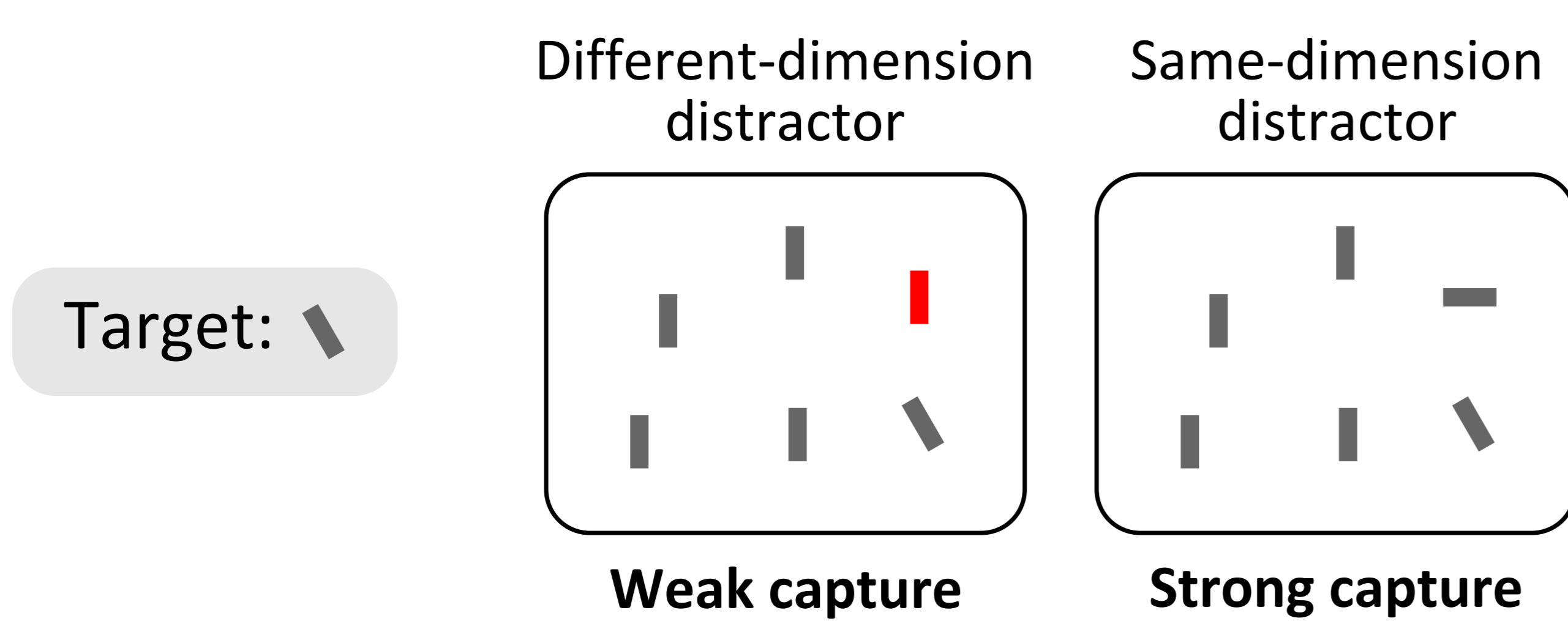
University of Hong Kong Louis K. H. Chan & William G. Hayward clouis@graduate.hku.hk

Background

We encounter "attentional capture" when a salient event attracts our attentional focus



In most cases, dimensionality of the distractor matters



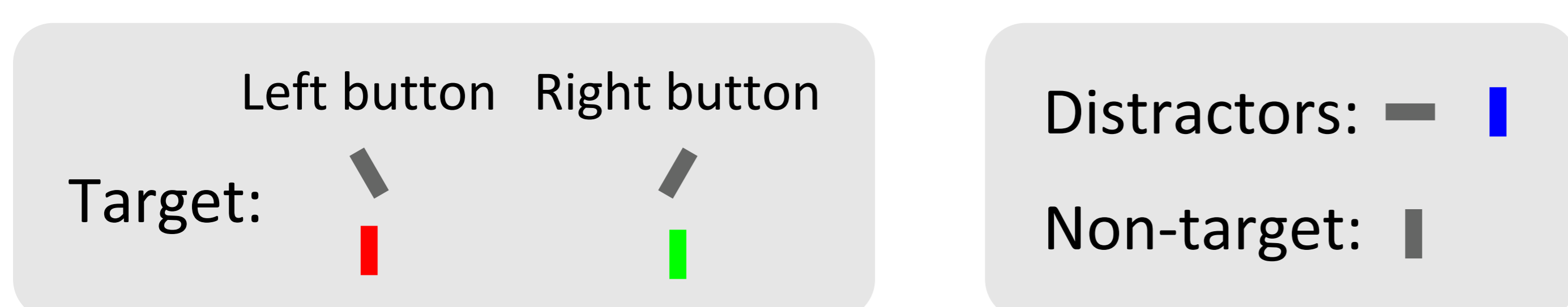
Why is different-dimension singleton weaker?

Two possible explanations:

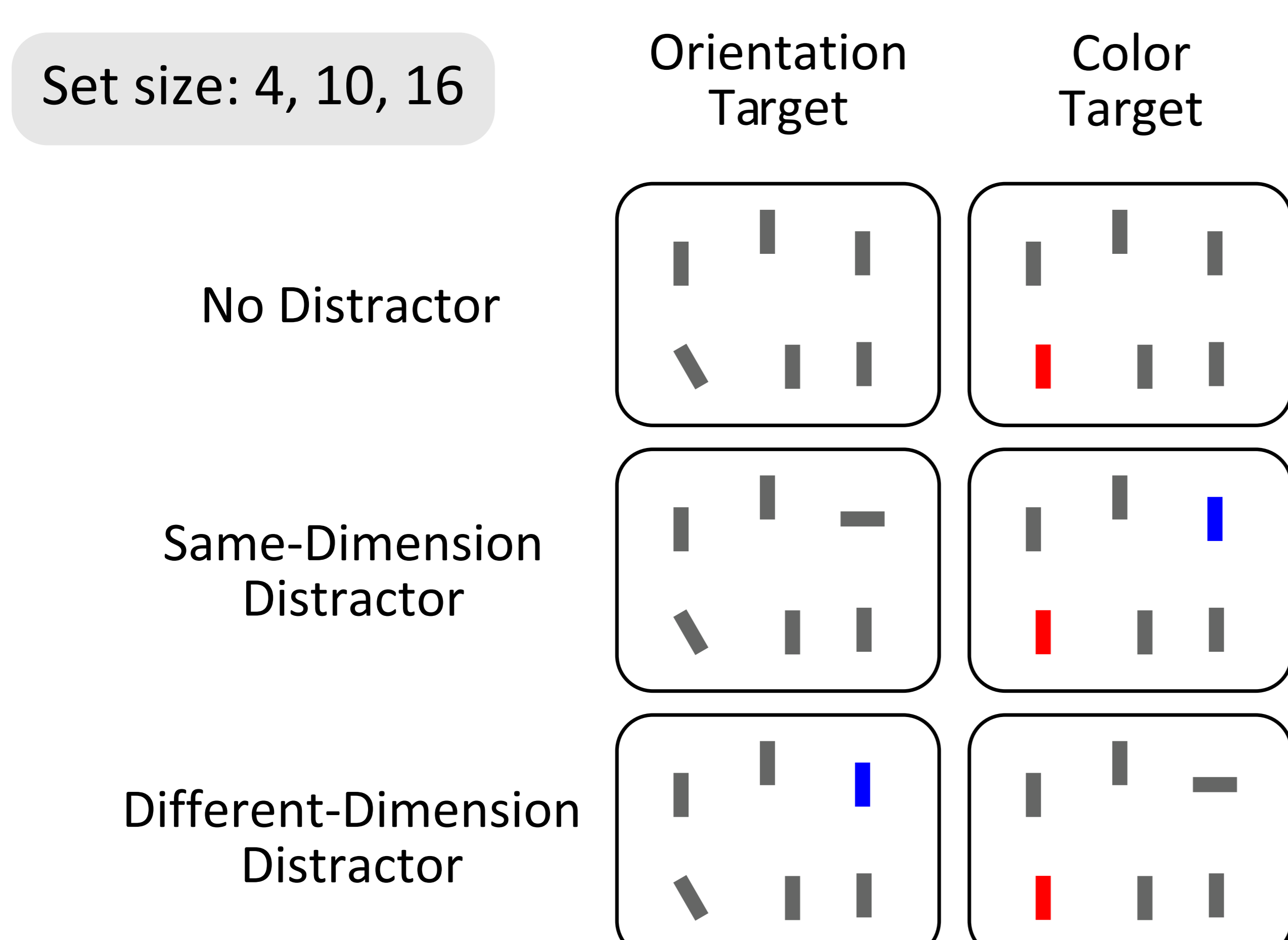
1. Because the distractor does not match the observer's "attentional set" (e.g., Folk, Remington, & Johnston, 1992)
2. Because the distractor and the target are represented in different feature maps (Chan & Hayward, 2009)

Current study

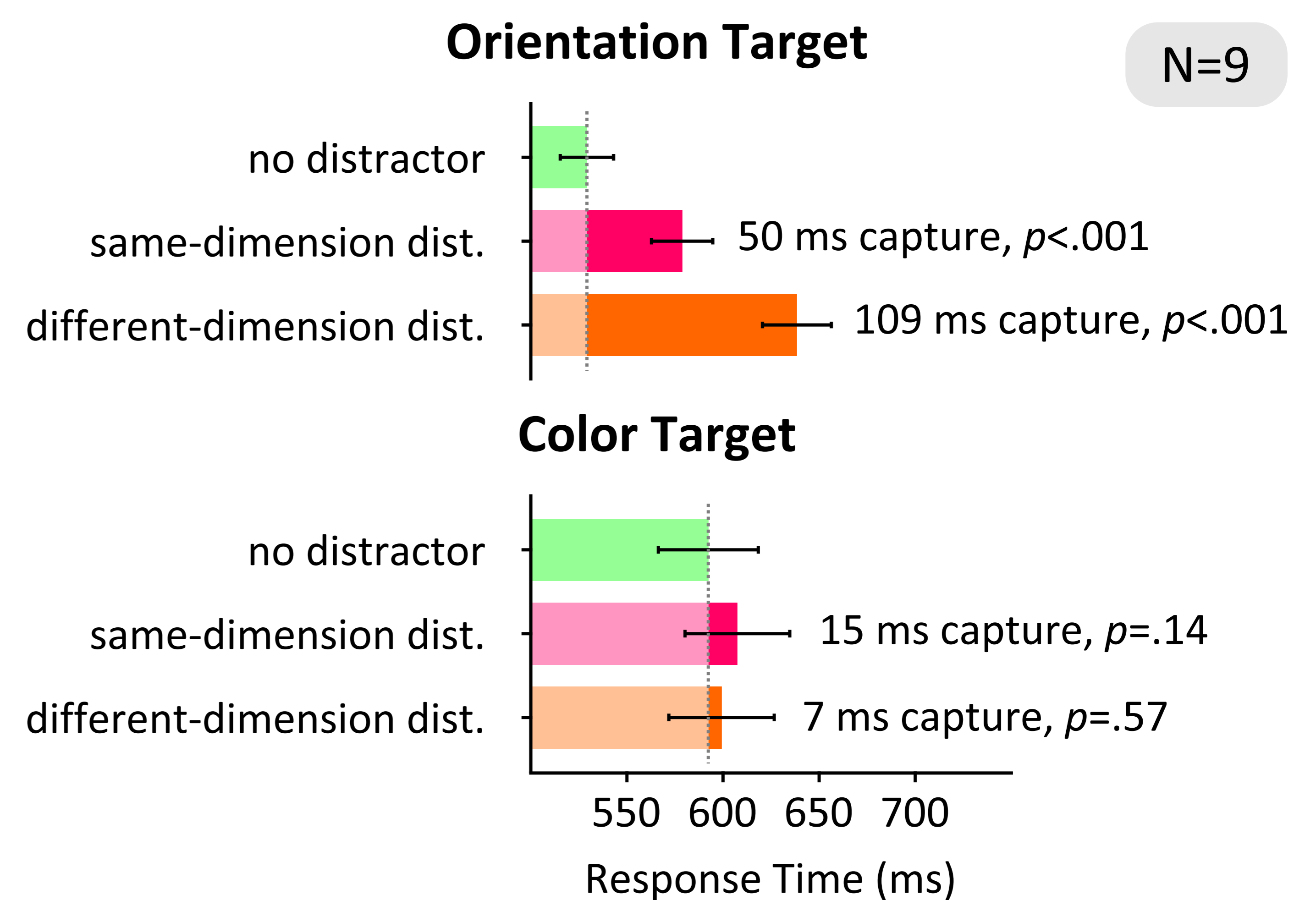
Create a situation where a different-dimension distractor also matches the attentional set



Targets mixed across trials, so observers must search both dimensions



Results



For orientation targets, both same- and different-dimension distractors strongly captured attention

For color targets, distractors did not capture attention

Conclusions

Suppose color is the more salient dimension...

- Current data suggest relative saliency of the target as compared to the distractor is crucial for producing capture
- Consistent with Theeuwes' (1991) suggestion that visual saliency determines search order

Why across-dimension attentional capture has been very weak (<40 ms) in other studies?

- In other studies, different-dimension distractors generally did not match current attentional set
- Although these distractors may be salient enough to produce capture, capture size was small
- We reason that when attentional set is matched, it may be more difficult to disengage attention from the distractor, resulting in stronger capture

In other words, we suggest that while a high distractor saliency enables capture, capture size is influenced by its match to the current attentional set

This proposal reconciles the stimulus-driven view and the contingent-capture view in the attentional capture literature

Acknowledgement

This research was supported by a grant from the Hong Kong Research Grants Council (HKU744209H) to WGH.