



CREST GUIDE: FINDING HIDDEN TARGETS

This guide presents an overview of some of the difficulties in detecting hidden targets.



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CAMOUFLAGED OBJECTS

Sometimes the difficulty of finding a target lies in the similarity of the target to other objects or to the background, as well as in the complexity of the background. Our eyes are naturally drawn to regions with the most noticeable disruptions in colour, brightness or other features, and so when there are many of those regions in a scene, the target will be more difficult to spot. Camouflage that matches markings and colour of a target with markings and colour of the background lessens the salience of the target itself.

When people search through a scene for a target they know will be camouflaged, they have difficulty suppressing their natural tendency to look at objects that stand out and so could not possibly be targets.

Although suppressing the visibility of object edges is central to how camouflage works,

sometimes this works by presenting misleading edges. This is done by including quite bold changes in pattern near some of the edges of the target, distracting people from seeing the real edges.

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BEAR IN MIND...

What is known about camouflage has been learned by searchers looking at static images. Spotting moving camouflaged objects may be different.

SEARCH ERRORS

UNSEEN OBJECTS

Targets may be difficult to spot because other objects have to be moved away or opened in order to see the target. Consider searching for your keys. Although sometimes they are found in plain view, other times they are in other rooms or are accidentally covered up or left in pockets or bags, in which case the search is more difficult.

Where we expect a target to be strongly affects how we first search a scene. If the target isn't found in an expected place, we move on to considering other plausible locations for them. If the target is not visible, that means using memory and reasoning to figure out where to look. The physical and mental effort required to search means that without training, searchers will not search thoroughly.

FIVE PRECONCEPTIONS THAT CAN PRODUCE SEARCH ERRORS

1. When targets are expected to appear rarely, people often do not search long enough before deciding no target is present. When targets are common, people sometimes decide a target is present based on too little information.
2. When more than one target could be present, people are less motivated to search thoroughly for the second one after

finding the first one. This is particularly common when the first target is more easily found than the second target. In the extreme, when many targets could be present and the quantity is unknown, it is rare for people to search thoroughly enough to find all of them.

3. When preconceptions are strong about where a target can appear, people sometimes fail to search in less likely locations.

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4. Search is more difficult when different kinds of targets appear. This is because of the need to maintain two goals, which sometimes leads to people giving up after searching more thoroughly for one target than the other.
5. It is easier to find a target when you know exactly what it will look like. If it is ill-defined perceptually, you are more likely to miss it.

READ MORE

Hayward Godwin, Tamaryn Meneer, Kyle Cave, Shaun Helman, Rachael L Way, and Nick Donnelly. (2010). The impact of relative prevalence on dual-target search for threat items from airport x-ray screening. *Acta Psychologica*, 134, 79-84. <http://doi.org/10.1016/j.actpsy.2009.12.009>

Mark B. Neider, and Gregory J. Zelinsky. (2006). Searching for camouflaged targets: Effects of target-background similarity on visual search. *Vision Research*, 46(14), 2217-2235. DOI: 10.1016/j.visres.2006.01.006

IMAGE CREDITS

Page 1: "US Navy Sea-Air-Land (SEAL) team member hides in the foilage" is a public domain photograph from defenseimagery.mil.