

## COUNTERMEASURES TO PERCEPTUAL BLINDNESS

Roger G. Johnston  
Vulnerability Assessment Team  
Nuclear Engineering Division  
Argonne National Laboratory  
9700 S. Cass Ave, Building 206, Argonne, IL 60439-4840

### ABSTRACT

Perceptual Blindness, also called Inattentional Blindness, is the common phenomenon of a person failing to perceive objects or actions that are in plain sight. Causes beyond just basic human psychology can include not having a mental framework prepared in advance to perceive the objects or actions (that is, not being ready for the unexpected); wishful thinking or denial (due to cognitive dissonance) that prevents someone from seeing what he or she would like not to exist; intense mental focus on certain features which can cause mental distraction in regards to others; or deliberate misdirection by another person. Fortunately there are potential—though largely untested—countermeasures to perceptual blindness. These include choosing one or more inspectors or security guards to be the generalist to examine the general scene without specific assigned detailed observational responsibilities; conducting training to improve observational skills; making relevant personnel aware of perceptual blindness issues and demonstrating perceptual blindness to them; using magicians to demonstrate misdirection and sleight-of-hand techniques; engaging in frequent mental “what if” exercises to better mentally prepare observers for the unexpected; and implementing countermeasures to groupthink, denial, cognitive dissonance, and wishful thinking.

### INTRODUCTION

Fifty years of research by cognitive psychologists has clearly shown that human beings are remarkably poor observers.[1-4] Crucially, people don't even realize how bad they are.[1-3] There are serious implications for security guards and safeguards inspectors [5,6], including those who must check security badges, watch video monitors, inspect seals, guard gates, operate safeguards equipment, make daily rounds, etc.

“Perceptual blindness”, also known as “inattentional blindness”, is the phenomena of not being able to perceive things that are in plain sight, especially if you're focused on a particular visual task.[1-4] For examples, about half of all observers asked to closely monitor a video clip of basketball players passing a basketball will miss a person in a gorilla suit walking through the middle of the scene because they are not expecting it.[1,7] When told about the gorilla and shown the video clip a second time, some subjects vehemently insist that the video has been fraudulently swapped.[1,7]

A related phenomenon includes “change blindness”, where an observer often fails to notice changes—including blatant ones—even when the changes are expected.[3] Similarly, “change simultanagnosia” is the inability of an observer to monitor two changes simultaneously in a scene.[3]

Despite the practical importance of perceptual blindness, there has been virtually no research by cognitive psychologists in the context of security or nuclear safeguards.[5,6] Even more alarming, cognitive psychologists do not have many suggestions for countermeasures.[1,3]

## COUNTERMEASURES

Although they don't have a lot of recommendations for mitigating perceptual blindness in general (much less for security and safeguards), cognitive psychologists do seem to offer the following two countermeasures[1-3]:

**Countermeasure 1:** Mental preparation can help. This is consistent with Jeremy Wolfe's quip that, "If you don't see it often, you often don't see it." Security guards and inspectors can probably benefit from "what if?" exercises, and mental, physical, walk-through, and visual rehearsals of a wide variety of different possible security incidents and scenarios. The hope is that this will better prepared them for accurate perception. It's clear, though, that these exercises must be fresh and frequent.[1]

**Countermeasure 2:** Security guards and inspectors should at least be aware of the concept of perceptual blindness. They should witness demonstrations of the phenomenon, including exercises to reveal examples of their own perceptual blindness.

The following are other possible countermeasures for perceptual blindness that I propose, though little research is available to support them. Further research is clearly needed.

**Countermeasure 3:** Conduct training to improve observational skills despite the likelihood that it will be only marginally beneficial for countering perceptual blindness.[1-3] Perceptual blindness is intrinsic to how the human eye and mind work; learning how to stay more alert is not that helpful. There may, however, be other advantages to such training beyond countering perceptual blindness.

**Countermeasure 4:** Hire magicians to demonstrate misdirection and sleight-of-hand techniques. These can be used by an adversary to fool guards and inspectors.

**Countermeasure 5:** Use technology to help. Design security and safeguards strategies/procedures to minimize the need for accurate perception by human beings.

**Countermeasure 6:** Implement countermeasures to groupthink, denial, cognitive dissonance, and wishful thinking.[2,5,8-11] This may help to prepare the mind to see unexpected and unwelcome security incidents.

**Countermeasure 7:** Try to minimize fatigue, boredom, stress, and jet lag for security guards and safeguards inspectors.

**Countermeasure 8:** Minimize highly specific, overly detailed assignments for security guards and safeguards inspectors.

**Countermeasure 9:** Choose one or more inspectors or security guards to be the generalist(s) to examine the general scene without specific assigned detailed observational responsibilities. They should look for the unexpected and the rare.

## ACKNOWLEDGEMENT AND DISCLAIMER

This work was performed under the auspices of the United States Department of Energy (DOE) under contract DE-AC02-06CH11357. The views expressed in this paper are those of the author and should not necessarily be ascribed to Argonne National Laboratory or DOE.

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