

Inattentional Blindness I

Item: An automobile driver looks left down a sidewalk and pulls forward into a driveway. She hears a thud, looks down and sees a bicyclist on the ground near her left front fender. The bicyclist is seriously injured.

Item: A nurse pulls a vial from a cabinet. She looks at the label, fills the syringe and then injects the patient. The patient receives the wrong drug and dies.

Item: A submarine commander looks through his periscope and sees no ships nearby. He orders the ballast blown and the submarine to surface. He then hears the clank of a ship hitting his deck and realizes that he has surfaced with another ship directly overhead. The ship overturns, killing 9 people aboard.

Item: An Eastern airline pilot and his fellow officers see a bulb flash on the control panel. They become so concerned with the cause, that they don't notice the plane approaching the ground or hear the alarm. The crash kills over 100 people.

INATTENTIONAL BLINDNESS

All of these real incidents and a large number of others occur under strikingly similar circumstances: someone performing a task simply fails to see what should have been plainly visible. Afterwards, the person cannot explain the lapse.

The person making the error is likely to be held negligent. While assigning blame and deeming someone as stupid or careless might provide emotional catharsis, it does little explain why such incidents are so commonplace. Why do intelligent, diligent and thorough people so often fail to see the obvious?

The answer lies in inattentional blindness, a condition that all people exhibit periodically. As the name implies, it is the failure to see an object because attention is not focused on it. Although

the phenomenon has long been known, recent evidence shows that it is much more pervasive than anyone had imagined and that it is one of the major causes of vehicle crashes and human error.



To understand how inattentional blindness occurs, it is necessary to accept a very unintuitive idea: most of our perceptual processing occurs outside of conscious awareness. Our senses are bombarded with such a large amount of input, sights, sounds, smells, etc., that our minds cannot fully process it all. The overload becomes even worse when we recall information from memory and engage in deep thought.

To cope with the problem, we have evolved a mechanism called attention, which acts as a filter that quickly examines sensory input and selects a small percentage for full processing and for conscious perception. The remaining information is lost, unnoticed and unremembered - we are inattentively blind to it since it never reached consciousness. This all happens without our awareness, so it is not a behavior which people can easily bring under control.

Inattentional blindness causes crashes when attention mistakenly filters away important information. Learning the way attention separates the important from the unimportant is the first step in understanding inattentional blindness. If we understand why the lapses occur, then we can take steps to reduce them.

Research suggests that inattentional blindness is affected by four factors, conspicuity, mental workload, expectation and capacity.

Inattentional blindness crashes are usually caused by a combination of factors: low conspicuity, divided attention and high expectation or lower arousal. There is doubtless a tradeoff in the role of these factors. In any specific situation, a crash can be due to any or all.

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The Shield
Inattentinal Blindness I
Quiz



Driver Name: _____ Date: _____
Please Print

Driver Signature: _____

Please circle one correct answer for each question.

1. In the simplest terms, inattentinal blindness is:
 - a. Someone shuts their eyes while performing a task
 - b. Someone performing a task thinks they see something that is not really there
 - c. Someone performing a task simply fails to see what should have been plainly visible
 - d. None of the above
2. Most of our perceptual processing occurs:
 - a. With conscious awareness
 - b. Outside of conscious awareness
 - c. Both a & b
 - d. None of the above
3. Attention:
 - a. Acts as a filter that quickly examines sensory input and selects a small percentage for full processing and for conscious perception.
 - b. Allows most sensory input into our conscious awareness
 - c. Acts as a dam that blocks out all sensory input
 - d. None of the above
4. Inattentinal blindness:
 - a. Rarely causes vehicle crashes
 - b. Is only a problem for careless drivers
 - c. Is not real
 - d. Causes crashes when attention mistakenly filters away important information
5. Research suggests that inattentinal blindness is affected by three factors: conspicuity, mental workload, capacity.
 - a. True
 - b. False

