

Inattentional Blindness V

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

CAPACITY

Attentional capacity varies from person to person and from time to time. It is lessened by drugs, alcohol, fatigue and age. Under these conditions, likelihood of noticing important events declines.

Attentional capacity is also a function of experience. A pianist learning a new piece might have to think about every note he hits on the keyboard and cannot let his mind wander. After sufficient practice, the pianist can play while holding a conversation or using his attention for other matters. "Muscle memory" has taken over and the fingers know just where to go for the piano task. When we learn to perform tasks "automatically," we seemingly need no longer pay attention to them and can focus on other matters. (In reality, however, we still monitor what we are doing with a small, unconscious portion of our attention.)

The same applies to us as drivers. Here too our attentional capacity is a function of our experience. When we first learned to driver, or when we first learned to drive a commercial vehicle, we had to think closely about many details, not allowing our minds to wander.

We had to think about how to smoothly up shift, how to smoothly down shift, how far to maneuver a tight turn, which way to steer when backing, or when to depress the brake pedal in response to some event in front of us (a slowing car, a red light, etc.)

Then, after some time and some learning, our decision making became easier, becoming automated and requiring less of our attentional focus. However, automatic response can also lead to disastrous results. Recently, the pilot of an airliner was operating an aircraft very similar, but not identical to one that he usually flew. A fire started in one of the engines, so he flipped the

switch to cut the fuel supply. However, this new plane had a slightly different switch. The same physical motion which set the switch to "off" in his old plane caused the fuel flow to increase in his new one. Naturally, the engine burst into a massive fire. A beginner, who would have to think about the switch and read the settings, would probably not make that error. A beginner might make a "rule-based error" (what rule to follow in a particular situation) but not a "skill-based error."



COCLUSION

Inattentional blindness crashes are usual 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, an accident could be due to any or all.

Inattentional blindness is a natural consequence of our adaptive mental wiring. We are able to consciously perceive a small percentage of the available information that flows into our senses and are blind to the rest. The rules used by the filter, meaningfulness, conspicuity and expectation, are adaptive and usually work very well. Given the number of decisions made and actions performed by a large population of people, however, mistakes are bound to occur. Fortunately, they are generally benign. Sometimes, however, they lead to tragedy.

It is difficult to reduce errors due to inattentional blindness. One reason is that people are unaware of the blindness. Behavior and skill training mainly affects conscious, voluntary behavior, so it helps little. You can tell a driver to be sure to check the oncoming lane before turning, but the advice will do little good if he is inattentively blind at the moment.

As drivers, our only hope to combat inattentional blindness is to pay attention to what we are paying attention to.

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The Shield
Inattentual Blindness V
Quiz



Driver Name: _____ Date: _____
Please Print

Driver Signature: _____

Please circle one correct answer for each question.

1. Attentional capacity
 - a. Varies from person to person
 - b. Varies from time to time
 - c. Is constant
 - d. Both a & b
2. Attentional capacity is also a function of
 - a. Knowledge
 - b. Learning
 - c. Experience
 - d. None of the above
3. When we learn to perform tasks "automatically," it means
 - a. We seemingly no longer need to pay attention to them
 - b. We can focus on other matters
 - c. We still monitor what we are doing with a small, unconscious portion of our attention
 - d. All of the above
4. Inattentual blindness crashes are usual caused by a combination of factors:
 - a. High conspicuity, divided attention and high expectation with high arousal
 - b. Low conspicuity, focused attention and low expectation or lower arousal
 - c. High conspicuity, focused attention and high expectation with high arousal
 - d. Low conspicuity, divided attention and high expectation or lower arousal.
5. Behavior-based and skill-based training mainly affects conscious, voluntary behavior, so it helps little with combating inattentual blindness
 - a. True
 - b. False

