Change Blindness and Inattentional Blindness

People believe they see the world fully and continuously, like a video camera that records whatever falls within view. Two robust phenomena show that this belief is mistaken. Inattentional blindness is the failure to perceive a fully visible but unexpected object or event when attention is occupied elsewhere. Change blindness is the failure to notice a change between one view of a scene and the next. Both reveal that perception is highly selective and that a great deal that is technically visible is never registered or remembered. For a court, the consequence is that a witness's failure to report something, or failure to notice a change, is often a normal feature of attention rather than evidence of evasion or a defective memory.

This paper explains the two phenomena, the experiments that establish them, why they occur, and what they imply for claims about what a witness did or did not see.

Inattentional Blindness

The best-known demonstration is the invisible gorilla. Simons and Chabris (1999) had viewers count basketball passes among players on a video; about half failed to notice a person in a gorilla suit who walked into the middle of the scene, faced the camera, and left. Attention devoted to the counting task left the unexpected event unseen. The forensic counterpart is stark. Chabris, Weinberger, Fontaine, and Simons (2011) had participants chase a runner at night, mimicking a real case in which a police officer who ran past a violent assault was convicted of perjury for denying he saw it; many participants likewise failed to notice a staged fight only meters from their path. The study suggested the officer may genuinely not have seen what was plainly there.

Change Blindness

Change blindness concerns failures to notice that something has changed. Simons and Levin (1998) had an experimenter stop pedestrians to ask directions; while they spoke, two people carrying a door passed between them, and the original experimenter was swapped for a different person. Many pedestrians continued the conversation without noticing they were now talking to a stranger. Comparable failures occur for changes to attended objects across cuts in films (Levin & Simons, 1997). Large, central changes, including changes to a person's identity and clothing, routinely go undetected when attention is not directed to the changing feature at the moment it changes.

Why It Happens

Both phenomena follow from the limits of attention and from the fact that we retain the gist of a scene rather than a complete, photographic record. We represent in detail only what we attend to, and we assume continuity for the rest. An unexpected object that falls outside the focus of attention may never be consciously perceived, and a change that is not attended at the moment it occurs leaves no compared-against representation, so it is not noticed. These are features of normal perception, not deficits, and they affect attentive, honest observers (Davies & Hine, 2007).

Implications for Testimony

Two consequences follow for legal fact-finding, and they cut in both directions. First, that a witness did not report a person, object, or event does not establish that it was absent or that the witness is lying; a plainly visible event can go genuinely unseen when attention is engaged elsewhere, as the assault studies show. An accusation that a witness 'must have seen' something should be weighed against this science. Second, and conversely, change blindness helps explain certain mistaken identifications: a witness who failed to notice that one person was substituted for another, or that a bystander differed from the offender, may identify the wrong person from a sense of familiarity, a link to unconscious transference. The science cautions equally against inferring too much from what a witness failed to notice and from what a witness confidently believes they saw.

Special Issues in Legal Practice

The principles described above apply with equal force to every party in a legal proceeding. Memory operates the same way regardless of who is asking the questions, and the science summarized here favors no side. What differs between the parties is not the science but the vantage point — the particular places where memory issues tend to surface, and the particular errors each party is best positioned to guard against. The two summaries below identify those recurring issues. They are offered for orientation, not as litigation strategy; in every case the controlling question is what the evidence in that case will, and will not, support, and the expert's role is to inform the trier of fact rather than to advocate for either side.

Special Issues for Prosecutors

For the State, inattentional and change blindness most often arise when a witness, or a defendant, is said to have failed to see something that was present. The prosecution is well positioned to explain that failing to notice a visible event is a normal product of where attention was directed, so a witness's not having seen a detail does not impeach the remainder of an otherwise reliable account, and an officer's or bystander's failure to observe an event nearby need not signal dishonesty (Chabris et al., 2011). The error to guard against is the converse: relying on a confident report of having seen something when the witness's attention was demonstrably elsewhere, or overlooking that a change the witness never registered may underlie a mistaken identification. The safeguard is to develop where the witness's attention was focused and to corroborate accordingly.

Special Issues for Defense

For the defense, these phenomena bear on identifications and on claims about what a witness perceived. The defense is well positioned to show that a witness whose attention was on a weapon, a task, or a threat may not have encoded the offender or the scene as fully as a confident account implies, and that undetected changes can produce sincere misidentifications (Simons & Levin, 1998). The corresponding error to guard against is overclaiming. These effects do not establish that any particular witness missed any particular thing; they show that such failures are possible and common under identifiable conditions. Responsible cross-examination and expert testimony should tie the concern to the attentional conditions of the case, not assert as a rule that witnesses generally fail to see what is before them.

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