Anchoring in Witness Estimation

Witnesses are frequently asked to put numbers on their experience: how fast a car was traveling, how far away they stood, how tall the offender was, how long an incident lasted, how many shots were fired. Two facts about human judgment make this kind of testimony treacherous. First, people are simply poor at absolute estimation; they have no precise internal gauge for speed, distance, height, or time. Second, their estimates are anchored, pulled toward whatever reference value or framing is suggested to them, including by the form of the question asked. The combination means that quantitative testimony is both imprecise and malleable.

This paper explains the anchoring phenomenon, how it operates in witness estimation, why such estimates are so easily moved, and what that implies for testimony that depends on numbers.

Anchoring in Judgment

Tversky and Kahneman (1974) showed that when people estimate an uncertain quantity, they start from an initial value, an anchor, and adjust away from it, but the adjustment is typically insufficient, so the final estimate stays biased toward the anchor. Strikingly, even arbitrary anchors that carry no information move estimates. Later work confirmed that adjustment from an anchor tends to fall short because people stop adjusting once they reach a plausible value (Epley & Gilovich, 2006). Anchoring is among the most robust findings in the study of judgment.

Anchoring in the Witness Box

The classic legal demonstration is Loftus and Palmer (1974). Participants who saw a filmed collision estimated the cars' speed as higher when asked how fast the cars were going when they 'smashed' into each other than when the verb was 'hit,' and those given the stronger verb were later more likely to misremember broken glass that was never present. The wording of the question both anchored the numerical estimate and reshaped the underlying memory. The same vulnerability appears across estimation tasks. Duration is especially unreliable: brief, stressful events are systematically overestimated in length, so a witness who reports that an incident lasted several minutes may have experienced far less (Loftus, Schooler, Boone, & Kline, 1987).

Why Estimates Are Malleable

The root of the problem is that witnesses have no accurate built-in measure for the quantities they are asked to report, so they assemble an estimate from whatever cues are available. When a question supplies a number, a unit, or a loaded description, that becomes a ready anchor, and a leading or presupposing question can plant one without the witness's awareness. Stress and brevity, which impair encoding, further loosen the estimate from any firm basis and leave more room for the framing of the question to dominate.

Relevance for Testimony

Quantitative testimony, speed in a vehicular case, height and weight in a description, the duration of an event, the distance of observation, the number of shots or blows, should be treated as approximate and as sensitive to how it was elicited. Estimates of the duration of frightening events in particular tend to be inflated. The way to limit the distortion is to ask open, non-leading estimation questions that do not supply a number or a loaded verb, and to recognize that a precise-sounding figure obtained through a suggestive question may reflect the question as much as the observation. The phenomenon is neutral: any party can inadvertently anchor a witness, and the controlling question is what the estimate, gathered as it was, can fairly support.

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, anchoring bears on any testimony that depends on a witness's numerical estimate. The prosecution is well positioned to elicit such estimates with open, non-leading questions that do not supply an anchor, and to recognize that figures for speed, distance, height, and especially the duration of a stressful event are approximate (Loftus et al., 1987). The error to guard against is presenting an anchored or imprecise estimate as though it were a precise measurement, or allowing the wording of questions to manufacture a number the witness could not independently supply (Loftus & Palmer, 1974). The safeguard is to corroborate quantitative claims with physical evidence and to present estimates with their inherent imprecision acknowledged.

Special Issues for Defense

For the defense, the research is relevant wherever a case turns on a witness's estimate of a quantity, particularly where the estimate may have been shaped by the form of the questions asked. The defense is well positioned to show how a leading or presupposing question can anchor a speed, distance, or duration estimate and how poorly witnesses gauge such quantities unaided (Tversky & Kahneman, 1974). The corresponding error to guard against is overclaiming. Anchoring does not show that an estimate is fabricated or that every figure is worthless; it shows that estimates are imprecise and movable. Responsible cross-examination and expert testimony should probe how a quantitative claim was elicited and convey its uncertainty, not assert that witness estimates are categorically meaningless.

References

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