

## **The Serial Position Effect**

When people try to recall a series of items, events, names, or actions, they do not remember the series evenly. They remember the beginning and the end better than the middle. Plotted out, recall forms a U-shaped curve: strong at the start (the primacy effect), strong at the finish (the recency effect), and weakest in between. This serial position effect is one of the oldest and most dependable findings in memory research, and although it was discovered with word lists, it has a straightforward bearing on testimony, because a witnessed event is itself a series of moments and actions unfolding in order.

This paper describes the effect, explains why the beginning and end of a sequence are privileged, and identifies its modest but real relevance to how witnesses recall sequences and how material is presented to them.

## **The Classic Finding**

Murdock (1962) had people study lists of words and then recall them in any order, and found the characteristic U-shaped curve: items near the start and end of the list were recalled well, items in the middle poorly. Glanzer and Cunitz (1966) showed that the two ends of the curve behave differently. When recall was delayed by a brief distracting task, the recency advantage for the last items vanished while the primacy advantage for the first items remained, evidence that the two effects rest on different processes.

## **Why the Ends Are Favored**

The primacy effect is generally attributed to rehearsal: the first items in a sequence receive more attention and repetition before the sequence fills up, so they are more thoroughly encoded into durable memory. The recency effect is attributed to the last items still being held in short-term or working memory at the moment of recall, readily available until a delay or a competing task displaces them, which is why a filled delay removes recency but not primacy (Glanzer & Cunitz, 1966). Items in the middle enjoy neither the extra rehearsal of the first nor the immediacy of the last.

## **From Word Lists to Witnessed Events**

The principle generalizes beyond laboratory lists to ordered material of many kinds (Deese & Kaufman, 1957). A crime or accident is experienced as a temporal sequence, and a witness may accordingly retain the opening and the conclusion of an incident, how it began and how it ended, better than the events in the middle. By the same logic, the order in which a witness is shown material, photographs in an array, items in a list of questions, or asked to recount a sequence, can give first-viewed and last-viewed material a position-based advantage unrelated to its importance.

## **Relevance for Testimony**

The effect supports a modest, useful caution rather than a sweeping claim. Gaps or errors in a witness's memory for the middle of an event are an expected feature of how sequences are remembered and should not, by themselves, be treated as signs of fabrication or general unreliability, while comparatively strong memory for the beginning and end is likewise ordinary. Awareness of position effects also counsels care in how material is presented to witnesses, so that an identification or a recollection is not unintentionally shaped by where an item happened to fall in a sequence. The serial position effect is a small piece of context for evaluating sequence memory, not a basis for strong inference about any particular recollection.

## 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, the serial position effect helps explain why a credible witness may recall the onset and the conclusion of an incident more completely than its middle. The prosecution is well positioned to forestall the inference that ordinary gaps in the middle of a sequence betray fabrication, since uneven recall across a sequence is exactly what memory research predicts (Murdock, 1962). The error to guard against concerns presentation: the order in which photographs, questions, or sequences are put to a witness can confer position-based advantages that have nothing to do with accuracy. The safeguard is to structure interviews and identification procedures so that position does not inadvertently shape what the witness reports or selects.

### Special Issues for Defense

For the defense, the effect is relevant where the reliability of a witness's account of a sequence is at issue, or where the order of presentation may have influenced a recollection or identification. The defense is well positioned to note that memory for the middle of an event is the weakest part of a sequence and that position effects can shape what is recalled (Glanzer & Cunitz, 1966). The corresponding error to guard against is overclaiming. The serial position effect does not show that any particular middle detail is wrong or that an identification was driven by position; it identifies a general tendency. Responsible cross-examination and expert testimony should use it to explain expected unevenness in sequence memory, not to argue that a witness's account is unreliable as a whole.

## References

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- Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999).

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