

Five Things Interrogators and Debriefers Must Know About Human Memory

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March 2004

The way that human memory works has powerful implications¹ for intelligence collection from both willing assets and from other sources, such as detainees, whose motives and intentions for providing information are often suspect. Interrogators and debriefers frequently have to make real time, intuitive judgments about what is reasonable to remember or forget. Officers must decide in the emerging moment how best to elicit information without planting false memories and without giving away too much information to someone who could be trying to thwart collection efforts or otherwise manipulate the situation for personal gain.

Incorrect notions about how human memory works can derail intelligence collection efforts and result in incomplete or incorrect information being put into intelligence databases in several important but very different ways. For example, officers may be misled by an uncooperative source feigning memory problems, and thus not press for information that should be available and readily recalled. In contrast, officers may mistakenly believe that a source "should" be able to remember precise details of interest that may not be recallable, and thus inadvertently create false memories or plant misleading suggestions that compel a source *that is trying to answer accurately* to provide erroneous intelligence. Finally, officers may apply so much pressure on a source for information that is not available (either because it can't be recalled or because it did not happen the way the questioning officer believes it did²) that the source fabricates information to escape adverse circumstances. Incorrect notions about how human memory works may also make debriefers and interrogators vulnerable to deliberate manipulation by detainees who seek to deny information by leading questioners away from sensitive topics.

First, a little background and terminology: Although, neuroscientists argue about theories and parse memory into many nuanced categories, for all practical purposes, we have two kinds. The first is a short-term working memory that generally can hold seven (plus or minus two) chunks of information for up to approximately ten seconds. It is the workspace we use for thinking. It functions as a time sensitive, perishable scratch pad for juggling information required for cognitive operations and must be constantly renewed or it fades and is lost. Information in working memory fades after a few seconds, much like an unfamiliar phone number is forgotten a few seconds after we look it up, unless we keep rehearsing it over and over in our minds. The capacity of our working

memories determines how much information and how many things we can keep actively in mind at the same time.

The second kind of memory is more permanent. These are the memory stores that are retrieved and reactivated in working memory when we try to recall something, like an event that happened to us, details of conversations we've had with others or information we learned in school. Again, scientists quibble about how many categories there are and what they should be called, but essentially interrogators and debriefers need be concerned about two kinds of long-term memory: (1) autobiographical events (called episodic memory) and (2) knowledge of facts and concepts (semantic memory).¹¹

Most intelligence requirements focus on information contained in these two long-term memory stores. However, it is important to note that even under ideal conditions (perfect recall and cooperation), we have access to these memories only when they are active in the working memory of the source. In effect, there is an interaction between the long-term memories we want to activate and the capacity of the source's working memory to receive the retrieved information, hold it in mind, process it, and juggle the cognitive operations necessary to address the question that has been asked. The picture gets much more complicated when we factor in the reality of imperfect source recall, the potential for information loss due to use of translators, variable skill and effectiveness among debriefers and interrogators, and the potential efforts of detainees to foil intelligence collection.

Even when people are trying to provide correct information, accuracy of recall can be influenced by a number of factors. What follows is a list of 5 things interrogators and debriefers must know about how memory works under optimal conditions. References and suggestions for further reading are available in the endnotes.

(1) Memory doesn't work the way most of us think it does

- What is remembered and what actually happened is not the same thing. Memories of past events are not replayed like a recording of what actually happened, but rather reconstructed.
 - The idea that memories of a past event lie dormant until activated—at which time they are replayed as a relatively straightforward record of what occurred is intuitively compelling, but incorrect. The stored fragments of an episode contribute to what we remember, but may not be the dominant influence.
 - What we actually remember is a composite—an emergent property—of (a.) the stored memory fragments of an event (technically referred to a memory engram) and (b.) what the person trying to remember thinks, feels emotionally, and believes at the time of recall.

- Because memories of our experiences are reconstructed in the moment and revised by influences that operate outside of our awareness, what is recalled will inevitably change (in subtle or not so subtle ways) over time or with retelling.
- Memories are sometimes permeable to outside influences. People differ in their susceptibility to these effects, but we are all vulnerable to some extent.

(2) We forget more quickly than we think we do, and worse yet may not notice that we have forgotten or distorted important details^{ivv}

- The vividness and precision of memories fade rapidly with the passage of time^{viii}
 - For about a week or so after an experience, we can provide a near verbatim recollection of what we attended to, processed, and stored during that event. After that, a rapid drop-off in the accuracy and precision of what can be recalled occurs and then levels off after about a month, with only slight declines thereafter. Near verbatim recall decays to recollections of the gist of what happened, and specific details—such as the exact date, the precise location of events, the timeline for what happened, precise details concerning exactly what occurred, specifically who was involved when multiple players were present, and precisely what was said and by whom—all tend to be forgotten more rapidly than a general sense (the gist) of what occurred.
 - When asked to recall precise information about events that happened more than a few days in the past, we recall the gist of what happened and then try to piece together specific details by inference and guesswork. During the act of remembering, we reconstruct specific details of fading events from the fragmented bits we do recall, influenced by our current thoughts, emotions and beliefs.
 - Doing similar things day after day will **increase** the probability that we will remember having those experiences, but **decrease** the probability of recalling the specifics of any one of those events. For example, if you routinely stop your child on his or her way out the door to meet the school bus, it is likely that you will generally recollect doing this, but, if questioned, it is unlikely you could recall specific instructions and comments you made to your child several weeks ago. The repetition of similar events interferes with recall of details from a specific event. Another example: Imagine that you have attended multiple meetings over the course of several weeks or months to discuss some important course of action. Without the aid of notes and meeting minutes, you may remember attending meetings, you may even recall the gist of what positions were taken by important people—but things like precisely how many meeting

there were, who attended each meeting, where they sat, who they talked to, and what specifically they said is likely to be fuzzy. Such information would probably need to be reconstructed as discussed above based on what you could recall and what you reason must have happened.

- People often forget how memories are acquired. It is common to learn factual information and forget or confuse the source. This manifests itself in intelligence debriefings when detainees correctly recall a fact or recognize someone they've seen before, but misidentify the source of that knowledge or the setting where it was obtained.
- The task for debriefers and interrogators is to make judgments about what is—and is not—reasonable to forget at different times after an event has occurred, and to recognize when memories appear either too perfect or too imperfect and adjust their approach accordingly.

(3) What we thought and felt when an event occurred can influence the accuracy of what we recall now.

Attentiveness, attitudes, expectations, and emotional states of a person at the *time an event occurs* can profoundly affect his or her perception of what happened and the accuracy of subsequent memories.

- The level of preoccupation or distraction during an event can cause us to notice, track and store some details and not others.
 - Being lost in thought, preoccupied with particular features of emerging events, or otherwise distracted can interfere with what gets stored into memory. In order to be accurately recalled later, details of events must first be noticed as they occur and then subsequently processed deeply enough to permit long-term storage.
 - What is attended to will profoundly affect what is stored and later recalled. In a busy situation with multiple players and multiple activities, different players will perceive events differently and recall some details differently because intentions, expectations, beliefs and emotional states can cause us to notice, selectively process and then store some details during events and not others. Thus, two people witnessing the same event may have different perceptions and memories of what occurred (sometimes significantly so) depending on where they put their attention, what they expected to happen^{vii} and how deeply they processed what they saw, heard and thought at the time.

- People tend to notice, attend to, track, process, and later recall aspects of events that are consistent with their on-going intentions, expectations, beliefs and emotional states at the time the event occurred.

(4) What we think and feel now can distort our recall of what happened then^{ix}.

Our beliefs, attitudes, knowledge, expectations, and emotions at the time of recall can distort our recollection of past events.

- Powerful memory biases can affect accuracy of reporting.
 - *Consistency bias* can lead sources to falsely judge that past attitudes, beliefs, feelings, and actions are similar to those current—regardless of whether they were or not.
 - When provided with information about the outcome of an event that has occurred, *hindsight bias*^x can lead sources to falsely believe that the outcome was inevitable—when, in fact, it was not. Hindsight bias can also lead people to erroneously assume that, had they been presented with available information before knowing the right answer, they would have been able to correctly predict the outcome in advance. Alerting people to the dangers of hindsight does not prevent it from occurring. Also, people's confidence in their judgments cannot be used as a gauge for whether or not hindsight is affecting them because source confidence does not predict accuracy.
 - Asking sources to think of reasons why the outcome might have been different can debias hindsight^d. However, this works only if sources are asked to generate just a few (two or three) alternative outcomes or counterfactual reasons. Asking them to generate more than that can backfire, leaving sources more convinced than ever of the obvious inevitability of events. Why? Because generating many thoughts about alternatives is a difficult task and people use the subjective difficulty of generating counterfactual alternatives as a heuristic for judging how likely something is to occur—If they can't think of many alternatives, then what occurred seems even more likely in hindsight than before.
 - The inadvertent use of questions that activate *stereotypic biases*^{xii} may make some memories more accessible than others, and thus prime the source for selective processing of answer-relevant memories. Although stereotypic bias can affect both, it may be especially problematic during questioning where sources are asked to speculate or provide opinions, rather than factual details about past events. Stereotypic biases trigger selective processing which makes information consistent with those biases easier to recall, more salient during decision-making, and more likely to pull for

responses consistent with the implications of the stereotype. Stereotypic biases can also lead sources upon recall to make a denotative change in the meaning associated with a piece of recalled information.

- Studies have also shown that affect and emotions during recall can influence what is remembered both at the time of recall and then later during subsequent recollection.
 - Memories of similar emotional tone are linked, such that once activated memories and information associated with that emotional tone is easier and quicker to recall, and have a greater impact on reasoning processes. The process also makes information and memories that are inconsistent with the prevailing emotional tone more difficult to recall. When forced by questioning to remember details of events during strong emotional states, we tend to automatically engage in a kind of re-encoding of events that colors subsequent recollection with the emotional tone present when the re-encoding took place.
 - Emotional states at the time of recall can prime cognitive processes that take place outside of awareness as part of the re-encoding of previously acquired memories. Regardless of what was thought at the time the event occurred, strong emotional tone during recall can lead a source to subtly or not so subtly revise his or her
 - Perception of constraints and opportunities at the time of the original event
 - Appraisal of personal capability for different courses of action when the event occurred
 - Desirability of different long-range aspirations and short-term goals based on the past event
 - Positive and negative outcome expectations for different courses of action, and
 - Value placed on different outcomes
 - Emotional tone can even affect which aspects of the event are recalled and which are difficult to remember

In effect, the information contained in memory is selectively processed, and thus re-shuffled according to both the emotional tone of the interview situation and the channeling effects of the question. It is the gist of this reshuffling that is recalled later.

- How questions about an event are worded can profoundly affect immediate and subsequent answers provided by sources^{xiii}. Details or events suggested by interrogators and debriefers can creep into the source's recollection of events without the source being aware of it or able

to distinguish between what really happened and what was "suggested" by questioning techniques.

- o The following techniques can lead to false confessions, inaccurate descriptions of real past events, or the apparent recall of fabricated information:
 - Suggestive questions (i.e., presumptive questions that introduce new information not already provided by the subject)
 - Telling the source that "others" have already provided specific details and pushing for the source to "confirm" them
 - The use of positive consequences when sources provide answers consistent with our preconceived notions
 - The use of negative consequences when sources provide information inconsistent with our preconceived notions
 - Repeatedly re-asking a question that has earlier been unambiguously answered with the intent of eliciting a different answer. Forced choice answers are particularly powerful for eliciting a changed answer.
 - Asking for opinions, conjecture, or speculation about past events (especially about something someone else may have done) or framing questions in ways that ask the source to use his or her imagination, solve a mystery, figure out what might have happened, etc.
- o The choice of verbs used to craft questions can influence answers^{xiv}. Those being interviewed are often unaware of how the verb choices shape and guide their initial and subsequent answers. Interviewers, debriefers, and interrogators also make assumptions about who initiated events based on how their own questions are structured. An unattended choice about how questions should be structured early in an interview can produce defensiveness in those being questioned and pull for answers that incorrectly shape the opinions of debriefers and interrogators—distorting factual information by biasing the assumptions that underlie subsequent questions and influencing how ambiguous answers are interpreted.
 - The choice of using an action verb (help, plot, send) versus a verb that describes an internal state (want, respect, trust) changes whom both the questioner and the source perceive as the initiator of what occurred.
 - Action verbs pull for answers identifying the subject of the sentence as the causal agent of the events in question, while state verbs pull for answers identifying the object of the sentence as the causal agent
 - o For example, "Why would AZ send (action verb) XY to Yemen?" would produce a different

answer than "Why would XY want (state verb) AZ to send him to Yemen?"

- In situations where action verbs are used as probes, question structure can still have differential effects.
 - Imagine, for example, a situation where a law enforcement officer is questioning a rape victim. The question "Did you dance with the rapist?" will have a different impact on both the victim and the officer asking the question compared to "Did the rapist dance with you?" — Even though, if the rapist and the victim did dance together, the objective answer to both questions should be "yes."
 - However, "Did you dance with the rapist?" places the victim as the subject of the sentence. As a result, the victim is likely to be viewed as the initiator of events, and both the victim and the questioner may be lead to assume that the victim had more control over events than actually occurred. Moreover, the victim may become more defensive and less forthcoming to subsequent questions.
 - The victim is the object of the sentence in the question "Did the rapist dance with you?" Therefore, both the questioner and the victim generally perceive the rapist as the initiator of events, and the victim usually responds less defensively to questions.
- This effect can be used by interrogators and debriefers to craft questions that pull for less initial defensiveness from persons of interest by:
 - Initially asking questions using action verbs and placing the person being questioned as the object of the sentence
 - And then once the details of what occurred have been fleshed out, shifting the person being questioned to the subject of the sentence to clarify intent.
- The simple act of retelling a story over and over can distort the accuracy of both what is recalled in the current session and what is subsequently recalled in later sessions.
 - Empirical studies indicate that when stories are repeatedly retold, accurately recalled details of events insidiously blend with information and suggestions provided by questioners such that with retelling, sources:

- Can no longer distinguish between their original (more accurate) recollections and the information suggested by others (a process known as source misattribution).
- Become confident that details or events initially not recalled but asked to speculate upon by questioners actually occurred—whether these things happened or not.

(5) Not every thing that looks like resistance is an active effort to avoid answering questions. Common memory difficulties can interfere with timely and accurate recall.

- Memory blocks^{xv}: Intelligence sources may be temporarily unable to recall sought-after information, even though it was effectively encoded at the time it was acquired and the sought-after memory has survived the passage of time. Such retrieval blocks are quite common (experienced by almost everyone), occur frequently (about once a week in demographic studies of adults in ordinary circumstances), can affect both episodic and semantic memories, and most often manifest themselves during questioning as a temporary inability to recall specific names, although efforts to recall specific dates or facts can also trigger this memory block.
 - In the authors' experience, claiming that memory is temporarily blocked is not usually used as a resistance to interrogation technique, since the expectation is that the information should eventually become available.
 - People experiencing true memory blocks usually complain of a "tip-of-the-tongue" phenomenon, where they have a subjective sense that they know this information and that it should be available, but is temporarily just out of reach of recall. In addition, people experiencing true tip-of-the-tongue memory blocks usually express frustration at the inaccessibility of the information, can often access the target word's first letter, initial phonologic sound, or the number of syllables, and have the information "pop" into their heads when retrieval attempts have been abandoned.
 - Prompting the person being questioned with phonologically related words can sometimes aid recall of temporarily unavailable information.
 - Naturally occurring tip-of-the-tongue events can be used to validate a source's willingness to provide information by following up later to see if the information has been retrieved.

Suggestions for improving recall during questioning

Various strategies^{xvi} have been suggested for improving the accuracy of answers and decreasing the potentially memory distorting impact of interrogation and debriefing techniques. The topic is too vast to be covered in a paper this size, but a few observations and suggestions can be offered.

The interrogation and debriefing techniques you need to employ will vary depending on where a detainee is along the interrogation – debriefing continuum.

- Police interrogations usually focus on eliciting full or partial confessions and obtaining other evidence relevant to the case that can be used in court. Intelligence interrogations and debriefings usually focus on obtaining actionable intelligence that can be used to capture other terrorists and disrupt or prevent terrorist operations.
- In the early stages of a detainee's captivity, interrogation techniques similar to those employed by law enforcement agencies to gain confessions may need to be used to get the detainee to admit involvement in terrorist activities. However, techniques used to get criminals to confess to crimes may not be the best techniques for gathering actionable intelligence over the long term. Since repeated use of these techniques are associated with the greatest danger of adversely impacting accurate recall, care must be taken to balance the need for rapidly obtaining actionable intelligence with the risk of creating false memories, planting misleading suggestions that can distort memory and elicit false information, or coercing a source to make up false information to escape adverse circumstances.

One approach to reducing the risk of unwanted memory distortion^{xvii} is to:

- Plan the debriefing session. Identify session goals. Decide what emotional tone would be best to achieve these goals. Decide on how you are going to induce the desired emotional tone. Decide on what information you seek. Depending on how forthcoming detainees have been, craft questions to service intelligence requirements in ways that initially reduce defensiveness, but provide opportunities to clarify specifics on follow up. Decide what deceptive responses would look like and devise a strategy for judging how forthcoming the detainee is being.
- Start the debriefing session. Make some initial comments or small talk to set the emotional tone. Describe the purpose of the interview. Ask initial questions. Listen as the detainee gives a free account of his answers, monitor for deception, summarize, and then follow up with non-presumptive probes to clarify and expand his answers. Use presumptive questions only if necessary, thus limiting the possibility of introducing new information not already provided by the detainee and thus producing debriefer influenced memory distortions. Provide the detainee with feedback concerning how responsive he was in addressing your questions
 - The authors recommend against deceiving the detainee with false information during debriefings (and most interrogations). False information introduced by a debriefer or interrogator can find its way

into an intelligence report weeks or months later because the detainee repeated the deceptive information in response to later questioning by a debriefer who did not know the deception occurred, either because the detainee forgot the source of the information or believed it to be true.

- Hot wash the session. Review session goals. Clarify what the detainee said in response to questions addressing intelligence requirements with other officers who observed or participated in the session. Make a judgment concerning how successful you were in inducing the targeted mood. Judge how forthcoming and productive the detainee was during the session. Identify what aspects of the approach to continue and what aspects to discard or change in subsequent sessions.

In closing what are the key take-away ideas? The accuracy of information obtained from interrogations and debriefings depends heavily on the source's ability to correctly recall critical details about past events and experiences. Even with a fully cooperative detainee, captivity, interrogation and debriefing conditions can exacerbate the memory failures and distortions so common in ordinary circumstances—significantly impacting the intelligence value of what is obtained.

The intuitively compelling idea that memories are stored as accurate records of what occurred just waiting to be played back must be discarded and replaced with an understanding that memories of our experiences are reconstructed in the moment, subject to inevitable revision by influences that operate outside of our awareness.

Officers must become familiar with the circumstances under which memory errors are likely to occur. They must develop approaches to questioning that motivates the detainee to provide critical information, but reduces the probability that memory accuracy will be adversely impacted or that incorrect post event information will be incorporated.

The commonality of memory errors highlights the need for verifying information obtained during interrogations and debriefings against the larger body of available intelligence. Differences and discrepancies in what detainees report could represent accurate new information, efforts on the part of some detainees to thwart intelligence collection, or errors of memory—such as source misattribution or incorporation of incorrect information because of suggestibility.

Interrogators and debriefers should run to ground important discrepancies, but must exercise caution in thinking that inconsistencies and disagreements between two or more detainees in their recollection of events necessarily provides a "smoking gun" for challenging or discounting information inconsistent with the organization's working hypotheses. It could be a smoking gun, but other

equally likely non-deliberate sources of distortion must be ruled out before coming to that conclusion.

End Notes

ⁱ This paper focuses on memory, so it is beyond its scope to examine in detail all the variables that can influence how a detainee chooses to answer in response to direct questioning. Readers, however, should be aware that variables other than simply the accuracy and precision of available memories are involved. A variety of other physical and mental processes—some operating outside of conscious awareness—channel and shape how a detainee acts, thinks and feels in the emerging moment when questions are being answered. The source's current physical state, emotions, knowledge, attitudes, beliefs, expectations, intentions, and goals all interact to determine how well or poorly the source's working memory functions, the cognitive resources available for mental activities, and which mental operations are activated to channel our attention, energize our desire to act, and influence the courses of action we choose.

ⁱⁱ On a side note: officers who are overly invested in having a source confirm information consistent with their beliefs, render themselves vulnerable to being duped by a crafty resister who can seize the opportunity to weave a misleading story that is readily believed.

ⁱⁱⁱ A third type of long-term memory not discussed in this paper concerns muscle and motor memories we've learned while acquiring complex skills.

^{iv} Schacter, D. L. (2000) *The Seven Sins of Memory: How the Mind Forgets and Remembers* provides a very readable overview of how our memory works in everyday settings. The authors have been heavily influenced by Schacter's other work on memory. Thirty-seven additional professional papers authored by Schacter can be located by searching by author in the American Psychological Association's Full Text Journal Article Database.

^v Thompson, C. P., Skowronski, J., Larsen, S. F., & Betz, A. (1996) *Autobiographical Memory: Remembering What and Remembering When*. Mahwah NJ: Erlbaum Associates.

^{vi} Rubin, D. C. & Wenzel, A. E. (1996) 100 years of forgetting: A qualitative description of retention. *Perception*, 103, 734–760.

^{vii} Schacter, D. L. (1996) *Searching for Memory*. New York: Basic Books

^{viii} Expectations heavily influence what we attend to. For example, if we expect someone to be helpful, we tend to notice and track (and later recall) that person's helpful acts. Conversely, if we expect that same person to try to take advantage of us, we tend to notice and track details that confirm these suspicions. Moreover, ambiguous behaviors on the part of that person are more likely to be interpreted consistent with our preexisting expectations rather than objectively evaluated on their own merit.

^{ix} Schacter (1996) and (2000) above. Also Thompson et al. (1996).

^x See Holzl, E., Kirchler, E., & Rodler, C. (2002) Hindsight bias in economic expectations: I knew all along what I wanted to hear. *Journal of Applied Psychology*, 87, 437 – 443. Also Rudiger, F. P., Bender, M., & Lachmann, G. (2002) Hindsight bias around the world. *Experimental Psychology*, 49, 270 – 282.

^{xi} Sanna, L. J., Schwarz, N., & Stocker, S. L. (2002) when debiasing backfires: Accessible content and accessibility experiences in debiasing hindsight. *Journal of Experimental Psychology*, 28, 497 – 502.

^{xii} Bodenhausen, G. V. (1988) Stereotypic biases in social decision making and memory: Testing process models of stereotype use. *Journal of Personality and Social psychology*, 55, 726 – 737.

^{xiii} Gudjonsson, G. H. (1992) *The psychology of Interrogations, Confessions, and Testimony*. New York: John Wiley & Sons.

^{xiv} Semin, G. R. & De Poot, C. J. (1997) The question-answer paradigm: You might regret not noticing how a question is worded. *Journal of Personality and Social Psychology*, 73, 472 – 480.

^{xv} See Brown, A. S. A review of the tip-of-the-tongue experience. *Psychological Bulletin*, 109, 204 – 223. Also, James, L. E. & Burke, D. M. (2000) Phonological priming effects on word retrieval and tip-of-the-tongue experiences in old and young adults. *Journal of Experimental Psychology*, 26, 1378 – 1391.

^{xvi} See Kassir, S. M. (1997) The psychology of confession evidence. *American Psychologist*, 52, 221 – 233 for a brief introduction. Also see Gudjonsson, G. H. (1992) *The psychology of Interrogations, Confessions, and Testimony*. New York: John Wiley & Sons for a more comprehensive description of different law enforcement interrogation approaches.

^{xvii} The authors acknowledge that there may be times when it is desirable to induce memory distortions for purposes of manipulating or exploiting a source, but such actions are usually done to get a source to think, act or feel in a targeted way, not directly to promote accurate recall of past events. Such manipulations and exploitations are not the topics of this paper.