Content versus Context in the Accuracy of Episodic Memories

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STATEMENT BY AUTHOR

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Abstract

For this study branched off from past research on episodic memory and the known variation between memory for the content of an episode and memory for the context of an episode. By designing multiple cognitive tasks, as well as two reading tasks, we were able to create vivid, new episodic memories that we were able to control. In this manner, unlike past research that focused on episodic memory from a participant’s lifetime, we will be able to definitively test the accuracy of a participant’s memory. The data that was collected from this study showed significant differences when comparing memories for details of the content of an episode with memories for contextual details of an episode. It appears that only remembering the content of an episode will lead to more accurate memory later on, while only remembering the context of an episode will yield not. In addition, initially recalling content details seems to increase ability to remember contextual details at a later time.

Introduction

The memory classification known as “Episodic Memory” denotes a certain type of memory in which facts or details about personal events are encoded, stored, and then later recalled when necessary. This type of memory is separate from yet another large classification of memory known as “Semantic Memory” which, in short, are the simple facts, dates, numbers, and other trivial pieces of information that we retain over the course of our lifetime. Both of these categories of memory fall under the broader and
more general classification of “Declarative Memory”—memory that we can actively retell—but each one has its very distinct characteristics. For example, episodic memory would entail remembering a birthday celebration, while an example of semantic memory could be remembering the simple fact of what date your birthday falls on. This division of memory—and the subsequent names given to each of these two branches of memory—was first discussed by Endel Tulving (1972). While this study will exclusively examine episodic memory, it is important to first discuss this distinction between these two classifications, and state their inherent differences.

In a more recent publication, Tulving (2002) attempts to further his exploration of the concept that he deemed “Episodic Memory”. Speaking of episodic memory, he states that, “It is the only memory system that allows people to consciously re-experience past experiences” (Tulving 2002). In being able to re-experience the past, the human mind is able to “…mentally bend the constant flow of time” and focus on the details of the setting, emotions, time, and sensory reactions associated with a certain portion of the past, or “episode” (Tulving 2002).

Using the work of Tulving as a basis and a starting point, other researchers have discovered many intriguing happenings within the processes of human memory and have developed numerous theories to explain these unique instances. For quite some time, researchers knew that the hippocampus—a curved structure in the medial-temporal lobe of the brain—plays an integral role in the process of episodic memory (Nadel & Moscovitch 1998). In the past, researchers believed that, over time and after memories were repeated over time, the role of the hippocampus in the retrieval of details for episodic memory slowly deteriorated (Nadel & Moscovitch 1998). It was a widely held
belief that the neocortex—which is also known to play an important role in memory—slowly took over the roles associated with the retrieval of details pertaining to episodic memories (Nadel & Moscovitch 1998).

In their publication, Nadel and Moscovitch (1998) propose an alternate theory to explain the interactions between the hippocampus and the neocortex during the retrieval of episodic memory. This theory, which will soon come be known as Multiple Trace Theory (MTT), states that instead of the hippocampus ‘passing on’ memory retrieval duties to the neocortex, that rather the two structures remain in a constant state of cooperation in order to accurately recall and reconstruct details of an episodic memory (Nadel & Moscovitch 1998). In addition to this continued cooperation between the hippocampus and the neocortex, MTT states that rather than recollecting one memory over and over, the brain will actually rewrite each new memory with each new retrieval (Nadel and Moscovitch 1998). Once the episode is retrieved, that retrieval will then serve as the basis for the subsequent retrieval, and the process will continue on in that manner.

Other researchers have examined this theory and used it further their own discoveries about memory. In a series of imaging studies, Ryan and her associates (2001)—including Nadel—used functional magnetic resonance imaging (fMRI) to evaluate the validity of MTT (2001). For this study elderly participants were asked to recall both remote memories (those that were from at least twenty years ago) and recent memories (those from within the last four years) while in an fMRI scanner (Ryan et al. 2001). While in the scanner, participants were cued to focus on resting their mind, and were also given simple sentence completion tasks. The latter two instances served as control conditions in relation to the memory retrieval stages. The results of this study showed that the
hippocampus did indeed remain activated in older memories and the recent versus remote memory categories showed no significant differences (Ryan et al. 2001).

As a continuation of this research Nadel and his associates (2007) followed up this study with many more that followed the same general design. In one specific study, elderly participants were again asked to recall numerous life experiences from both their recent and remote past, but in this instance, the participants were interviewed and asked to recall their memories multiple times over the course of a month. The memories were divided so that some of them would be repeated multiple times over the course of a month and some were only retrieved at an initial fMRI scanning session and at a final scan that took place at the end of the one-month period (Nadel et al 2007). All memories were recalled during both scanning sessions, but those memories that were placed into the repeated recall group were recalled by the participants during a series of interview sessions. These interviews were recorded, transcribed, and later coded for memory details. As MTT would have suggested, the participants’ memories expanded and grew to incorporate new details (Nadel et al. 2007). Interestingly, this change only took place the memories that were retrieved repeatedly over the course of the month. The fMRI scans showed that, while the hippocampus remained activated in all conditions, other brain regions increased in activity for those memories that were repeated and remained constant for those that were not repeated (Nadel et al. 2007).

In another area of memory research, other researchers were able to show how memory can become inaccurate over time. In his “War of the Ghosts” study, Bartlett (1932) looked at the accuracy of participants’ memories for a convoluted Native American Legend entitled “The War of the Ghosts”. Participants were asked to read the
legend and then came back into the laboratory and were asked to retell the story as they remembered it. Over time, the accuracy of the retelling decreased, and soon the participants were not able to remember any correct details of the plot and were only able to correctly recall small insignificant details from the story (Bartlett 1932). While the participants may have given a lot of details in their later retellings of the story, the accuracy of their memory faded.

Finally it is important to take note of another area of research that focuses on memory. In the theories of community perceptions, aging is commonly associated with a slow deterioration in memory levels, but even this process still holds some mystery for psychologists. Spencer and Raz (1995) performed a meta analysis to look at the differences between the content and the context of a memory in association with memory loss due to aging. For their research, the authors looked at a compilation of all studies in which elderly and young participants were asked to complete a memory task of some sort, and when tested on their memory for the task, the participants were asked about both the content of the memory and then context of the memory separately (Spencer & Raz 1995). Upon completion of their analysis, the authors determined that aging most effected memory performance when participants were asked about the context of their memories (Spencer & Raz 1995). This means that there is an inherent difference between how the brain processes the content of a memory and how the brain processes the context of a memory.

When looking at the sum of this past research there are many interesting questions that arise. If there were some way to test the accuracy of a person’s life experiences, would the accuracy for those memories remain intact or would the accuracy deteriorate
over time like in Bartlett’s experiments? Would the question of content versus context have any effect on these results?

In this study we will create a set of tasks that will be cognitively stimulating and offer a wealth of sensory information. Next we will seek to place these tasks in a room in which all of the decorations and furniture are arranged in a particular manner. When participants are in the room, an experimenter can stay in the room as well to take notes about everything that happens in the room. Using this set up we will have participants complete the series of tasks and then will interview them about their memories for the tasks that they just completed. The participants will then come back later to recall their memories of the tasks. The memories will be recorded, transcribed, and then later analyzed for correct details, errors, additions, subtractions, and other details.

For the present study we will clarify some of these questions, and in the process learn more about episodic memory. First, we would suspect that with the passage of time that the accuracy of a person’s episodic memory will remain intact. Secondly, based on past research, we would assume that there would be some innate difference in the accuracy of memory in relation to the content versus the context of that memory.

**Methods**

**Subjects**

Participants for this study consisted of 19 undergraduate students at the University of Arizona. The students were both male and female and ranged in age from 18 to 21.
Participants were recruited from a pool of students that were enrolled in an entrance level psychology class and were granted class credit for their participation. Two participants were dropped after their completion of the first interview due to illness or death in the family, and two participants was dropped after the completion of both sessions based on the suspicion that they had rehearsed and practiced their memory therefore gaining an advantage over other participants.

**Design**

Once participants chose to sign up for the study they were randomly assigned to one of five groups. All groups except for one had four participants. The other group (*) had three. A diagram of the group break down is presented below (see figure 1).

(Figure 1)

After they finished the cognitive tasks, two groups were only asked to remember details about the content of the tasks that they just completed. This meant that they were only asked to talk about what they did in each individual task and were asked to ignore any details of the room that they were in. In comparison, two other groups were asked to only focus on the context of the tasks and to ignore their memory for the content of the tasks. The two groups within these two broad categories were then divided up into a one-week
later and a two-weeks later condition. This denoted how long the participants’ wanted between their initial memory recall and their second recall. A fifth group completed the tasks and was simply asked to go home without recalling their memory, and came in one week later. During the second recall session, all participants gave their memory for both the content and the context of the tasks.

**Materials**

Materials for this study included those that would be used for data collection and testing of participants as well as materials needed for data entry, transcription, and analysis. Each of the seven tasks were set up at certain locations around a laboratory and were placed one of seven different colored foam mats. The mats were approximately 11”x17” and were brightly colored. Instructions for each task as well as all necessary materials for each task were placed on the mats. The materials used in the tasks were also purchased, and included a stuffed bear, a large shovel and pail set, three colors or marbles, a plastic container, three colors of Play-doh, and one set of oven mitts. Placing the items on the mats served to delineate the different tasks. The memory interviews were recorded using a hand held Sony digital audio recorder, and were later transcribed to and stored on a desktop computer using Microsoft Word. Once the interviews were coded for specific details, numerical totals and averages were calculated and catalogued using Microsoft Excel.
Procedures

This study was divided up into different sections and took place over the course of either one or two weeks depending on which group the participant was placed into. The two portions of the study are referred to as Session 1 and Session 2.

Session 1

For this session, participants met the experimenter in a large meeting room. The room had offices that connected to the larger meeting room from the inside. When participants entered the room, they were directed straight into one of the smaller offices that was closest to the door. The larger meeting room was darkened so as to keep the tasks that they would be performing a secret. After reading and singing a consent form, the participants were briefed about the nature of the experiment and were given the general instructions that they would follow.

Participants were told that they were going to complete a series of seven tasks that were laid out around the larger meeting room. They were told that their performance on the tasks would in no way be judged or graded. This was done so that the participants would not place any extra pressure on themselves or feel any outside pressure to complete the task, or perform to a set of ‘expectations’. As stated in a previous study about stress and episodic memory by Payne and colleagues (2006), stress during the encoding of an episodic memory can have different effects on different aspects of the memory. Emotional details of the episode will be more accurately remembered and trivial details can often be forgotten (Payne et al. 2006). Next participants were informed that
they would be moving in a clockwise manner around the room and would have to read a
set of written instructions that were placed at each station. The participants were asked to
pay attention to the details of the tasks, as well as the details of their surroundings. This
was done so to ensure that the participants were taking note of as many details as possible
and could encode as many content and context details as possible into memory. They
were then told that they should raise their hand once they understood the instructions and
the experimenter would tell them to begin. Two of the tasks were reading tasks, one of
which consisted of a Native American Legend similar to one used by Bartlett, and the
other consisted of a history lesson about human migration. The other five tasks were
cognitive tasks that were designed to be sensory right and very novel for the participants.
The tasks needed to be novel to help ensure that the experience of participating in the task
would be encoded as a new episode. These five tasks were roughly based on tasks used to
by McIsaac and Eich (2002) in an experiment designed to examine the relationship
between the vantage point, or perspective taken during memory recall for newly created
episodic memories. Much in the same manner as the current study, the experimenters
desired to create new episodic memories for their participants, and then later analyze the
memories that the participants were able to later recall (McIsaac & Eich 2002). A list of
the five non-reading tasks as well a short description of each is listed below.

Tasks:

<table>
<thead>
<tr>
<th>Oven Mitt Paper</th>
<th>Participants were asked to place two oven mitts over their hands and follow a set of written instructions about how to fold a piece of paper.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fold:</td>
<td></td>
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</tbody>
</table>
They had five minutes for this task.

**Tower of Hanoi:** Participants were asked to do their best to complete the Tower of Hanoi puzzle that is often used to test cognitive functioning. They had five minutes for this task.

**Stuffed Bear Song And Dance:** Participants were asked to pick up a stuffed bear and sing a song of their choosing while making the bear dance. They had one minute for this task.

**Clay Sculpture:** Participants were given a small container of Play-doh and were asked to create any object or number of objects that they liked. They had three minutes for this task.

**Marble Mover:** Participants were given a plastic shovel and pail and a container full of three different colors of marbles. They were instructed to move one marble at a time into the pail, but could only use the shovel to move the marbles. They had one minute for this task.
For all five of the cognitive tasks, the participants were told that they would be timed by the experimenter. This tasks were timed to establish a uniform amount of experience that the participants would have with each task, while not allowing any extra time with which they participants could day-dream or lose focus. For the two reading tasks, the participants were not given a time limit and were told to read the passages at their own pace and to read them both twice. This was intended to allow for the maximum amount of attention to be paid to the passages.

The order of the different tasks was randomized for every participant using a random sequence generator function on Random.org. While the participants were performing the different tasks, the experimenter was instructed to take as many notes as possible about the performance of the participants on each task as well as any note worth happenings during the course of the session. These instances included any questions that the participants asked during the experiment, a disturbance caused by the experimenter or participant, or anything else that would have stood out from the normal experiment procedure.

Once all of the tasks were completed, the participant was asked to re-enter the adjacent office that they originally entered and were asked to wait for the experimenter. During this time, the experimenter re-entered the larger meeting room and shut off the lights in the larger room. This served numerous functions and both allowing for a state of cognitive rest for the participants and moved the participant out of the environment in which they initially encoded their new episodes. This would ensure that the memories that the participants conveyed would not be influenced by any other factors or cues present in the room. The participants in the No Immediate Recall group were instructed to
enter the adjacent office after completion of the tasks and the experimenter jumped
directly to the dismissal at the end of Session 1 (see below)

The participants were then asked to recall their memories for either the content of
the tasks—what specifically they did in each task—or for the context of the tasks—what
was going on around them in the room and what the room looked like. In both instances,
the participants were told to only focus on their specific topic and were instructed to
ignore the details of anything else. For example, participants in the Content Only group
would ignore all details for the context of the tasks. If at any point during the interview
the participant accidentally began to talk about details other than those they were limited
to discussing, the experimenter was instructed to quickly stop them and refocus their
attention on the details they were asked for. When recalling the context details,
participants were allowed to talk about anything and everything that they could remember
about the order and location of the stations, the layout of the room, or any other details
they could remember about the room or the stations. When asked to recall details about
the content of the tasks, the participant was given the title of one specific task, was
allowed to talk about that task, and then was cued with the title of another task. This
served to create seven different unique memory traces that could function independently
of one another. The order in which the participants recalled the tasks was randomly
generated, again with the help of the sequence generator on Random.org.

After completing the interview session, participants were given a reminder about
the next session, were asked to not talk to anyone about their experiences during the
experiment, and were allowed to leave. Participants were asked to refrain from about the
experiment so that they would not focus on or rehearse their memories of the tasks.
Session 2

Session 2 of this study took place either one or two weeks after Session 1 depending on which group the participant was placed into. Setting up the two groups in this manner was designed to help examine the role that different periods of time between successive memory retrievals would have on accuracy. In piloting for this study, we were able to determine that waiting one or two weeks between the first and second memory retrieval yielded no statistically significant difference. On the other hand, we noted that not remembering the tasks immediately after their completion yielded far less accurate memories one week later. Based on this, we determined the No Immediate Recall group would be our baseline so that we could test the effects of not initially remembering content versus the effects of not initially remembering context.

For this session, participants met the experimenter in a completely separate room from the one that was used in Session 1. Again, this was done so that there was no risk of any environmental cues from the original room activating memories for the tasks. Just as was the case in Session 1, this interview about the participants’ memories was recorded using a hand-held Sony digital audio recorder. This session progressed much like the end of Session 1, but this time all of the participants were asked to recall their memories for both the content and the context. All participants were first asked about their memories for the context—meaning their surroundings and details about the room—and then were asked to recall the content details for each individual task. Again, the order in which each task was remembered was randomly generated thanks to the sequence generator at Random.org.
Once all of the memories were retrieved, the participants were orally given an thorough debriefing detailing all of the details of the study. They were also given a paper copy that they were allowed to take home. Before the participants were allowed to leave, the experimenter asked two follow-up questions pertaining to the study. First, the experimenter asked the participants if they at anytime since Session 1 they found themselves practicing or actively rehearsing their memories for the tasks. Since participants were informed at the very beginning of the study that taking note of the details would be important, and since the title of the study itself mentioned memory, there was a slight risk that participants would rehearse their memories and therefore destroy the external validity of their data. Since no real world episodic memory is actively rehearsed, doing so would obviously jeopardize the validity of the experiment. The question was phrased in a way such that the participant would feel no guilt if they had in fact rehearsed their memories. Two participants did confirm that they had rehearsed their memories, and after doing so were informed that their data sadly could not be utilized.

The second follow up question was intended to shed light on the mental processes at work during the experiment, and during memory retrieval. The participants were asked to describe their own individual mental strategies for retrieving their memories of the episodes. They were asked to narrate what was going on in their mind’s eye. The participants’ responses to this question will be addressed in the discussion section. At this time, the participants were granted the credit they had signed up for and were allowed to leave.
Data Analysis

One all of the interviews were complete, data analysis could begin. Every interview from both Session 1 and Session two were transcribed by the experimenter and saved as a Microsoft Word document. Next, the transcribed records of the participants’ memories were coded for certain details. (See list below)

- **Yellow** = Correct Details (based on notes and known data)
- **Lt. Green** = Correct Details (based on P’s memory, feelings)
- **Turquoise** = Incorrect Details
- **Pink** = Correct Additions
- **Blue** = Incorrect Additions
- **Red** = Uncertainties (um, maybe, I don’t know/remember, etc.)
- **Purple** = Self-editorial (oh wait, back and forth, no it was..., etc.)
- **Green** = Incorrect Title Recognition
- Blank = Repeated Details

At this point, the number of details for each category were tallied and entered into a spreadsheet on Microsoft Excel. All scores within each individual category for each participant for the five cognitive tasks were averaged to create a large consensus score. This average that was calculated for each participant, and for each category of detail was denoted as the “Content Score”. The combination of the two “correct detail” categories (yellow and light green above) was used to define our measure of “accuracy”. Thus these two in conjunction for the content memories would be the accurate “Content Score” total. Much in the same manner, all scores for the two reading tasks were tallied for each participant, and for each type of detail. Again, the two “correct detail” categories were
combined to form a total accuracy score. This score is referred to as the “Story Score”. Finally, the scores for the contextual memories of each participant were tallied yielding a “Context Score” and once again the two “correct detail” scores were combined to yield a total accuracy score. All three of these scores were then averaged for all of the participants within each group, giving a total group score for each of the three memory scores. These data points were then analyzed using the Statistical Package for the Social Sciences (SPSS).

Results

Once all of the grouped scores were calculated they were tested against one another to look for statistical significance. The data showed very interesting initial trends (see charts) but would need to be analyzed before any definitive conclusions could be made. The data analysis for this experiment consisted of multiple Mixed Factorial ANOVA tests, as well as independent samples T-tests.

![Chart 1: Total Content Scores](chart1.png)

Chart 1
Total Content Scores
The first statistical analysis that was performed was a mixed factorial ANOVA that compared the within-subject variable Detail Types (Total Content Score, Total Story Score, and Total Context Score) and two between-subject factors, Group (Content versus Context) and Time Interval (One-week versus Two-weeks). The analysis showed a significant between-subject main effect for the variable Group across all three of the Total Scores \[F(1,11) = 7.03 \ p<.05\]. This means that across all three of the Detail Types, there was a main effect for content versus context. When the participants initially remembered the content of the tasks, their memory was more accurate overall than for the participants that initially remembered the context of the tasks. This test was followed up by an independent sample T-test to determine which of the three Total Score categories yielded
the highest significance. The T-test showed that both the Total Story Score and the Total Context Score categories yielded a significant differences between the content and context group (p = .007 and p = .05 respectively) while the Total Content Score yielded a marginally significant difference (p = .079). These individual differences combined to create the main effect for content versus context.

The next analysis that was performed was another mixed factorial ANOVA that examined the three groups (Content Only, Context Only, and No Immediate Recall) as the between-subjects variable and the within subject variable Detail Type (Content, Context, and Story). The analysis showed a significant main effect of group in the comparison of the Content Only group, the Context Only group, and the No Immediate Recall group [ F(2,16) = 5.56 p,.05]. This would mean that Content Only group scores noticeably better than the No Immediate recall group for all of the Total Score categories, while the Context Only group scores just as poorly as the No Immediate recall group across all Total Score categories.

**Discussion**

The results of the present study provided support for one of our hypotheses, and also demonstrated some new interesting trends in the development and modification of episodic memories over time. As we had hypothesized, there was no significant decrease in the accuracy of a person’s episodic memory in relation to time. Regardless of whether a participant was placed into a one-week group or a two-week group, the accuracy of their memory remained relatively intact. Also, we were able to see the very interesting
behavior of memory in relation to the variables of content and context. The data suggests that when a person is asked to remember the content of an episode immediately after an event occurs, even if they disregard their memory for the context of the episode, the accuracy of their memory is maintained over a two week interval. Furthermore, when they are asked at a later time to recall their memory for the context of the episode, they are able to do so with great accuracy, even though they had not originally recalled those contextual details. In comparison, when a person is asked to recall their memory for the context of an episode immediately after an event and ignores or does not explicitly recall the content details of that episode, the accuracy of their memory suffers over time. When asked to recall the content details of an episode later on, their responses are not very accurate. Furthermore, when these people are asked to recall the context of an episode again, their memory is less accurate than participants that had initially remembered content of the event. In other words, remembering the contextual details of an episode will not allow for an increased ability to accurately recall those same details at a later time. So why is it that actively remembering the content of an event has such a profound effect on someone’s ability to both recall content details again, and recall contextual detail as well?

In an attempt to explain this phenomenon we asked participants a follow up question in hopes that they could shed light on this interesting mental process. As stated previously, the participants were asked to explain how, in their mind, they were able to reach back into their memory and retrieve the content details for each individual episode. When answering this question, three variants on the same general answer came up in the response of every participant. One common response was that in their imaginations
participants saw themselves in their own shoes walking around the room and performing the tasks over again. Another popular response detailed the participant seeing the entire session as a movie in which they had a third person perspective and were watching themselves go around from task to task. The third and final variant of this answer included photographs, or snap-shots of the tasks and the room that the participants ‘saw’ in their memory. The common thread that all of these answers have in common is that they all involve the participant ‘visually’ recreating the entire session in their heads and then going through the tasks. This answer may seem more like common sense than anything else, but offers an interesting interpretation of the data that we have shown.

Perhaps in the process of the participant recreating the entire scene in their heads they are unintentionally focusing on contextual details as well as the content details. Despite the fact that they are directed to ignore the context of the specific episode—and for that matter refrain from ever mentioning these details—the process of mentally visualizing the episode forces them to focus on the contextual details as well as the content details. This would explain why participants that are only asked to recall the content details initially are able to recall contextual details with such precision and ease. Also, since the participants initially remember the content details of the episodes—which also include the stories that they read—then it is no surprise that they are able to recall these details accurately later on.

So, if that is the case, why then wouldn’t participants who are instructed to initially only recall contextual details experience a similar effect? Perhaps episodic memory retrieval is sequential in that first the context of an episode is retrieved, then later details of the content of the episode, and possibly emotional states associated with the
memory are retrieved. This would offer an explanation as to why participants who were asked to only remember contextual details of an episode were not able to remember content details as well later on. If the participants were able to “cut off” their memory retrieval process after gathering information about the context of an episode, we could assume that there brain simply never reached the point at which content memories are activated. Perhaps this “stunting” of a hypothesized sequential memory process is the reason why participants who initially focused on contextual details of an episode offered less accurate memories in general later on.

The many intriguing findings from this research pose new questions about episodic memory. With future research we hope not only to replicate these findings and solidify the validity of our experiment, but we also hope to look further at our hypothesized explanation for the interesting trends that the data present. We would also hope to manipulate other variables in an attempt to learn more about the accuracy of our episodic memories and the effects that repetition and the passage of time play might have. For example variables could be manipulated to see what happens to the accuracy of the participants' memories over longer time intervals. Comparing longer time intervals with multiple retrievals—could be another aspect of this study that could be manipulated in the future.

This research is not only valuable to the field of psychology and the advancing of knowledge about the complex mental processes associated with memory, but also to other fields. For example, the value of this research can be noted in the practice of law and in the judicial system. In criminal cases where eye-witnesses are questioned multiple times about a crime, many variables come into play. Time between retrievals is obviously a
factor in that in an often over-worked legal system, cases are heard and trials take place months or even years after the crime was committed. Also, because of the numerous depositions and testimonies that are associated with being an eye-witness, there is also the issue of multiple retrievals. Finally there is the importance of the police statement that can be given either immediately after a crime, or in some instances is not give until much later. The combination of these factors can all be seen in this research. Knowing the interplay between these factors and knowing their effects on the accuracy of an episodic memory—in this case being an eye-witness testimony—is very important. Hopefully with the continuation of this line of research many aspects of society can feel reap the benefits of further knowledge about the accuracy of episodic memory and its dependence on contextual and content-focused details.
Bibliography


