

# Paterson, Anna Research Paper

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## Final Research Paper: Memory; What Dictates What We Remember?

### Psychology of Language and the Mind

#### Introduction

For my research project, I chose to investigate memory and how the relevance of the topic dictates what information we remember. I chose this topic because not only is it relevant to our class, but I find it fascinating how two people presented with the same information might take away different bits of knowledge. My research intended to investigate memory recall as it pertains to topics discussed during the recent American presidential election debates featuring Hillary Clinton and Donald Trump. I chose a clip from the first debate between Trump and Clinton because I knew the recent US presidential election was not only significant to Americans, but to people around the world as well. The dichotomy between the two nominees and the topics important to them came across during the debate clip, and I wanted to investigate the information people would remember from this clip as it relates to the information they would find relevant to their own lives. From personal experience, watching the debates prompted my interest in current policies and the ways in which American society and culture would change depending on the individual elected. Therefore, I found myself remembering Trump's political thoughts because I was concerned about how they might impact Americans and myself, and I remembered a great deal of information regarding Clinton's political opinions because I tended to agree more with her policies and beliefs. This personal experience led me to wonder, why do we remember certain pieces of information but not others?

Before I began conducting my research I contemplated a few questions that I hoped to shed light upon once I acquired sufficient data: What information presented during the debates did other people remember? Was it the same information that I could remember? Do people remember Hillary Clinton's opinions because they prefer democratic politics, or would they remember Donald Trump's opinions because they prefer republican politics? Or, would people remember Trump's political thoughts because they disliked him and were concerned about his politics or vice-versa for Clinton?

To find the answers to these questions I conducted a research project through the synthesis of relevant class readings and my own theories to create a design that could attempt to accurately gauge an individual's recall. I drew from Steven Pinker's work "A Digital Mind in an Analog World" pertaining to the way in which humans categorize information into relevant areas. My hypothesis as it relates to this research was that a person will be able to recall information from the debate clip that was relevant to them, and Pinker's text explains that if input is important to an individual they will remember specific details rather than simply the general gist of the information. Additionally, Eric Kandel's "In Search of Memory" maintains that we wouldn't be who we are without memory. As it relates to this research, Kandel's work emphasized that without our memory we would not be able to distinguish what is relevant to our individual lives, just as without memory we would not be able to make connections and group information into individual categories because we would have no recollection of prior experiences. If we were

unable to group information into individual categories we would not know what information was relevant to us, and would therefore be unable to recall specific information such as that from a debate between Hillary Clinton and Donald Trump. Pinker's work regarding the human ability to categorize relevant information and Kandel's work emphasizing the importance of memory in creating individualized mental categories helped to influence how I structured my data collection and thoughts regarding my thesis.

### **Relevant Outside Research**

In my research of this topic I was unable to find studies conducted in the way in which I chose to conduct mine. That is, I did not find any prior research using a video and survey to gauge a participant's recall. I acknowledge that is likely because there are many outside influences that dictate the specific information an individual can recall, but I chose to continue with this research approach because I felt it to be a unique way of collecting data regarding this topic. However, I found two research studies investigating recall that assisted in shaping the way I conducted my research and formed my research questions.

The first study, published in *The European Journal of Psychology and Education* and conducted by Jennifer Murray and Mary E. Thomson, studied 121 participants aged 11-25 given a language-based memory task presented either visually, acoustically, or through a combination of both visual and audio presentation. Unlike my study where participants were asked to watch a video and later take a survey answering comprehension questions, participants in Murray and Thomson's study were presented with a wordlist of 15 concrete and 15 abstract words and the researchers analyzed whether visual or audio input is more beneficial in inspiring recall. The researchers found that overall, as academic experience increased cognitive overload was more significant. In other words, the older age groups were unable to process and recall information as well as younger age groups. Additionally, the study concluded that as academic experience increased, visual presentation of information was more beneficial for recall than acoustic or audio-visual presentation.

Although it is difficult to draw comparisons between our two studies solely because the way in which the studies were conducted fundamentally differs, I also used both visual and combined audio and visual modes of presentation to test recall. Murray and Thomson were also testing recall, but I was testing whether the relevance of information helps dictate recall, while they tested which mode of presentation best stimulated recall. As opposed to wondering why individuals fundamentally remember what we do, the research pair investigated which mode of presentation was best to initiate recall. Although initially it intimidated me that my research approach could be unreliable because I found little prior research using videos, I was encouraged by Murray and Thomson's use of visual, audio, and audio-visual modes of presentation to test participants, as I intended to use a primarily audio-visual presentation.

The second study, conducted by Michelle L. Meade and Henry L. Roediger III and published in *The American Journal of Medicine*, studied the effect of initial forced recall on later recall and recognition tests. In this fascinating study entitled, "The effect of forced recall on illusory recollection in younger and older adults," researchers presented participants with categorized

word lists and gave the initial test with either a warning against guessing or specific instructions to guess when recalling the information. The study found that if the conditions of the study encourage participants to guess on the first memory test, it's more likely that they will recall these guesses as actual memories on a later test. This effect was found to be stronger in older adults rather than younger adults, and the researchers assumed it was likely because older adults have a more challenging time subconsciously determining whether a memory is "real" and happened in their life or the memory is from a source like a movie or a dream. By default, this study also investigates relevance and its role in recall. If an individual believes the guess occurred in their life and is thus a legitimate memory, the individual will categorize the information and will determine which information is relevant to them, which is the topic on which my study aims to focus.

### **Thesis**

If the information shown in the debate clip was impactful to the viewer, the viewer will demonstrate this by storing the information in long-term memory and recalling the information for the quiz.

### **Research Method**

I created a survey comprised of eight comprehension questions based off the information presented at various points in the clip of the debate. These questions were:

1. What color was Clinton's dress?
2. What were the topics mentioned during the debate?
3. What was the color of Trump's tie?
4. According to Trump, what was the worst trade deal ever signed?
5. Has Trump paid federal taxes?
6. Was Clinton wearing earrings?
7. How significantly does Trump plan to reduce taxes for business owners?
8. Why does Clinton think her stamina is better than Trump's?

The debate clip and survey were sent out in an email via Survey Monkey entitled "Trump – Clinton Debate," and participants were given specific instructions to first watch the video clearly attached to the email. Second, participants were instructed to distract themselves with social media or another mindless task for up to two minutes following the video. The purpose of this instruction was to show that when they took the survey, the only information they would have access to in their recall would be relevant to them, not residual information left in the short-term memory 30 seconds after watching the clip. Finally, participants were asked to press the button in bright blue clearly stating, "Begin Survey," and take a few minutes to complete the questions. Prior to pressing the "Begin Survey" button participants could not see the questions. I received 20 responses from the 35 individuals to whom I sent out the survey, all of which were Caucasian Americans between the ages of 18-52 whose first and only language is English.

## Survey Results

I am aware that the population of individuals tested in my study is in no way diversified, but that is the population to whom I am most connected and had the most access to during the time the study was conducted. After receiving 20 responses, the following is a break-down of the percentage of correct responses for each comprehension question:

1. What color was Clinton's dress? → 81% correct, red
2. What were the topics mentioned during the debate? → 70% correct, stamina, jobs, taxes, birtherism, Iraq
3. What was the color of Trump's tie? → 80% correct, blue
4. According to Trump, what was the worst trade deal ever signed? → 100% correct, NAFTA
5. Has Trump paid federal taxes? → 80% correct, no he has not
6. Was Clinton wearing earrings? → 80% correct, yes
7. Why does Clinton think her stamina is better than Trump's? → 80% correct, she has negotiated peace deals
8. How significantly does Trump plan to reduce taxes for business owners? → 30% correct, decrease by 20%

I purposely designed the question regarding Trump's plan to reduce taxes to be the most challenging comprehension question in the survey, which seemed to cause the most problems for participants because it would have required them to do the math independently after hearing two specific percentages, and it was clear that not many people who took the survey were interested in the exact percentage decrease proposed by President Trump. Unfortunately, I was unable to analyze individual results as Survey Monkey requires a fee to access that information, but I would have liked to know individual responses in order to determine how the responses from specific individuals factored into the overall survey results. I also found it interesting that consistently across most questions, the response rate was about 80%. Was this because one or a few people were consistently guessing and threw off the percentages? Or are these percentages an accurate summary of individual responses combined to create a whole picture?

## Analysis of Results

Overall, the results of the study made me truly analyze and contemplate what I choose to focus on and why I remember the knowledge that I do. I believe it was beneficial to use a clip from the 2016 US Presidential Debate because the information voters and people around the world remember about what the candidates stated and their stances heavily impacted for whom they ultimately chose to vote. The aim of the study was to use a topic relevant to our current worldly culture as well as a topic relevant to language and the mind, and show that our minds only store and process information it considers to be relevant; humans don't have enough cognitive resources to store information that the brain doesn't want or need. Although this data set provides a small glimpse into the minds of individuals regarding what information they found to be relevant regarding the 2016 Presidential debate, it only paints a small picture in regards to outside influences affecting how and what individuals are able to recall.

## **Improvements**

Numerous improvements can be made to this study, beginning with the selection of participants from more diverse backgrounds. Acquiring participants from a variety of countries, specifically a population whose first language is not English, would be particularly interesting because I would be able to compare their data to those of American English speakers. Would their results be similar or different? How interested were those from other countries in the 2016 US Presidential debate? Would that influence the data? The way in which I administered the test could have been improved as well, specifically administering the study in person as opposed to over email. If I administered the study in this manner I could have potentially acquired more data as well as data from a more diverse population. Stating the instructions and timing the break in between watching the video and taking the survey would have also rid any potential mistakes from occurring in the process of watching the video and taking the survey individually. I could also conduct a similar study featuring presidential nominees from a different period and compare and contrast the results from this study to the results of the study conducted regarding presidents of a different era. Finally, I could have determined prior to conducting the study which political affiliation the participant held. Depending on whether the subject was Democrat or Republican likely swayed the information they retained, and therefore may have impacted the results of the data.

## **Conclusion**

After considering the questions I asked myself prior to conducting the study and the research I consulted before conducting my own research, I feel confident in stating that my thesis was likely proved correct. Although I cannot answer with 100% certainty, I believe the data collected through my study reflected the bias subjects had towards information that was relevant to their lives. Through this study, I examined my own curiosity and executed a study created completely independently by myself, a study unlike any other I could find in online resources examining how our own memories and interests dictate the information we are able to receive, store, and recall. My experimental design was far from perfect and there are quite a few improvements I can make if I ever decide to conduct this research again, but overall I am satisfied with my results and I believe that not only it shows that the small population of Americans sampled for this study were interested in the information posed in the debate, but more generally it shows that the relevance of information plays a crucial role in determining what information we are able to store in our long-term memory and recall.

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