UNIVERSITY OF CALGARY

Episodic Memory and Justified Belief

By

Tyler J McGraw

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE

DEGREE OF MASTER OF ARTS

DEPARTMENT OF PHILOSOPHY

CALGARY, ALBERTA

SEPTEMBER, 2010

UNIVERSITY OF CALGARY

FACULTY OF GRADUATE STUDIES

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Episodic Memory and Justified Belief" submitted by Tyler J. McGraw in partial fulfilment of the requirements for the degree of Master of Arts.

Supervisor, Jeremy Fantl, Department of Philosophy

Allen Habib, Department of Philosophy

Christopher Sears, Department of Psychology

10/30/10

Date

Abstract

This project describes an account of what must be required for a belief based on an episodic memory to be justified. The account is modeled after William Alston's representative theory of what it takes for a belief to be justified. The initial Alstonian account of episodic memory belief justification is considered to be unsatisfactory because it is unable to identify episodic memory belief forming processes in a way that yields intuitive results. However, it is shown that the results of psychological studies on memories for perceived and imagined events can be used as a principled basis for identifying belief forming processes such that intuitive results are obtained. It is concluded that a successful account of episodic memory justification can be provided by the appropriately calibrated Alstonian position.

Acknowledgements

First and foremost, I would like to express my deep gratitude to my supervisor, Dr. Jeremy Fantl. His enthusiasm, patience and particularly his guidance, provided me with a crucial foundation on which to base my investigation.

Secondly, I am indebted to the faculty and graduate students in the Department of Philosophy at the University of Calgary, many of whom were victims of my many thought experiments.

Finally, I would also like to thank my family, friends, and partner, whose support and tolerance during my project was certainly appreciated.

TABLE OF CONTENTS

Chapter One: Episodic Memories

1.1 Introduction

Like personal photographs, episodic memories provide us with information about events in our past. The two are also similar in virtue of the fact that the scene that is being depicted is no longer current. For example, your dog may have been catching a frisbee in the park when the photo was taken, but right now she is in the backyard (digging up your carrots). Photographs are different from memories, however, because they depict the scene exactly how it was, but depicting a scene accurately does not necessarily entail depicting the truth. The lighting, the objects and so on are captured and reproduced just as they were when the photograph was taken. Yet cropping allows photographers to capture particular surroundings in a way that directs what will be conveyed by the photo. Furthermore, a photo may also be misinterpreted (it may look like someone is sad, but those are tears of laughter). Although a photo provides us with raw data, how it is interpreted by us can be different altogether. Thus, as Richard Avedon once said... "All photos are accurate. None of them is the truth."[1]

Episodic memories, on the other hand, depict events differently than how they were when our experience of the event was stored.[2] It's like a picture of some scene depicting the scene differently than how it was when the picture was actually taken (perhaps a chair is moved, or a person's hair is shorter, etc). Changes in episodic

---

[1] "BrainyQuote." http://www.brainyquote.com/quotes/quotes/r/richardave161833.html (accessed July 29, 2010).

[2] Sven Bernecker, *Metaphysics of Memory*, (Springer, 2008), 154, http://www.ebrary.com.

memory content occurs because while it is determined in large part by the events that serve as the remote source of the memory, these remote events are only one among many contributing factors. The content of our experience of the event when it occurs provides our memory with a skeletal structure--a basic shape. The meat of a memory, the rest of a memory's finer details, is provided by us--our minds, our cognitive operations.[3] The way in which the events of our past are represented to us is influenced by both our interpretation of those events and how we believe the world to work.

Compare this to the influence of cognition on how we perceive photographs. The data presented to us, in its raw form, is not affected by our preconceptions. Instead, it is our interpretation of the data that is influenced by our pre-existing schema. Memory content, the data our memory contains, is affected by our thoughts both in the formation of the data and our interpretation of it. There are many cognitive processes that can manipulate our memories, sometimes this leads to small discrepancies between our memories and the truth (perhaps only in tense),[4] other times it can be quite major (such as having a memory of an event that never occurred).[5] Either way, the content of our episodic memories is always modified by cognitive processes to produce content that is different from our initial perception of events in our past. If this is so, then it would seem that we are faced with a serious problem: can we rely on episodic memory experiences in virtue of the fact that they are always modified by our cognitive processes?

---

[3] Mary Howes, *Human Memory: Structures and Images*, (California: Sage Publications, 2007), 163.

[4] Bernecker, *Metaphysics of Memory*, 147.

[5] Daniel Schacter, *The Seven Sins of Memory*. (Houghtin Mifflin: New York, 2001), 124-5.

1.2 The Modal Model of Memory

While my thesis concerns the role of *episodic* memory in justification, a thorough description of the phenomenon will be best served if I begin by discussing memory more generally. "Memory" is often used to identify the faculty which grants us access to events of our past. But we can be more specific in our treatment of the term. Memory is more properly thought of as three different faculties. This is referred to as the modal model of memory.[6] One faculty allows us to process physical stimuli from the very recent past, stimuli that is no older than one-second.[7] This faculty is referred to by psychologists as sensory memory. [8] Sensory memory is preconscious and pre-attentional.[9] It enables us to "hold on to" sensory information while we receive more, thus, enabling us to perceive our world in one continuous stream.[10] Short term memory is a different memory faculty and, in contrast with sensory memory, is conscious and attentional. Short-term memory (STM) allows us to store and work with small amounts of processed information.[11] You utilize this memory faculty, for example, when you try to remember a phone number. The third memory faculty is long-term Memory (LTM). LTM is what we generally refer to in everyday speech when we use the term 'memory.' It is the memory process that enables us to store larger quantities of information for longer

---

[6] Alan Baddeley, *Your Memory: A User's* Guide. (Firefly: Ontario, 2004), 14.

[7] Howes, *Human Memory: Structures and Images*, 49.

[8] Baddeley, *Your Memory: a user's guide,* 15.

[9] Howes, *Human Memory: Structures and Images*, 35.

[10] Alan Baddeley. *Essentials of Human Memory.* (Psychology Press: United Kingdom, 1999), 11.

[11] Baddeley, *Essentials of Human Memory,* 21.

periods of time.[12] When someone tells you about a baseball game they went to last year, or when you can tell someone her age, you are using LTM.

1.3 Occurrent and Non-Occurrent Memory

Memory is usually thought of as a conscious process that provides us with information about our past. This is not, however, the only level at which it works. As noted by Sven Bernecker, we can also make use of our memory at the unconscious level. These sorts of unconscious memories are referred to as non-occurrent memories.[13] To see what sort of memories are non-occurrent we need only to consider our latest commute home from the office. Clearly we were able to successfully arrive at our work without any conscious consideration of which route to take. This scenario is easily explained by the performance of non-occurrent memory--memory functioning at the unconscious level. Our memory provides us with the necessary input at the appropriate times so that we can make our trip home safely and efficiently. My project does not concern memories of this type.

Memories that are consciously utilized by us are referred to as occurrent memories.[14] Occurrent memories are *experienced* and have a particular quality that sets them apart from other mental states.[15] There are many examples of these sorts of memories. When you tell someone about the movie you viewed last night you are

---

[12] Baddeley, *Essentials of Human Memory,* 16.

[13] Bernecker, *Metaphysics of Memory,* 3.

[14] Bernecker, *Metaphysics of Memory,* 3.

[15] Endel Tulving and Martin Lepage, "Where In the Brain Is the Awareness of One's Past," in *Memory Brain and Belief*, ed. Daniel Schacter and Elaine Scarry, 208-228 (Massachusetts: Harvard University Press, 2000).

utilizing an occurrent memory to develop the summary. When you remember that water boils at one-hundred degrees celsius, or how happy you were when you got your first bike, and so on, your memory is being consciously utilized--your memories are being experienced--thus, they are occurrent.

1.4 Episodic and Propositional Memories

While LTM can be thought of as a single system responsible for remembering that transcends either a short amount of time or a limited amount of information, we can distinguish between the different operations which the system allows for. Think for a moment about what you had for dinner last night. This is an occurrent memory about an experience you had. It presents you with certain visual, and perhaps other sense data. Contrast this memory with, say, your memory of which city serves as the capital of France. Your memory that Paris is the capital of France likely does not have any sense data. It is simply an occurrent memory of some fact. It contains only propositional data. While your LTM is responsible for enabling you to recall the relevant information in both of these instances, the type of LTM memory is different in both cases. Psychologists refer to your memory in the former case as an episodic memory, and your memory in the latter case as semantic memory.[16]

A useful discussion of episodic memories can be found in Sven Bernecker's recent book on the metaphysics of memory.[17] While the focus of this work is mostly on the nature of semantic memory, Bernecker does provide some insight regarding

---

[16] Baddeley, *Your Memory: a user's guide*, 20.

[17] Sven Bernecker, *Metaphysics of Memory*, (Springer, 2008), http://www.ebrary.com.

episodic memory (which he refers to as "personal memory"). Bernecker states that "the characteristics of personal memory are, first, that one can only remember what one previously experienced and, second, that it involves imagery. Furthermore, personal memory is memory by acquaintance and its objects are not facts or propositions but people, places, things, events and situations."[18] The distinction between the two operations of LTM seems clear but is worth getting a deeper explanation for.

One account of personal memory, usually adopted by philosophers, stems from a distinction between knowledge by acquaintance and knowledge by description. Here the idea is that episodic memory requires experience of the content in question, whereas propositional memory does not. That is, "personal memory is memory of," while "propositional memory is memory that."[19] Others have attempted to distinguish between the two operations in light of the presence or absence of images,[20] though many believe that both episodic and semantic memories can make use of images. Others still have suggested that a distinction can be made along grammatical lines, claiming that personal memories are of experiences, whereas propositional memories are not.[21] Unfortunately this approach is also problematic, claims Bernecker, since, obviously, personal memories can be remembered in propositional form.[22] What remains is a consensus that episodic memories and propositional memories are in fact unique operations of LTM. It is the former that I am concerned with.

---

[18] Bernecker, *Metaphysics of Memory*, 5.

[19] Bernecker, *Metaphysics of Memory*, 6-7.

[20] Don Locke, *Memory*, (London: Macmillan, 1971), 71-76, as cited in Bernecker, *Metaphysics of Memory*, 2008.

[21] Bernecker, *Metaphysics of Memory*, 6.

[22] Bernecker, *Metaphysics of Memory*, 6.

We now have a general idea of what episodic memories are. They are an operation of our LTM. They can consist of both vast amounts of information and can be rooted in events from the distant past. Furthermore, episodic memories specifically convey supposedly experienced *events* from *our* past. This means that we cannot have a veridical episodic memory of some event that was not experienced (although we can still have *seeming* episodic memories of such events). Let us now look at the accuracy of the content of episodic memories and how that content is produced.

1.5 Episodic Memory Accuracy

Episodic memories are not the only way we can obtain information about our past. Reports from our friends provide us with an abundant amount of information concerning embarrassing events from college. Photographs reveal to us that we sported an *in fact* not so stylish haircut in twelfth grade. When presented with these accounts of our past we rarely hesitate to believe their truth--and the same goes when we have an episodic memory. We find it easy to believe in the truth of our memories because we think of our memory as operating in much the same way as a photograph, with virtually flawless accuracy. When you see a picture of yourself wearing your underpants on the outside of your jeans you think "what was I thinking," not "maybe it never happened." This is because we believe that photographs are usually quite accurate. We often accept what our episodic memories report for much the same reason, because they reveal the truth. But should we place such stock in episodic memories, do they in fact indicate the truth with as much accuracy as photographs? In order to answer this question let us look at how, if at all, our memory is different from a camera.

1.5.1 Condensation

A camera does not spare any detail. It captures everything that is caught by the lens. Nothing is changed, only preserved. This is why a photograph "never lies." Imagine, though, that capturing each individual detail required a certain amount of energy. The more details preserved, the more energy expended. Our memories are sort of like cameras in this latter sense. They are able to preserve more detail, but at the expense of energy. In order to save energy our memory has developed a shortcut. Often it isn't necessary to preserve all of the details of an experience and so it would seem wasteful to use energy on preserving them. Thus, whether or not we deem something important has great bearing on whether we spend energy on preserving it. Considering something to be more important will make it more likely to be preserved, while considering it less important will make it less likely to be preserved, simply because the more attention you give something the more likely you will be able to remember it.[23] The memory process that prunes our memory content in order to preserve only the most central and important details is referred to by psychologists as *condensation.*[24] While condensation is useful for saving energy that would usually be unnecessarily spent, it also leads to some problems.

We are not always able to determine what information *will* be important to us *when* it is being considered for storage. Thus, occasionally our memory will cut content that would have been useful at a later time. For example, imagine that you walk into a

---

[23] Schacter, *The Seven Sins of Memory,* 44-5.

[24] Bernecker, *Metaphysics of Memory,* 148.

gas-station to pay for some gas. On your way into the gas station you hold the door open for a woman who is leaving. It turns out that the gas station was just robbed by that individual. You looked at the individual but you are unable to recall what she looked like. In this circumstance your memory didn't bother to preserve information because it was not deemed important at the moment it was being considered for storage.

Condensation allows us to save energy by filtering out "unnecessary" information that would have otherwise been preserved in episodic memory. Unfortunately, as the example above demonstrates, this occasionally results in memories that contain less information than desired. Aside from a normative[25] assessment of memories that have been condensed, it is important to notice the epistemic[26] implications of a memory procedure such as condensation. By pruning away content that is deemed unimportant, condensation provides us with memories of our past that are incomplete. The resulting mnemonic content we are presented with is different from the content of our original experience. This should lead us to recognize that memories affected by condensation do not always accurately represent a past event.

It might seem as though the simple removal of information shouldn't qualify as the sort of "change" that should worry those of us who wish to rely on our episodic memories. After all, the condensed memories still report the "truth," *albeit*, not all of it. I believe, however, that many would consider the loss of content to be worrisome. Recall the gas station example. A belief about the robber's appearance was not able to be formed because you could not remember how she looked. Imagine that you couldn't

---

[25] By normative I mean an assessment having to do with what would be right or wrong.

[26] By epistemic I mean having to do with justification or knowledge.

even remember passing someone on the way into the gas-station. Suppose that you are then later questioned by police officers. They suspect that the clerk falsely claimed she was robbed and took the cash herself and are looking for confirmation of her story. If you can't remember passing someone on the way into the gas-station, you will likely believe, and claim that, there was no one in the store (besides the clerk) before you entered. On the basis of lost memory content, you are clearly led to hold a false memory belief--one with possibly detrimental effects. Memories that have undergone condensation are incomplete and can lead to false belief formation. This seems like a reasonable cause for worry.

In addition to condensation, our memory utilizes at least two other editing processes, cognitive dynamics and schematic processing, which affect the content of our memories. It is of interest to us whether these other cognitive processes also lead to problematic memory content.

1.5.2 Cognitive Dynamics

In contrast with condensation, cognitive dynamics is not a process adopted to save on energy use. Rather, it is utilized simply to modify remembered content so that it is represented appropriately as a past event. That is, cognitive dynamics involves changing the remembered content's tense and verb usage.[27] For example, suppose that you see a baseball on the ground. The experience of the baseball is perceived by you as of occurring at that moment. Then, when you remember looking at the baseball, you

---

[27] David Kaplan, "Demonstratives," in J. Almog, H. Wettstein and J. Perry, eds. *Themes from Kaplan,* (New York: Oxford University Press, 1989), pp. 481– 563, as cited in Bernecker, *Metaphysics of Memory*, 147.

recall *how it looked* to you. Compare this to your experience of looking at the baseball. The baseball is presented as of having *looked* a certain way, but not as of *looking* a certain way. Your memory experience has a necessary quality of *pastness* .[28] To better understand what is meant by a quality of pastness think for a moment about what it is like to hear a drum beat. When you hear a drum beat it is clear to you that you are *hearing* a drum and not seeing one. You do not confuse hearing a drum with seeing a drum because it is a different sort of experience; the phenomenology of the two experiences is different, and this allows us to distinguish between them. The same is true for remembering. Thus, you do not think that you are currently looking at a ball when you remember how a ball looked to you--your experienced is of something that is past, and this is identified by you in virtue of the feeling of pastness that accompanies the memory.

Mohan Matthen argues that the quality of pastness that accompanies our memories is the product of a change in tense to our memory's content.[29] The influence of cognitive dynamics enables a change of tense to a memory's original content, and thus, is responsible for a memory's phenomenological quality of pastness. This quality of pastness then allows a memory to be distinguished from other cognitive phenomenon. Modifying the tense of experienced content would appear to be an essential component of all occurrent episodic memories--a memory is always accompanied by a quality of pastness. Yet this feeling cannot be established without changing the content of our original experiences. So it would seem that no episodic

---

[28] Mohan Matthen, "Is Memory Preservation," *Philosophical Studies* 148, no. 1, (2010), 11.

[29] Mohan Matthen, "Is Memory Preservation," *Philosophical Studies,* 11.

memory content is identical, at least in terms of tense, to the original content. But is this reason for concern?

A difference in tense between remembered and original content does not seem to provide us with good reason for calling into doubt our reliance on episodic memory. While it may be the case that the content differs along these lines; beliefs based on memories which vary from the original content in this way would likely be considered justified. The modification of remembered content likely has to be more invasive than mere substitution of tense in order for us to be bothered by the presence of mnemonic processes. Unfortunately, invasive modification is precisely what a third distorting effect--Schematic Processing--yields.

1.5.3 Schematic Processing

Occasionally our memory will try to accommodate our preconceptions by modifying remembered content. When the content of a memory is refurbished by a cognizer's existing schemas, the memory content undergoes what is called Schematic Processing.[30] Unlike cognitive dynamics, schematic processing is far more invasive. Cognitive dynamics results only in the change of a memory's tense, however, when content doesn't accord with the current schemas of a cognizer, schematic processing will often result in omitting the unusual content or even replacing it with entirely new content.[31] Consider the following example, you walk by a construction site and see a woman operating a heavy piece of machinery. Later you recall the scene, but instead of

---

[30] Bernecker, *Metaphysics of Memory,* 149.

[31] Bernecker, *Metaphysics of Memory,* 149.

remembering a woman operating the machinery, you remember a man. The original perceived content was changed to fit with your preconception that construction workers are usually male. However, despite the change in content, it still feels like a memory. While a memory that has undergone schematic processing may seem "correct" to the rememberer, some of the content may not correspond to the truth. It is possible that false content may be added to a memory in order to accommodate one's schemata, and thus lead them astray. Our pre-existing schemas thus provide a dangerous footing for faulty memory sensations. But schematic processing should not take all the heat for the presence of substantial false content in memory.

1.5.4 Source Misattribution

We may also experience memories with false content without any pressure from our schemata. These sorts of errors correspond to instances when individuals confuse the source of particular content and so are referred to as "source misattributions.[32]" Many of us have had the "pleasure" of experiencing a common sort of source misattribution--*deja vu*.[33] When we experience a *deja vu* we feel as though we are remembering the events that we are actually experiencing at that moment.[34] In this instance the content of our experience is confused for content that stems from our past and thus is consider to be a memory of a past experience. A *deja vu* accounts for one form of memory error when the content of a current experience is confused for content

---

[32] Schacter, *The Seven Sins of Memory,* 93.

[33] Schacter, *The Seven Sins of Memory,* 89.

[34] Schacter, *The Seven Sins of Memory,* 90.

of an old experience. Misattribution is not, however, limited to these sorts of source errors.

Often individuals will encounter some person or object in a certain context and then remember the person or object as in a different context. When this occurs the cognizer mistakes the source of some of the content from one memory for another memory. Daniel Schacter describes an instance of this that occurred during the investigation of the Oklahoma city bombing.[35] A mechanic was questioned by the police who were trying to obtain a description of the individual that rented the van used in the attack. He provided a description of the two men who rented the van which led the police to Timothy McVeigh and a Jon Doe 2. It would turn out that Jon Doe 2 was not involved in the rental of the van or the attack. The mechanic *had* seen Jon Doe 2 rent a van, but he did not do so with McVeigh. The mechanic had merged his memory of Jon Doe 2 with his memory of Timothy McVeigh, thus yielding a memory that was not entirely true.[36] According to psychologists this sort of misattribution occurs due to what is called, "unconscious transference."[37] Unconscious transference refers to a memory error involving the unconscious transfer of content from one memory to another, thus synthesizing a new memory. According to Daniel Schacter memory errors of this sort are common among individuals who attempt to recall details from previous experiences because of issues of "memory binding."[38] Memory binding allows individuals to link together the individual features of their past experience to make whole memories. It

---

[35] Schacter, *The Seven Sins of Memory,* 91.

[36] Schacter, *The Seven Sins of Memory,* 90.

[37] Schacter, *The Seven Sins of Memory,* 92.

[38] Schacter, *The Seven Sins of Memory,* 94.

enables us to "recall the correct conjunctions of people, attire, positions, and places."[39] It does not always work appropriately, though. Often it fails because proper attention wasn't given during the encoding process[40], and when it fails Misattribution can occur.

1.6 Summary

Memory is often thought of like a camera--a device that captures information and provides a virtually perfect copy for later viewing. Unfortunately this is not how our memory actually works. There are many cognitive processes that can distort the content of our memories.[41] In the best case scenario our memory content is modified only slightly so as to change its tense. In the worse cases our memories can deviate from the truth substantially. We are left having to rely on a process that we have reason to think is not completely accurate. This leaves us with an important question. Is is possible to--and if so, when can we--rely on our episodic memories?

What this question suggests is this: what we are looking for is a set of criterion that determine when an episodic memory based belief is justified. It will be helpful, then, to look in some detail at a representative theory of what it takes for a belief to be justified in general. Then, once a general account of justification has been established, we can use it as a model for an account of episodic memory justification. In the next chapter we will consider a Reliabilist account of justification held by William Alston. This account will serve as the basis for a view on what is required for an episodic memory

---

[39] Schacter, *The Seven Sins of Memory,* 94.

[40] Marcia Johnson and Carol Raye, "Cognitive and Brain Mechanisms of False Memories and Beliefs," in *Memory, Brain, and Belief*, ed. Daniel Schacter and Elaine Scarry, 35-86 (Harvard University Press: Massachusetts, 2000).

[41] Bernecker, *Metaphysics of Memory,* 147.

belief to be justified. Then, once an account of episodic memory justification has been developed it can be analyzed.

Chapter Two: Reliabilism and Episodic Memory

2.1 Infallibilism and Episodic Memories

If memory serves me right,[1] I had a cheeseburger at my mother's house last night. Is my belief justified? Perhaps my memory must be infallible to serve me right. This would require the memory on which my belief is based to eliminate any possibility that my belief is false. That is, in light of my episodic memory, my belief which is appropriately based on it must be true. Call this view the mnemonic infallibility position. Thus, according to the mnemonic infallibility position, as long as my memory of eating the cheeseburger at my mother's house guarantees that my belief is true, my belief will be justified. If, however, my memory fails to secure the truth of my cheeseburger belief, then this belief will not be justified by my memory.

There are good reasons for thinking that the mnemonic infallibility position account is wrong. The mnemonic infallibility position fails because, (i) it seems intuitively true that some of our episodic memories serve us right, and (ii) none of our episodic memory experiences are sufficient for guaranteeing the truth of particular beliefs about the world.[2] The first point is derived merely from our intuitions. You may not accept this intuition, but for those of us who *do* feel that some of our episodic memory experiences serve us right, we are left with two options. We can either deny the second point or deny that in order for memory to serve you right it must be infallible. In the previous chapter I

---

[1] For a memory to serve me right what I have in mind is roughly something like for it to be accurate enough to serve as a reasonable basis for a belief. I do not mean to suggest that a memory must be veridical to serve you right.

[2] There always exists the possibility that our episodic memory experience conveys relevant details for our beliefs which are in fact false. Some of the processes responsible for these errors were discussed in the first chapter.

examined the psychological information in support of the fact that the content of our memories can be distorted by several cognitive processes, and that it is possible for all of our memories to be inaccurate to some degree. I suspect that most of us are sufficiently convinced of the second point's truth on the basis of what was covered. This leaves only the possibility of denying the mnemonic infallibility position, and therefore, the view that for memory to serve us right our memory must provide an infallible basis for belief. So what should we require to be the case for our episodic memory to serve us right? That is, what sorts of episodic memory beliefs should we consider to be justified?

2.2 General Justification

Clearly, we shouldn't consider all of our episodic memory beliefs to be justified. Suppose I have an episodic memory of fighting a dragon on a spaceship. We would not want to say that I am justified in believing that I fought a dragon on a spaceship, we have several other well supported beliefs that undermine the truth of this belief (such as the belief that dragon's are fictional beasts). At the same time we would like to say that some of our episodic memory beliefs *are* justified, take for example my cheeseburger belief. What we need is an account of episodic memory justification which allows us to adjudicate between episodic memory beliefs in a way that obtains intuitive results. We want a theory of episodic memory justification that says our cheeseburger belief is justified and that our dragon fighting belief is not. But why do we want a theory of justification that says the former belief is justified and the latter belief is not? Externalists claim that we want to say that cheeseburger-like beliefs are justified and dragon-like

beliefs aren't justified because we want our beliefs to be probable,[3] and clearly the dragon belief isn't probable--while the cheeseburger belief is. We feel as though the cheeseburger belief should be justified because it is probably true, whereas the dragon fighting belief shouldn't be justified because it is probably false. There are different senses of what it means for a belief to be probable, and depending on which is adopted, the criteria for justification will be different. According to Probabilism, justification is connected to the objective probability of the truth of a belief.[4] Alternatively, Reliabilism claims that justification is determined by the process utilized in the formation of a belief.[5] The two accounts yield quite different views on the criteria that need to be met for justification.

2.3 Probabilism

If Externalism is motivated by the intuition that we want our beliefs to be probably true, then Probabilism is a theory about the sense in which our beliefs need to be probable in order to be justified. For something to be probable, roughly, it must be likely. Probable means something like "there is a good possibility that it is the case that such and such." To be probable, the odds must be fairly high. Odds greater than zero percent are sufficient for making something possible, but they don't appear to be good enough for it to be probable. On the other hand, plausibility seems to refer to percentages near fifty percent. Again, probability appears to be something stronger than this. Exactly how

---

[3] Pollock, *Contemporary Theories of Knowledge,* (Rowman & Littlefield: New York, 1999), 89.

[4] Pollock, *Contemporary Theories of Knowledge,* 91.

[5] Pollock, *Contemporary Theories of Knowledge,* 91-2.

likely something must be to be probable will differ for individuals and perhaps between cases. We have a general idea, though, of what it means to be probable.

There are roughly two types of probabilities: definite and indefinite probability.[6] Definite probabilities are probabilities that particular propositions are true or that particular states of affairs obtain.[7] For example, there is a certain probability that the ice in your freezer has melted. Definite probabilities tell us something about the likelihood that a particular proposition or state of affair obtains. In contrast, indefinite probabilities are probabilities about classes, or types.[8] Indefinite probabilities tell us something about the likelihood that some type of thing will have some property. For example, that a student is likely to have substantial debt after graduating. The probability being appealed to here doesn't concern the likelihood that a particular student will acquire debt, it concerns the likelihood that students in general will acquire debt. According to Probabilism the sort of probability that is brought to bear on justification is of the *definite* sort.

Beliefs are epistemic attitudes we take towards propositions. A belief is a mental state that leads us to behave as if the propositional content of that belief were true. A proposition is roughly a statement. It can be true or false. Thus, when you have a belief you think that some proposition is true. Beliefs are the sorts of things that definite probability can concern. The probability that your belief is true directly determines your epistemic status with regards to that belief. If your belief is probable, then your belief is justified. If your belief is not probable, then it is not justified. What makes your belief

---

[6] Pollock, *Contemporary Theories of Knowledge,* 93.

[7] Pollock, *Contemporary Theories of Knowledge,* 93.

[8] Pollock, *Contemporary Theories of Knowledge,* 93.

probable or not is the relation of your belief to the world, the likelihood of its truth based on the way the world is. Suppose that you have a ten sided die and you form the belief that it will land on eight. The likelihood that your belief will be true is one in ten. The likelihood that your belief will be true is one in ten because the die could just as easily land on any of the ten numbers. The probability of your belief's being true is determined by the way the world is. It is determined by the die and the chances that it lands on eight, not by your evidence about the way the world is. Clearly this belief isn't probable, thus it is not justified. Notice that the justification of your belief is determined by the probability of its truth, which, in turn, is determined by the way the world is, an appeal to objective probability such as this is a mark of Probabilism. Suppose, however, that unbeknownst to you someone wrote the number eight on all ten sides of the die. It is now impossible for your belief to be false. The probability of your belief being true has changed from having a one in ten chance of being true, to having a one in one chance of being true. It follows that your belief is now justified. Under the current view all that is important for justification is the objective probability of a belief's being true given the way the world is. If all that matters for justification is the probability of a belief's truth, then the other thoughts of the believer have no bearing on her epistemic status. This means that the reasons one has, or lacks, for her belief are irrelevant. Obviously your belief is not justified in the latter case. If we accept Probabilism, though, then it follows that your belief is justified. Probabilism doesn't seem to provide us with a correct view of how probability should be brought to bear on justification. Alternatively we could adopt Reliabilism.

2.4 Reliabilism

Reliabilism is, like Probabilism, an Externalist theory of justification, it is motivated by the idea that our beliefs should be probably true. In contrast with Probabilism, Reliabilism considers justification to be analyzable in terms of indefinite probabilities.[9] Indefinite probability concerns types or classes. Reliabilism is meant to be a theory of what is required for a belief to be justified. Our beliefs are specific propositions, though, so how is justification determined?

Every belief is produced by some cognitive process, we do not acquire our beliefs out of thin air. Our beliefs serve as the output of a belief forming mechanism which produces that belief on the basis of some input. According to Reliabilism, beliefs that are formed by reliable belief forming mechanisms are justified. The indefinite probability that a belief forming mechanism will produce true beliefs determines whether it is reliable. If the indefinite probability is high, then the mechanism is reliable, if it is low, then the mechanism is not reliable. When a belief forming mechanism yields a high percentage of true beliefs, then a belief that is produce by it is likely to be true. A belief is justified in virtue of the fact that it is formed by a cognitive process that has a high probability of producing true beliefs in the context it is operating in. Justification depends on the reliability of the belief forming process. This view assumes, then, that all of our beliefs are produced by cognitive processes. I believe that this is a fair assumption to make. But what we need is an account of the criteria that must be met for justification, and all that we have so far is a view stating that a belief is justified if and only if it is produced by a reliable belief forming process. If we are to establish what must be the

---

[9] Pollock, *Contemporary Theories of Knowledge,* 111.

case for a belief to be justified, we will need to know what must be required to meet the view's demands. This means that we need to know what is required for a belief forming mechanism to be reliable. In order to provide a detailed account of what is required for a belief forming mechanism to be reliable a view must answer two questions: (i) what sorts of cognitive processes serve as belief forming mechanisms, and (ii) what is required for a belief forming mechanism to be reliable? Different accounts of Reliabilism have varying ways of answering these two questions. Some will allow us to establish a more acceptable view than others. I believe that William Alston provides us with an account that allows us to answer these two questions in a way that enables us to obtain intuitive results.

2.5 William Alston and Justification

Cognitive processes use input in the formation of a belief. It is on the basis of this input that the belief forming mechanism that leads to a belief is realized. The input for a belief forming mechanism can be divided into two types: doxastic and non-doxastic. When a belief serves as the input for a belief forming mechanism, the cognitive process is referred to as belief dependent.[10] In contrast, when something like a memory, or perception, and so on, serves as the input for a belief forming mechanism the cognitive process is referred to as belief independent.[11] The input for a belief forming process serves as the grounds for the belief that is produced. Thus, Alston states that in virtue of some mental state serving as the input for a belief forming mechanism that produces a

---

[10] Pollock, *Contemporary Theories of Knowledge,* 112.

[11] Pollock, *Contemporary Theories of Knowledge,* 112.

belief, the content of that mental state serves as the grounds for that belief.[12] The grounds for a belief are what explains your having that belief. For example, suppose that you see a dog in front of you. Your seeing the dog causes you to hold the belief that there is a dog. Your perception of the dog served as input for the belief forming mechanism that produced your belief. Your perception explains why you believe there is a dog. It is not your entire perception that explains your belief, though, claims Alston. Rather, there is a certain subset of perceptual content within your entire perceptual experience that serves as the grounds for your belief. The subset of information that is utilized in the formation of your belief is the information that serves as the grounds for your belief. Suppose you see a dog in front of you on the grass to the left of a tree. You don't believe that there is a dog in virtue of your perception of the tree, nor on the basis of your perception of the grass. You make use of the perceptual content that has dog-ness in your belief formation. Thus, input for a belief forming process is defined by the mental-content that is made use of by the belief forming mechanism.

The Reliabilist account of justification states that a belief is justified so long as it is produced by a reliable belief forming mechanism. To establish what is required for justification we are required to explain what it is for a belief forming mechanism to be reliable. This requires a more detailed explanation of belief forming mechanisms. If we accept Alston's account, then a belief forming mechanism consists in a specific set of mental content along with a tendency to form some belief on the basis of that content.[13] This provides us with half of what we need for an adequate account of justification. Let

---

[12] William Alston, "An Internalist Externalism," *Synthese* 74, no. 3, (1988), 265.

[13] William Alston, "How to Think About Reliability," *Philosophical Topics 23,* (1995).

us now consider what Alston has in the way of an account of what is required for a belief forming process to be reliable.

2.5.1 Reliable Belief Forming Mechanisms

A belief forming process is reliable if, roughly, it has a high indefinite probability of producing true beliefs. This means that the reliability of a belief forming process depends on the probability that it will yield a true belief. A belief forming process has a high probability of producing true beliefs if and only if belief forming processes of a relevantly similar type often produce true beliefs. Suppose you hold some belief, P, and that P was produced by the belief forming process, T. If T is a belief forming process of some type C, and C type belief forming processes usually produce true beliefs, then T is a reliable belief forming process. If T is a reliable belief forming process, then P is justified. So whether your belief is justified depends on the type of belief forming process that your belief was produced by.

Imagine that you hear what sounds like a dog barking on the other side of a fence. Suppose that your hearing barking that seems to come from the other side of the fence causes you to form the belief that there is a dog on the other side of the fence. Your belief is justified if and only if the belief forming process that produces it is reliable. Your belief forming process is reliable if it belongs to a class of reliable belief forming processes. So what class of belief forming mechanism does it belong to, and are they reliable? Let us suppose that you heard the dog in the evening. Should we say that the probability of beliefs formed in the evening being true is relevant for your epistemic status? Clearly we shouldn't, but why? Alston states that the type of belief forming

process that a belief can be said to be the product of is determined by the input that is utilized in the formation of that belief.[14] This means that if your belief about a dog was not produced on the basis of any information about what time of day it was, then it is not a candidate feature for determining which class of belief forming processes your belief process belongs to. On the other hand, the sound of a dog barking *did* serve as input for your belief. So this content can be utilized for determining the belief forming process that needs to be reliable for your belief to be justified. Even so, it appears that there are other processes to which your belief could be said to belong. The content of your belief is auditory. This means that we could consider your dog belief to based on the same process as all those beliefs that are based on auditory information. If they are usually true, then your belief is justified. Your input also concerns barking. Thus, it seems that, alternatively, we could consider your belief to belong to the class of all barking based beliefs. Suppose that beliefs based on barking are usually false, but that beliefs based on auditory information are usually true. Depending on which sort of cognitive process produced your belief it will either succeed or fail to be justified. This is called the "generality problem." In order to determine the epistemic status of your belief we must be able to determine which belief forming process is being utilized in its formation. We may have been able to isolate processes like those concerning the evening, but we are still left with alternatives. We need a basis for determining which cognitive process is up for evaluation, otherwise we cannot provide an adequate epistemic evaluation of beliefs.

---

[14] William Alston, "How to Think About Reliability," (1995).

2.5.2 Maximum Specificity

A believer makes use of certain mental content in the formation of her beliefs. The content that is used by a believer in the formation of her belief provides the basis for determining which cognitive processes is being used. This allows us to immediately disqualify possible belief forming processes on the basis of what is considered by the believer in the formation of her belief. Thus, if my belief is formed on a thursday, only if I take this fact into account in the formation of my belief can it serve as a basis for determining the belief forming process that my belief is produced by. Appealing to utilized content enables us to filter out many alternative belief forming processes. However, we often are still left with competing ways in which we can view the belief forming process. According to Alston there is almost always only one cognitive process responsible for any given belief.[15] Although there may seem to be alternative types of processes that could be at work, in actuality there is only one that produces the belief. The one that is being used to produce the belief can be identified in virtue of the fact that it is maximally specific.[16] The sort of belief forming process that leads to the production of a belief is sufficiently general, claims Alston. It is vague enough to capture a significantly variable number of cases. However, it is also specific. Alston's description of a belief forming processes as both general and specific may seem confusing at first, but once the motivation for the account is discovered, the position becomes more clear.

Suppose that we want to know whether some belief, A, that is based on some content, Y, is justified or not. We look at the features of Y and think that some feature, H,

---

[15] William Alston, "How to Think About Reliability," 365.

[16] William Alston, "How to Think About Reliability," 362,

of Y is the only relevant feature. Call the belief forming process that forms beliefs on the basis of H an H-Process. Let us suppose that the indefinite probability that a belief produced by an H-Process will be true is *n*. Now suppose that Y also has some feature, J. Call the belief forming process that yields beliefs on the basis of H and J a JH-Process. Let us suppose that the indefinite probability that a belief based on a JH-Process will be true is *n*+1. According to Alston one of these two processes is maximally specific and the other isn't. The one that is maximally specific serves as the one the reliability of which matters for justification. A candidate process is maximally specific if and only if there is no process that is more general than it with an equal or higher indefinite probability to produce true beliefs. Of the two possible belief forming processes that the above 'A' belief could be analyzed in terms of, the JH-Process is more reliable. Thus, the belief should be considered to have been formed by the JH-Process. When provided with a choice between two types of processes, we should consider a belief to have been formed on the basis of the process that is maximally specific.

Alston wants the class of cognitive processes to which a belief forming mechanism belongs to be large enough that a proper probability can be established. If the class is so narrow that it contains only one or two members, then a proper sense of its probability to produce true beliefs cannot be obtained. This produces a limit on how specific a belief forming process can be. However, if the process is too vague, the probability will inevitably diminish to a unsatisfactory level. A belief forming process needs to be calibrated so that it is appropriately general yet specific. Alston claims that the specificity of a process is determined by the specific way that the belief is formed.

He writes: "The type of process the reliability of which is relevant to the epistemic assessment of the belief is the one defined by the function, which is in turn defined by a certain way of going from input features to output features."[17] The input of a belief is the content used by a believer in the formation of her belief and the output is her belief. The particular features of a belief are produced by a belief forming mechanism in virtue of particular features of the input. The relation between the particular features, and the features that it relates, serves as a guide for specifying the process that is being utilized.

Reconsider the dog belief. Had you imagined a barking sound, and not heard barking, you likely would not have believed there was a dog on the other side of the fence. Having *heard* something is an important feature here. You also likely would not have believed there was a dog if you heard a cat-like meow. This means that a dog-like bark is another important feature of the input for the cognitive process. We are able to eliminate processes if they do not utilize information that was heard or contain dog-like sounds. The class has been refined to at least requiring dog barks and auditory content. In this way the salient features of the input of a belief forming mechanism, along with the features of the belief itself, enable us to adjudicate between rival types of cognitive processes.

2.5.3 Justified Beliefs

Alston is a Reliabilist. He claims that a belief is justified if and only if it is based on a reliable belief forming process. What this means is required for a belief to be

---

[17] William Alston, "How to Think About Reliability," 363.

justified depends on the details of his view. We saw that a belief forming process is reliable if it is a type of process that has a high indefinite probability of producing true beliefs. It is the salient features of the content that a believer makes use of in forming her belief, and the salient features of the belief they cause, that determines which belief forming mechanism is being utilized and, in turn, determines which belief forming process's reliability is of importance for justification. This leads to the following account of justification: a belief is justified if and only if (i) the grounds for the belief serve to identify some belief forming process, 'A,' (ii) 'A' is a maximally specific belief forming process, and (iii) the belief forming process, 'A,' has a high indefinite probability of producing true beliefs. It should be noted that this account provides the basis for *prima facie* justification. This means that the criteria defined are adequate for justification absent any defeaters.[18] If a defeater for a belief is not removed, then meeting the above conditions will not be sufficient for justification. We now have a general account of justification that can provide us with what we need for developing an account of what is required for episodic memory justification.

2.6 Episodic Memory Justification

An episodic memory belief is a belief that you come to hold on the basis of some episodic memory. The episodic memory is the grounds for your belief. Your belief forming process is the mechanism that produces your belief on the basis of your episodic memory. Under the current view, your episodic memory belief is justified if and only if the mechanism that formed it is reliable. We saw that a belief forming mechanism

---

[18] Pollock, *Contemporary Theories of Knowledge,* 32.

is reliable if it has a high indefinite probability of producing true beliefs. Roughly, this is what must be met for an episodic memory belief to be justified. An adequate account of episodic memory justification will be able to tell us which episodic memory beliefs are justified and which are not on this basis, but it seems that the current understanding of episodic memory justification is too vague to serve this purpose. Stating that an episodic memory belief needs to be based on a reliable belief forming process doesn't provide us with criteria specific enough to determine which episodic memory beliefs are justified. Suppose I form the belief that I turned the lights off in the house on the basis of some episodic memory, E, of having done so. I then wonder whether my belief is justified. According to the account of episodic memory justification in its current form my belief will be justified if and only if it is based on a reliable belief forming process. This only tells what sort of process needs to be responsible for my episodic memory belief in order for it to be justified. It does not, however, provide me with any detailed account of the conditions under which an episodic memory belief is based on a process of the reliable sort. Thus, while I know which sort of process my belief must be based on to be justified, I am not able to specify which episodic memory beliefs are, or are not, based on processes of this sort. The position needs something in addition to what has been presented, viz., a clear account of when an episodic memory belief is based on a reliable process.

Recall that a belief forming process is identified by content that serves as input in the production of a belief. If a belief forming mechanism responsible for episodic memory belief production is to be identified, then some appeal to the content utilized in the formation of that belief must be made. That is, a belief forming mechanism is the

process that produces a belief in virtue of the mental content that is utilized by a believer in forming that belief. Let us suppose that an episodic memory experience serves as input for the belief forming process in the cases where individuals have an episodic memory belief. If this is so, then the belief forming process that is responsible for an episodic memory belief is simply that which produces an episodic memory belief on the basis of an episodic memory experience. So the cognitive process the reliability of which is necessary for an episodic memory belief to be justified is that which forms beliefs on the basis of episodic memory experiences. It seems reasonable to suppose that an episodic memory experience serves as a belief forming process defining feature. Episodic memory experiences are certainly utilized in the formation of episodic memory beliefs, and it would seem that we can identify a sufficiently maximal set of belief forming processes on this basis. However, it would seem that every belief that is based on an episodic memory is considered to be based on the same belief forming process on this account. Thus, if some belief, B, is an episodic memory belief, then B is based on the belief forming process that yields beliefs on the basis of episodic memory experiences, and there is no episodic memory belief, H, such that H is not based on this process. Part of the above concern has been alleviated. On the current view it is possible to identify the belief forming process that is responsible for producing beliefs like those about turning off lights. Such a process was able to be identified on the assumption that episodic memory experiences serve to identify a maximally specific process. However, if we assume that episodic memory experience is the only salient feature that can be identified in cases where a belief is based on an episodic memory, then it follows that all episodic memory beliefs are produced by the same belief forming

process. Perhaps this okay, it may turn out that a proper account of episodic memory beliefs is of this sort. But let us consider what this would entail for episodic memory beliefs before it is accepted. If the results obtained by the account are counterintuitive, then we may have reason for not accepting the view in its current form.

Reconsider my belief that I ate cheeseburgers at my mother's last night. Let us use the current account and see what epistemic status it attributes to my belief. This belief was based on the episodic memory of doing so. The generation of my belief is the result of some cognitive process. The input for that cognitive process was my episodic memory of having cheeseburger's at my mother's. For my belief to be justified it must have been formed by a reliable cognitive process. The process that produced my belief relied on an episodic memory experience. This process is reliable if it has a high indefinite probability of producing true beliefs. Whether or not it does is determined by how often beliefs based on episodic memories are true. Let us suppose that this number is quite high. It would follow that my episodic memory belief is based on a cognitive process with a high indefinite probability to produce true beliefs. This means that my belief is justified, and that seems right. Now consider the belief that I fought a dragon on a spaceship. Recall that this belief was also based on an episodic memory. Since it was based on an episodic memory, it is produced by the same cognitive process that produced my cheeseburger belief. But this means that my dragon belief is just as justified as my cheeseburger belief. It is intuitively obvious that my dragon belief should not be considered as justified as my cheeseburger belief. What we need, then, is a way to carve up the belief forming processes used in the formation of episodic memory beliefs, such that beliefs like my dragon belief can be considered to have a

different epistemic status than beliefs like my cheeseburger belief. Furthermore, the process that is identified to be in use during cheeseburger belief like cases should be reliable, thus enabling us to attribute a positive epistemic status in such cases. In contrast, we should be able to attribute an unreliable belief forming process to beliefs like my dragon belief. To do this we will need a principled way for distinguishing between belief forming processes that are at work in cases like these.

There is additional motivation for an account of episodic memory justification that allows us to attribute different belief forming processes to dragon-like and cheeseburger-like beliefs. Let us suppose that we were content with considering all episodic memory beliefs to be based on a single same belief forming process. That we were okay with considering dragon-like beliefs to have the same epistemic status as cheeseburger-like beliefs. This places the view in danger of providing us with episodic memory skepticism. Because error would then be too frequent to make the episodic memory belief forming process reliable. Thus, all episodic memory beliefs would not be justified.

To serve as an adequate account of episodic memory justification the position must provide us with the means to assess the epistemic status of episodic memory beliefs. To accomplish this the view must be able to determine whether an episodic memory belief is justified. Determining which belief forming process is utilized in the formation of an episodic memory belief is only part of what is needed to do this. To analyze the epistemic status of episodic memory beliefs the current position must also establish whether the episodic memory belief forming process is reliable or not.

On the current view an episodic memory belief is justified if and only if it is based on a reliable belief forming process. A reliable belief forming process is one which has a high indefinite probability of producing true beliefs. The indefinite probability of producing true beliefs for a belief forming process is determined by how often beliefs based on the process are true. A belief forming process that generates a belief on the basis of an episodic memory experience is responsible for producing all beliefs that are based on episodic memory experiences. This includes both cheeseburger-like beliefs and dragon-like beliefs. Although many of the cheeseburger like beliefs may be true, clearly many of the dragon-like beliefs are false. The belief forming process captures many true beliefs, but also many false beliefs. Thus, the belief forming process on which episodic memory beliefs are based does not have a high indefinite probability of producing true beliefs. It follows that any belief that is based on an episodic memory is unjustified. We seem to be led right back to the same skeptical conclusion that the Alstonian account was designed to avoid.

2.7 Summary

In this chapter it was shown that an infallibilist account of episodic memory justification will lead to skepticism. I claimed that a successful account of episodic memory justification could be generated from a Reliabilist account of justification. We modeled the account on a particular brand of Reliabilism adopted by William Alston. Alston claims that under his view, justification depends on the reliability of a belief forming process. A belief forming process is reliable if and only if it has a high indefinite

probability of producing true beliefs. We then considered what this account entailed for episodic memory justification. It was discovered that in its current form, Alston's reliabilism entails counterintuitive results when applied to episodic memory beliefs. This does not mean that we should reject an Alstonian account of episodic memory justification, though. If we can establish a principled way to distinguish between episodic memory belief forming processes in such a way that obtains intuitive results, then we can accept the view. In the next chapter I will cover psychological data on differences between true and false memories that I believe can provide the Alstonian account with what it needs to obtain intuitive results.

Chapter Three: Memories and Informational Content

3.1 A Psychological Solution

The Alstonian account of episodic memory justification requires a clear and principled account of the sort of belief forming process that is required for an episodic memory to be justified. In the last chapter it was proposed that we consider episodic memory beliefs to be based on a process that utilizes episodic memory experiences as input. It followed that all episodic memory beliefs are to be considered the product of the same belief forming mechanism, viz., one that utilizes episodic memory experiences. This led to two issues: (i) the view was unable to identify any epistemic difference between both highly probable and highly improbable episodic memory beliefs, and (ii) the only belief forming process on which an episodic memory belief can be seen to be based on is an unreliable one, and so no episodic memory belief can be justified. For the Alstonian account to be acceptable it must be able to identify a belief forming process that enables it to solve both of these problems. As it was seen, this could not be done if it is claimed that there is only one maximally specific belief forming process responsible for every episodic memory belief, but perhaps the account can be salvaged. In this chapter I will consider psychological data on the different qualitative characteristics of memories for perceived and imagined events obtained from studies on true and false memories. I will argue that these qualitative characteristics are appropriately utilized by believers, and so they may serve as additional features which contribute to identifying a belief forming process.

3.2 Experiments on Reality Monitoring

Before we examine the experimental results concerning the characteristics of memories for perceived and imagined events, a slight digression on the motivation for these studies will be valuable. Both our acts of perception and imagination are able to produce memories.[1] Our perception and imagination provide us with content that can be stored for later recall. It is claimed that a memory of what was perceived is different, in some way, from a memory of what was imagined.[2] Reality monitoring refers to the process of distinguishing between the two sorts of memories on the basis of such differences.[3] In order to understand the process better, several studies have been conducted in hopes of discovering the characteristics of our memories which enable us to distinguish between them by way of reality monitoring.[4] To study memories for perceived and imagined events, psychologists must first get participants to have both perceptually based and thought based memory experiences. Secondly, psychologists must gather information regarding the qualitative differences of those memories. Regarding the first point, a participant may *report* one memory as of a perceived event and the other memory as of an imagined event, but it is quite common for individuals to

---

[1] Marcia Johnson and Carol Raye, "Reality Monitoring," *Psychological Review* 88 no. 1 (1981): 67-85.

[2] Marcia Johnson, "Memory and Reality," *Trends in Cognitive Sciences* 2 (1998): 761.

[3] Marcia Johnson and Thomas Taylor, "Fact and Fantasy: the effects of internally generated events on the apparent frequency of externally generated events," *Memory and Cognition* 5, no. 1 (1977); and, Marcia Johnson and Carol Raye, "Fact and Fantasy: The Roles of Accuracy and Variability in Confusing Imaginations with Perceptual Experiences," *Journal of Experimental Psychology: Human Learning and Memory* 5, no. 3 (1979).

[4] In this accept the Reality Monitoring framework. However, one could, alternatively, adopt a Dual Process view of memory. It is beyond the scope of this paper to consider this alternative account of memory, but for a quick account of the position as well as further suggested reading see Karen Mitchell and Marcia Johnson's "Source Monitoring 15 Years Later: What Have we learned from fMRI About the Neural Mechanisms of Source Memory?" in *Psychological Bulletin* 135, no. 4 (2009).

misidentify the source of a memory's content.[5] So claims made by the participants regarding the source of their memory should not be considered authoritative. Yet experiments that are designed to examine the difference between memories must be able to determine which memories are *in fact* perceptually based and which are thought based. One way to achieve this is to present participants with special word lists that elicit memories for words that were perceived and other related (yet imagined) words that were not perceived. This method is referred to as the Deese-Roediger-McDermott (DRM) memory paradigm.[6] Some psychologists believe that the DRM paradigm limits us on what we can conclude regarding memory characteristics. The method only presents participants with words, and memories for these sorts of memories are quite different from memories for autobiographical events. This sort of thinking has led to a variation of the DRM paradigm that presents participants with pictures of events instead.[7] The idea is that the memories that are being monitored regarding pictures of realistic events will provide us with more accurate information regarding our own personal event memories. In addition to presenting participants with slides or word lists, psychologists have studied memories for perceived and imagined events by implanting or suggesting the latter sort of memories. Suggestion occurs when psychologists get participants to acquire a memory for an event that never occurred.[8] To accomplish this

---

[5] James Lampinen, Jeffrey Neuschatz and David Payne, "Memory Illusions and Consciousness: Examining the Phenomenology of True and False Memories," *Current Psychology: Developmental* 16, no. 3/4 (Fall 1997/Winter 1998) 184-8.

[6] David Gallo, *Associative Illusions of Memory: False Memory Research in DRM and Related Tasks,* (Psychology Press: New York, 2006) 23-6.

[7] Jonathan Schooler, Delia Gerhard and Elizabeth Loftus, "Qualities of the Unreal," *Journal of Experimental Psychology: Learning, Memory and Cognition* 12, no. 2 (1986).

[8] Johnson and Raye, "Cognitive and Brain Mechanisms of False Memories and Beliefs," 46.

successfully, information is gathered about a participant's past from other sources (such as family members) in order to confirm that the participant never encountered a particular event.[9] After psychologists determine what would amount to a falsehood concerning a participant's past, they use methods for leading the participant to acquire a memory for the fictitious event. Since the event never happened, a memory of it will be based on imagination and can be compared to memories for real events. While it is essential that psychologists be able to tell which memory experiences concern perceived events and which concern imagined events, distinguishing between the two is pointless unless information can be gathered about qualitative differences between the two processes.

Typically, information on memory characteristics is obtained from participants by either having them give verbal reports or by having them complete a Memory Characteristic Questionnaire (MCQ). Verbal reports involve getting participants to provide self reports on their memories.[10] Participants are encouraged to describe their memory in as much detail as possible when giving such reports. This information is then later analyzed by psychologists who use it to determine the characteristics of the reported memories. MCQs involve getting participants to rate their own memories in terms of the degree to which they contain certain characteristics.[11] Participants were originally asked to fill out MCQs that contained thirty-eight questions on the content of their memories. More recent versions are shorter, but the goal remains the same: have

---

[9] Lampinen, "Memory Illusions and Consciousness: Examining the Phenomenology of True and False Memories," 187.

[10] Lampinen, "Memory Illusions and Consciousness: Examining the Phenomenology of True and False Memories," 208-210.

[11] Gallo, *Associative Illusions of Memory: False Memory Research in DRM and Related Tasks,* 87.

the rememberer indicate which characteristics are present in their memory. Recently, researchers have developed less subjective methods for studying memories and turned to using fMRIs to gather data.[12] Although a fMRI cuts out some possibility of error, it comes with its own drawbacks. An fMRI is only able to tell us which areas of the brain are being utilized. But how a memory feels is something else entirely. There have been several studies on memories for perceived and imagined events using various forms of the above mentioned methods for acquiring data. Furthermore, the studies all seem to converge on the fact that there are general qualitative differences between memories for perceived and imagined events.

3.2.1 Perceptual Content

In the late seventies and early eighties Marcia Johnson and Carol Raye began running experiments to determine which characteristics of our memories were used in reality monitoring. One difference they found was that memories for perceived events generally contained a greater amount of perceptual detail than memories for imagined events.[13]

Perceptual information refers to a memory's sensory details. Colours, sounds, tastes, smells and tactile sensations are all perceptual details of a memory.[14] For

---

[12] Karen Mitchell, and Marcia Johnson, "Source Monitoring 15 Years Later: What Have we learned from fMRI About the Neural Mechanisms of Source Memory?," *Psychological Bulletin* 135, no. 4 (2009).

[13] Johnson, "Fact and Fantasy: the effects of internally generated events on the apparent frequency of externally generated events," (1977); and, Johnson and Raye, "Fact and Fantasy: The Roles of Accuracy and Variability in Confusing Imaginations with Perceptual Experiences," (1979); and Johnson and Raye, "Reality Monitoring," (1981).

[14] Johnson and Raye, "Reality Monitoring," (1981).

example, whether or not you remember a dog as blue, or brown or yellow concerns the perceptual information of your memory. Whether you remember that a strawberry tasted sweet or sour concerns perceptual information. How the keys of a piano felt as you played them and the sounds they produced when they were struck are perceptual details. The more details of this sort that a memory contains, the more perceptual information it has. It may be wondered whether a memory that contains information regarding a single colour has the same perceptual detail as a different memory that contains information regarding a single sound. I cannot say whether there is any reason to consider some perceptual details more relevant than others. Thus, for the moment I shall propose that we consider each perceptual detail on equal footing with another. Therefore, the more colour, tastes, smells, sounds, and tactile sensations that an episodic memory possesses, the more perceptual information it has. A single study on the qualities of memories is likely insufficient for basing a hypothesis concerning differences in perceptual detail between memories for perceived and imagined events. It would be hasty to draw serious conclusions solely on Johnson and Raye's 1977 study. However, many experiments on memory characteristics have since confirmed Johnson and Raye's results.

In 1988 Johnson and Raye conducted a follow up experiment that obtained results that were consistent with their earlier findings.[15] In the follow up study Johnson and Raye instructed seventy eight participants to remember different events and fantasies that they had experienced in their recent past. The participants were then asked to complete an MCQ. The MCQ required the participants to rate their memories

---

[15] Marcia Johnson and Carol Raye, "Phenomenal Characteristics of Memories for Perceived and Imagined Autobiographical Events," *Journal of Experimental Psychology: General* 117, no. 4, (1988).

on a wide range of characteristics. The participants responded by checking a number on a seven point scale in order to indicate how clear/distinct or vague the representation of certain characteristics was in each memory. The results of the memory characteristic questionnaires that each participant was asked to complete indicated that memories for perceived events contained relevantly more perceptual details than memories for imagined events.[16]

Similar results were obtained in a study in 1997 by Mather, Henkel, and Johnson.[17] In this study Johnson and colleagues presented word lists to subjects in line with the DRM paradigm. Subjects were asked to complete a MCQ on their memories for presented words and critical lures[18]. The MCQ ratings were found to indicate that memories for critical lures (memories based on the imagination) contained significantly less auditory detail than those memories that were based on perception.[19] Along with Keith Lyle, Johnson has also been involved in conducting more recent testing on false memory characteristics which further supports the findings of the above study.[20]

More recently, Daniel Schacter and Slotnick conducted a study on memories for perceived and imagined content. Subjects were presented with exemplar shapes, and

---

[16] Johnson and Raye, "Phenomenal Characteristics of Memories for Perceived and Imagined Autobiographical Events," (1988).

[17] Mara Mather, Linda Henkel and Marcia Johnson, "Evaluating Characteristics of False Memories: Remember/Know Judgments and Memory Characteristics Questionnaire Compared," *Memory & Cognition* 25, no. 6, (1997).

[18] Critical lures are effectively words that weren't on the originally presented list but that are related to the presented words in a certain way.

[19] Mather, Henkel and Johnson, "Evaluating Characteristics of False Memories: Remember/Know Judgments and Memory Characteristics Questionnaire Compared," (1997).

[20] Keith Lyle, and Marcia Johnson, "Importing Perceived Features Into False Memories," Memory 14, no. 2 (2006), p202.

later made memory decisions concerning presented shapes and similar non-presented shapes. Schacter and Slotnick then compared the brain activity of participants reporting memories of presented shapes to instances when they reported a memory for a non-presented shape. They discovered that memories for presented shapes coincided with higher levels of brain activity in the regions that are utilized in processing perceptual information than memories for non-presented shapes.[21]

Studies on memories for perceived and imagined events indicate that they tend to possess a different amount of perceptual information. Memories for perceived events usually contain a higher amount of perceptual information.[22] In contrast, memories for imagined events usually contain less perceptual information. Thus, the amount of perceptual information possessed by a memory may serve to indicate whether it reports a perceived or imagined event.

3.2.2 Contextual Content

Several studies have indicated that there are other differences in informational content between memories for perceived and imagined events. Many psychologists have found that memories for perceived events usually contain more contextual

---

[21] Scott Slotnick and Daniel Schacter, "A Sensory Signature that Distinguishes True from False Memories," *Nature Neuroscience* 7, no. 6 (2004).

[22] Iris Blandon-Gitlin, "Criteria-Based Content Analysis of True and Suggested Accounts of Events," Applied Cognitive Psychology 23, (2009) p913; and in Jason Hicks, "False Memories Lack Perceptual Detail: Evidence From Implicit Word-Stem Completion and Perceptual Identification Tests," Journal of Memory and Language 52, (2005).

information than memories for imagined events.[23] Participants generally reported a higher degree of contextual information in cases where they were attending a memory for a perceived event versus when they were remembering an imagined event.

The contextual information of a memory includes "where" and "when" details. That you left your keys by the fridge "in the kitchen" is a "where" detail. So is the fact that you left your keys "by the fridge." That the kitchen was "in your house" is a further "where" detail. The more information a memory has about an event's location the more "where" details it possesses. Consider the following memories with different degrees of "where" detail.

Where 1: I remember seeing a car accident.

Where 2: I remember seeing a car accident on the road.

Where 3: I remember seeing a car accident near the intersection of memorial drive and edmonton trail.

Where 4: I remember seeing a car accident in the left lane on eastbound memorial drive just west of edmonton trail.

---

[23] See Johnson and Raye, "Phenomenal Characteristics of Memories for Perceived and Imagined Autobiographical Events," (1988); and in Mather, Henkel and Johnson, "Evaluating Characteristics of False Memories: Remember/Know Judgments and Memory Characteristics Questionnaire Compared," (1997); and in Emily Stern and Caren Rotello, "Memory Characteristics of Recently Imagined Events and Real Events Experienced Previously," *The American Journal of Psychology* 113, no. 4, (2000); and in Jianjian Qin, "Adults' Memories of Childhood: True and False Reports," Journal of Experimental Psychology: Applied 14, no. 4, (2008).

The first memory includes less contextual detail than the second. The second memory contains less contextual detail than the third. And the third memory contains less contextual detail than the fourth. While it is important to note that there can be differences in the *amount* of locational detail had by a memory, information concerning location can differ in scope. This means that information concerning location can pertain to both the event which is being remembered and the objects within the memory itself. So, while I can remember the accident occurring in calgary, I may also be able to remember where the one car was relative to the other; or where a certain pedestrian was, and so on. Call the former type of locational information 'general location' information and the latter 'specific location' information. Both sorts of locational information contribute to a memory's contextual information and are important for determining the source of a memory's content. Yet information concerning location is not the only sort of contextual detail an episodic memory can have.

Episodic memories can also contain temporally relevant details regarding "when" events took place. When I remember taking out the trash *today*, my memory contains contextual information regarding when the trash was taken out. Just as we saw with locational details, a memory may contain more or less information regarding the temporal location of events. That is, it is not always the case that our memories are identified by a single temporal detail. For example, I may remember eating eggs yesterday before noon. In this example there are two temporal contextual details: "yesterday," and "before noon." Furthermore, the temporal details may also concern the order of events. That is, while I may remember having eggs *yesterday*, I may also remember getting a plate before I ate my eggs, and cooking my eggs before I got a

plate. Call the temporal details concerning when an event took place 'general temporal' details and the latter, which concerns the order of events, 'temporal sequence' details. Both 'general temporal' and 'temporal sequence' details contribute to the contextual information of a memory. So details concerning both the location and the time of events contribute to the overall contextual information of an episodic memory. Let us see what has been reported by studies on the contextual information of memories for perceived and imagined events.

In a study by Johnson and Raye,[24] participants were asked to complete an MCQ after performing memory exercises. The evaluations of their memories in cases where they remembered perceived and imagined events revealed that they contained a relevantly significant difference of contextual content. In cases where subjects remember a perceived event, they reported higher amounts of information concerning the setting, location, spatial relation of objects, time of year, time of day and so on. In contrast, instances when subjects experienced memories for imagined events contained less contextual information.

In a similar study conducted by Stern and Rotello,[25] participants were exposed to imagined and perceived events. Subjects were then later asked to complete an MCQ on their memories for the events. After participants completed the MCQ on each memory for the events. The participants were also instructed to describe their memories in a free recall format conducted after the MCQ. The data from the MCQ and the free recall format were then analyzed by the researchers. The reports by the subjects indicated

---

[24] Johnson and Raye, "Phenomenal Characteristics of Memories for Perceived and Imagined Autobiographical Events," (1988).

[25] Stern and Rotello, "Memory Characteristics of Recently Imagined Events and Real Events Experienced Previously," (2000).

that memories for imagined events generally contained less contextual detail than memories for perceived events. The above psychological studies on memory characteristics indicate that a memory for a perceived event generally contains more contextual information than a memory for an imagined event. Thus, we should consider higher levels of contextual content to be a characteristic indicative of memories for perceived events.

3.2.3 Affective Content

Memories usually contain more than just perceptual and contextual information. Often we can also remember how we *felt* about an event and what we considered to be its implications. This sort of information is called affective content. Suppose that you remember having a burial for your pet bird in the backyard of your house. This event may have caused you to understand how precious life was and gain an understanding for life and death. The event has personal significance for that reason. You may also remember having felt sad and lonely without your bird. Or you may remember being scared that you would never find another bird as lovely as the one you had to bury. The way you remember feeling, along with the personal significance of the event, contribute to the overall affective information possessed by your memory of the death of your pet bird. Affective information does *not,* however, include the personal significance of your *memory* of an event, nor how you feel when you remember it. A memory of some event may *now* cause you to feel a certain way or have personal significance for you, but this is different from the personal significance that you remember it having for you when it

occurred and how it felt then. It is only the latter that contributes to the affective information possessed by a memory.

In a study published by Mather, Henkel and Johnson, they reported a trend for memories of perceived events to contain more affective information than memories for imagined events.[26] Using a DRM paradigm, subjects were led to experience memories for both perceived and imagined words. The participants were then asked to complete a MCQ on both sorts of memories. The MCQ results indicated that the participants were aware of more feelings and reactions in cases when they recalled perceived events. Whereas when participants had a memory for a critical lure, the memory contained less affective information. Other studies that have been conducted on memories for perceived and imagined events have obtained similar results regarding affective content and memories. Stern and Rotello found that participants identified more affective information in their memories for perceived events than their memories for imagined events. Participants indicated a difference in affective content in both MCQ questionnaires and free recall descriptions concerning their memories.[27]

The findings seem to indicate that memories for perceived events have more affective content than memories for imagined events. On the basis of these studies, and further supporting findings,[28] many psychologists believe that memories for perceived events contain more affective information than memories for imagined events.

---

[26] Mather, Henkel and Johnson, "Evaluating Characteristics of False Memories: Remember/Know Judgments and Memory Characteristics Questionnaire Compared," (1997).

[27] Stern and Rotello, "Memory Characteristics of Recently Imagined Events and Real Events Experienced Previously," (2000).

[28] Jianjian Qin, "Adults' Memories of Childhood: True and False Reports," Journal of Experimental Psychology: Applied 14, no. 4, (2008), p 380; and in Cara Laney. "Emotional Content of True and False Memories," Memory 16, no. 5 (2008).

3.2.4 Cognitive Content

We have considered memory differences concerning three types of informational content so far. Psychological studies indicate that memories of perceived events generally contain more perceptual, contextual and affective information than its thought based counterpart. Experiments on memory qualities have revealed that in addition to these three there is a fourth difference between memories for perceived and imagined events. The difference concerns the amount of cognitive information that is possessed by a memory. Unlike perceptual, contextual and affective information, though, memories for perceived events have been found to contain *less* cognitive information than memories for imagined events.[29] But what counts as cognitive information?

A memory must first be stored before it can be recalled. When events are stored in the same way that they were experienced, the process is relatively simple. On the other hand, when the content being stored is modified from that which made up the initial experience, or when the content is entirely new, the storage process usually requires much more processing.[30] Often the cognitive processes that are involved in producing the stored content are encoded into the memory content itself, thus allowing us to identify those mental processes that contributed to making the memory when it is recalled.[31] The cognitive processes that are encoded into the memory itself are referred to as the memory's cognitive information. The cognitive processes that are typically

---

[29] Mather, Henkel and Johnson, "Evaluating Characteristics of False Memories: Remember/Know Judgments and Memory Characteristics Questionnaire Compared," (1997); Stern and Rotello, "Memory Characteristics of Recently Imagined Events and Real Events Experienced Previously," (2000).

[30] Stern and Rotello, "Memory Characteristics of Recently Imagined Events and Real Events Experienced Previously," (2000).

[31] Stern and Rotello, "Memory Characteristics of Recently Imagined Events and Real Events Experienced Previously," (2000).

encoded into a memory contribute to elaborating, organizing, retrieving and identifying information.[32] Roughly, the role or use of thought processes indicated in the memory of an event serve as content of this sort. If you envision or imagine how something was when you experienced it, then these are indications of such processes,[33] and so is information about reasoning, decision making processes and imagery processes.[34] For example, suppose you have a memory of visiting a farm. The more you have to work to currently envision how things were when you visited the farm, or the more you feel that things went they way they typically should, or the more you feel as though you did certain things for certain reasons, the more information about cognitive processes your memory contains. The idea is something like, the harder you have to work to bring the memory to mind, and the more you have to think about the events and how they unfolded, the more cognitive processes are being utilized in the formation of the memory. When a memory includes information pertaining to the use of a cognitive process at any one of these levels, the memory is said to contain cognitive information.[35] Memories that contain more cognitive information tend to be memories of imagined events. Thus, the presence of cognitive information may be helpful for identifying memories of imagined events.

---

[32] Stern and Rotello, "Memory Characteristics of Recently Imagined Events and Real Events Experienced Previously," (2000).

[33] Stern and Rotello, "Memory Characteristics of Recently Imagined Events and Real Events Experienced Previously," (2000).

[34] Marcia Johnson and Tracey Kahan, "Dreams and Reality Monitoring," *Journal of Experimental Psychology: General* 113, no. 3, (1984), 38.

[35] Johnson and Raye, "Reality Monitoring," (1981).

3.3 Characteristics of Memories for Perceived Events

If the evidence concerning the characteristic differences between memories for perceived and imagined events is right, then we seem to have a basis for discriminating between them. Memories of perceived events were shown to generally contain more perceptual, contextual and affective information, and less cognitive information. Memories of imagined events tend to contain less perceptual, contextual and affective information, and more cognitive information. Thus, a memory that contains more perceptual, contextual and affective informational content is more likely to be of a perceived event. In contrast, a memory with less perceptual, contextual and affective information and more cognitive information is more likely to be of an imagined event. Therefore, the content of a memory can serve as a reliable indication of whether it is of a perceived or imagined event. Differences in informational content tend to be quite prominent in recent memories, making distinguishing between the source of content more accurate. But not all memories concern recent events. Do relevant differences in informational content obtain between old memories of perceived and imagined events as well?

3.4 Recent and Old Memories

The older a memory becomes the less content it tends to possess.[36] When an older memory loses content, it usually results in a reduction in the informational content that is used to discriminate between more recent memories.[37] This reduction in relevant

---

[36] Stern and Rotello, "Memory Characteristics of Recently Imagined Events and Real Events Experienced Previously," (2000).

[37] Johnson and Raye, "Phenomenal Characteristics of Memories for Perceived and Imagined Autobiographical Events," (1988).

informational content will likely make it more difficult to differentiate between older memories of perceived events and memories for imagined events. But this does not mean that we are unable to discriminate between them at all. Although older memories tend to have *less* informational content, they still contain a higher amount of perceptual, contextual, and affective information, and a lower amount of cognitive information.[38] Therefore, while it may be a less reliable indication, the informational content of older memories can still serve as a basis for distinguishing between those which are based on perception and those which are based on thought.

Rotello and Stern's survey of old and recent memories for imagined and perceived events indicate that the memories for perceived and imagined events don't lose content at the same rate.[39] Memories for imagined events lose more content over the same period of time than memories for perceived events. However, it appears that memories for perceived events are more resilient to losing certain types of informational content. Memories for perceived events seem to lose contextual and affective information at about the same rate that memories for imagined events do. But the perceptual content of a memory for a perceived event seems to be much more robust. The end result is that over time a memory of a perceived event loses much less perceptual content than a memory of an imagined event. This means that a difference in perceptual content between memories for imagined and perceptual events becomes even more pronounced as time goes on. Only perceptual content is resilient in this way, though. Thus, as time goes on the contextual and affective content of a memory for a

---

[38] Johnson and Raye, "Phenomenal Characteristics of Memories for Perceived and Imagined Autobiographical Events," (1988).

[39] Stern and Rotello, "Memory Characteristics of Recently Imagined Events and Real Events Experienced Previously," (2000).

perceived event may drop to ranges indicative of episodic memories for imagined events. This may lead some to believe that older memories of perceived events are qualitatively identical to recent memories of imagined events--but this is not correct. While older memories may not be *as* distinguishable on the basis of contextual and affective information, the perceptual content is still typically higher than in older memories for imagined events.[40] Thus, older memories for perceived events are still distinguishable on the basis of their perceptual detail since it still serves as a reliable basis for discrimination.

3.5 Younger and Older Rememberers

The evidence would seem to suggest that whether a memory of a perceived event is old or new, it should contain more perceptual, contextual and affective information, and less cognitive information. This is not always the case. Psychologists have discovered that as we age our memory begins to store less perceptual information in relation to memories that were stored when we were younger.[41] Naturally, this means that memories which concern perceived events from our later years, will not contain the same proportion of perceptual information as did our earlier memories for perceived events. Older memories will tend to have a lower amount of perceptual information. This means that while we might consider some level of perceptual information to be indicative of memories for perceived events in our earlier life, we should not necessarily hold older memories (memories formed in the more distant past) to the same standards.

---

[40] Stern and Rotello, "Memory Characteristics of Recently Imagined Events and Real Events Experienced Previously," (2000).

[41] Mark McDaniel and Keith Lyle, "Age-Related Deficits in Reality Monitoring of Action Memories," *Psychology and Aging* 23, no. 3, (2008), 653-4.

Lower levels of perceptual information should not, however, cause us to consider an older memory that otherwise exhibits characteristics of a memory for a perceived event as fictitious. It simply means we should expect less from it.

What we consider to be characteristic informational content arrays of memories for perceived events is not set in stone. In the previous section we saw that older memories tend to contain distinguishing informational content to a lesser degree. In this section it was shown that depending on the age of an individual when a memory for an event is produced, it may contain more or less perceptual content. Thus, the standard of informational content possessed by memories that we should consider indicative of perceived events should ebb and flow with the age of the rememberer and the memory itself.

3.6 Vivid False Memories

Occasionally memories for imagined events can contain informational content indicative of memories for perceived events. This often occurs when individuals are victims of *suggestion*.[42] Alternatively, vivid memories of imagined events may also sometimes be experienced by individuals due to misattribution. Often the most vivid memories that derive their content from imagination are those that simply misattribute information from one memory to another. In cases such as this, the borrowed information retains its informational detail and serves to contribute to the content of the new memory that it was added to. The information does not, however, serve to produce

---

[42] Elizabeth Loftus and Ketcham, K, *The Myth of Repressed Memory: False Memories and Allegations of Sexual Abuse,* (St Martins: New York, 1994), as cited in Lampinen, "Memory Illusions and Consciousness: Examining the Phenomenology of True and False Memories," 1998.

an accurate memory of a perceived event. This sort of error usually occurs because of binding issues.[43] When the particular details of an event are not properly bound to the rest of the information concerning an event during the encoding process, it can lead to attributing those details to other memories. The memory to which the content is added contains information that pertains to a different event and so is not accurate, yet it often still retains much informational detail. Our only hope of detecting instances of error in cases involving misattribution is on the basis of the cognitive information that such memories may contain. Memories that derive less of their information from perception tend to contain informational content suggestive of this fact. But this is not always the case. Thus, we should not consider the informational content of a memory to serve as an infallible indication of its source. Indeed, it is possible for memories for imagined events to contain levels of information characteristic of memories for perceived events. This is not, however, what is usually found.

3.7 Memories and Informational Content

Generally, content that is derived from perception contains higher levels of certain information than memories for imagined events.[44] The Reality Monitoring hypothesis states that information of this sort serves as an indication that it was derived from perception. That is, when the content of a memory contains higher levels of perceptual, contextual and affective information, and lower levels of cognitive

---

[43] Daniel Schacter, *The Seven Sins of Memory*, (Houghtin Mifflin: New York, 2001), 94.

[44] Iris Blandon-Gitlin, "Criteria-Based Content Analysis of True and Suggested Accounts of Events," Applied Cognitive Psychology 23, (2009), 901-917.

information, it is identified as a memory for a perceived event. It is in virtue of the sort of informational content that a memory has that it is identified as of a perceived or imagined event. It was also shown that memories for perceived events actually usually do have the sort of informational content which serves as a basis for identifying them as such. The reality monitoring framework is helpful, then, because it appears that content which leads us to think it stems from perception, usually does *in fact* stem from perception. What this means is that, if content appears to been perceived, then it likely has.

3.8 Summary

In this chapter we considered data on the differences in phenomenological characteristics between memories for perceived and imagined events. It was shown that memories for perceived events generally contain higher amounts of perceptual, contextual and affective information, and lower amounts of cognitive information relative to memories for imagined events. In contrast, memories for imagined events generally contain lower amounts of perceptual, contextual and affective information, and a higher amount of cognitive information. On the assumption that this sort of information is made use of in the formation of an episodic memory, it could be utilized by the Alstonian account of episodic memory justification as a basis for discriminating between episodic memory belief forming processes. Furthermore, the informational content may serve as a basis for identifying a reliable belief forming process. In the next chapter I will consider

whether the data on informational memory content can provide the Alstonian account with what it needs.

Chapter Four: Revised Episodic Memory Justification

4.1 Setting the Stage for a Proper View

In the first chapter we saw that the content of memories can be distorted by cognitive processes. Then in the second chapter we considered a general account of episodic memory justification. In the third chapter we considered psychological data on the qualitative differences between memories for perceived and imagined events. We are now in a position to see how this all comes together to form an acceptable account of episodic memory justification. An acceptable account of episodic memory justification must do two things: (i) it must provide a clear account of what is required for an episodic memory belief to be justified, and ii) it must epistemically adjudicate between episodic memory beliefs in a way that aligns with our intuitions. If an account of episodic memory justification is unable to meet either of these demands, then we ought to try and find a more appropriate view. If, however, an account that meets these demands can be established, then it should be accepted. Let us consider the first requirement.

4.2 Justified Episodic Memory Beliefs

A successful account of episodic memory justification must provide a clear account of what is required for an episodic memory belief to be justified. On the basis of an Alstonian account of justification we were able to obtain the following general account of episodic memory justification: an episodic memory belief is justified if and only if it is based on a reliable belief forming process. While this serves as a reasonable guide, it is still too vague to provide us with what we need to meet the demand for a

clear account of episodic memory justification. We need to know which episodic memory beliefs are based on reliable belief forming processes and which aren't. Without an account of what serves as a reliable episodic belief forming process we are unable to determine which episodic memory beliefs are justified. Thus, the view must provide a detailed description of the episodic memory belief forming processes that are reliable.

4.2.1 Reliable Episodic Memories

Episodic memories are memories concerning events we experienced in our past. The event information that is stored in an episodic memory and that is recalled by you is acquired through perception. However, as we saw in chapter one, the content of our memories can often be distorted by cognitive processes quite easily. When this happens, cognitive processes contribute to the new content of an episodic memory. The more distorted an episodic memory's content becomes, the more influence from cognitive processes. The less influence from cognitive processes, the less distorted the content will be. The more that the content of an episodic memory is distorted the less accurate it is. The loss of content, the changing of content, or the production of new content in an episodic memory causes it to be less accurate. The less accurate an episodic memory is, the less likely a belief based on it will be true. Thus, the more perceptual content an episodic memory contains, the more likely beliefs that are based on it will be true. It follows that belief forming processes that produce beliefs on the basis of episodic memories with more perceptually based content are more reliable, and

vice versa. Recall that a belief forming process is a mechanism that produces a belief on the basis of content that is used by the believer in the formation of that belief. That an episodic memory has perceptually based content doesn't seem to be a feature *utilized* by a believer in the formation of her belief. This is an external fact about the memory, and so can't count as contributing content. Thus we cannot simply identify a reliable episodic belief forming process as one that produces beliefs in virtue of memories with perceptually based content. However, if there is a feature that supervenes on episodic memories with mostly perceptually based content which *is* used in the formation of a belief can be identified, then it will be possible to identify a reliable episodic belief forming process.

4.2.2 Informational Content and Reality Monitoring

Episodic memories for perceived events provide a reliable basis for a belief. Thus, if a belief is based on an episodic memory for a perceived event, then it will likely be true (assuming the reasoning process from the memory content to the belief was sound). It follows that a belief forming process that produces beliefs on the basis of episodic memories for perceived events will be reliable. However, a belief forming process can only be established between a belief and utilized content. We need to be able to identify a set of content that (i) is specific to episodic memories for perceived events, and (ii) is also utilized in the formation of episodic memory beliefs. The psychological data on memories for perceived and imagined events provides the Alstonian account with several mnemonic qualities that could be used to distinguish

between reliable and unreliable episodic memories. The studies suggest that there are at least four qualities which are inversely expressed by the two types of memories:

i) Perceptual Content: more in memories for perceived events and less in memories for imagined events.

ii) Contextual Content: more in memories for perceived events and less in memories for imagined events.

iii) Affective Content: more in memories for perceived events and less in memories for imagined events.

iv) Cognitive Content: less in memories for perceived events and less in memories for imagined events.

Call the informational content that is indicative of memories for perceived events PAC-Content. PAC-Content is often found in memories for perceived events. This means that episodic memories for perceived events can be reliably identified on the basis of PAC-Content. PAC-Content provides us with the sort of content that is needed to satisfy the first condition stated above. However, if PAC-Content is to be adequate for our purposes it must also be utilized in the formation of episodic memory beliefs.

In the last chapter we identified a process used to distinguish between memories for perceived events and memories for imagined events, it was referred to as reality

monitoring.[1] An episodic memory can be of either a past experienced event, or of a past imagined event. In either case you are simply remembering what you did. Reality monitoring is responsible for the portrayal of past events as either experienced or imagined.[2] It identifies the content of our memories so that it is portrayed in the appropriate manner. Memory content is identified as perceived or imagined by the reality monitoring process on the basis of what sort of informational content it consists in. The same informational content that is used by the reality monitoring process to make this identification is the same sort of informational content that is either indicative of memories for perceived or imagined events. This means that the PAC-Content of an episodic memory is utilized in its formation. Since PAC-Content is utilized in the formation of an episodic memory with such content, it can serve as a contributing feature in the belief forming process. Had the episodic memory not had such content, then the episodic memory would likely have been deemed to concern imagined events. No doubt a belief concerning past actual experience will probably not be formed on the basis of an episodic memory of imagined events. So it seems as though PAC-Content serves as a relevant contributing feature in the formation of episodic memory beliefs.

4.2.3 Episodic Memory Justification

We are now able to provide a clear account of what is required for an episodic memory belief to be justified. It was stated that an episodic memory belief was justified if and only if it was based on a reliable belief forming process. This was not detailed

---

[1] Marcia Johnson and Carol Raye, "Cognitive Operations and Decision Bias In Reality Monitoring," *American Journal of Psychology* 94, no. 1, (1981), 37.

[2] Mitchell, Karen and Marcia Johnson. "Source Monitoring 15 Years Later: What Have we learned from fMRI About the Neural Mechanisms of Source Memory?" *Psychological Bulletin* 135, no. 4 (2009).

enough for our purposes. We needed a clear account of which belief forming processes that form episodic memory beliefs were reliable. When a memory of an event contains a significant amount of perceptual, contextual and affective information, and a small amount of cognitive information, it is likely to have been based on the perception of that event. Our episodic memories concern memories of events that we perceived. So the content of episodic memories that have not been as modified by our cognitive processes should contain more content obtained from perception. Episodic memories always undergo some degree of content modification, they must at least appear in past tense. So we should suspect there to be some content in an episodic memory to have been derived from thought. If, however, most of the episodic memory's other content is left unchanged, then it should still contain a significant amount of perceptually based content. Episodic memories for perceived events are more likely to produce a true belief if they contain less cognitive and more perceptual content. Thus, a cognitive process that generates episodic memory beliefs on the basis of episodic memories with a higher level of perceptually derived content is reliable. Episodic memories with a higher level of perceptually based content tend to contain an array of informational content that I referred to as PAC-Content. It has been shown that PAC-Content is utilized in the formation of episodic memories which contain it, and so serves as a reasonable feature on which to identify a belief forming process under such circumstances. This all leads to the following revised account of episodic memory justification: a belief based on an episodic memory is justified if and only if the episodic memory contains PAC-Content.

The belief forming process that produces episodic memory beliefs on the basis of episodic memories with PAC-Content likely produces a high number of true beliefs. This

is because episodic memories with PAC-Content are likely to be accurate. Since this belief forming process has a high indefinite probability of producing true beliefs, episodic memories that are produced by it will be justified. Thus, episodic memory beliefs that are based on a belief forming process that yields beliefs on the basis of episodic memories with PAC-Content are justified and memory beliefs not based in such content are not.

4.3 Evaluating Standard Episodic Memory Beliefs

A clear account of which sort of episodic memory beliefs are justified has now been established. Roughly, an episodic memory belief is justified if and only if it is based on an episodic memory with informational content indicative of memories for perceived events (PAC-Content). Providing an account of which episodic memory beliefs are justified is one thing. Providing an account of which episodic memory beliefs are justified that obtains intuitive results is another. Let us see if it can obtain a proper epistemic evaluation in some standard cases.

David Case: David lives on the same block as Kendra. Both David and Kendra teach at the university and both drive to work. One day David is sitting in his office at the university when Kendra calls him up on the phone. Kendra informs David that she is running late and needs to get to school as quickly as possible. She asks David if there were any accidents on the route that they typically take to the university. David thinks for a moment. He has a memory of his journey to school this morning. He does indeed seem to remember encountering an accident on his drive that morning. He remembers

that a black car had hit a bicyclist on a yellow mountain bike, and that an ambulance and a fire-truck were there. David remembers that the accident was near the Edmonton Trail bridge that crosses the bow river. He remembers seeing the fire-trucks parked by the coffee shop and the gas-station on the north-east corner of the intersection between Edmonton Trail and Memorial Drive. He remembers reaching down to make sure that he remembered the spaghetti left-overs that he brought for lunch just before he noticed the accident. He remembers that he had just passed the last turn off before the Edmonton Trail intersection when he began to see congestion from the accident. David also remembers thinking to himself that he had better not get his coffee at this coffee shop since there was so much commotion, that there were other coffee shops on the way to school besides the one on Edmonton Trail and Memorial Drive. David remembers getting his coffee at the next coffee shop along the route to the university, from the coffee shop on Memorial Drive and Tenth Street. On the basis of this memory David forms the belief that there was an accident at the intersection of Edmonton Trail and Memorial Drive.

It seems clear that David's belief is justified. But does the revised Alstonian account obtain this verdict? David's episodic memory contains many perceptual, contextual and affective details. The Alstonian account states that an episodic memory belief is justified if and only if it is based on an episodic memory with informational content indicative of memories for perceived events. The informational content of David's memory is rich in perceptual, contextual and affective informational content. Informational content of this sort is indicative of memories for perceived events. It

follows that David's memory meets the demands for justification set by the Alstonian view. Thus, the position would consider David's view to be quite justified. Let us now consider a second case.

Shaun Case: Shaun lives on the same block as Kelly. Both Shaun and Kelly teach at the university and both drive to work. One day Shaun is sitting in his office at the university when Kelly calls him up on the phone. Kelly informs Shaun that she is running late and needs to get to school as quickly as possible. She asks Shaun if there were any accidents on the route that they typically take to the university. Shaun thinks for a moment. He seems to remember encountering an accident on the way to work this morning. He try's hard to remember where it was for a minute but finds it difficult, he was quite distracted by an interesting program on the radio that morning. Eventually he is able recall having noticed an ambulance while passing what seems to be the Edmonton Trail bridge. Shaun can't remember what sorts of vehicles were involved in the accident, nor how many had been hit. He also can't clearly remember the scene of the accident. He simply has a memory of having seen an accident while passing the bridge at Edmonton Trail. On the basis of this memory Shaun forms the belief that there was an accident at the intersection of Edmonton Trail and Memorial Drive.

Now, it might seem obvious just from the description of the examples that David is justified while Shaun isn't. But the important point is that what the psychological literature tells us is that the differences between Shaun and David are commonplace differences between accurate memory experiences and fabricated ones. Shaun's belief

contains very little informational content. He does indeed seem to remember having seen an ambulance, and he also recalls having seen the ambulance near the edmonton trail bridge on memorial drive. However, his memory lacks a significant amount of informational content overall. Episodic memories which lack informational content are far less likely to serve as accurate memories for past events, they provide the basis of an unreliable belief forming process. For this reason the Alstonian view would consider Shaun's episodic memory, which lacks PAC-Content, to provide an inadequate basis for his belief. Thus, Shaun's belief is not justified. In contrast, David's episodic memory, which contains ample PAC-Content, is able to satisfy the view's requirements and so provides a basis for justified belief.

Recall the belief that I had a cheeseburger at my mother's house last night. This belief was based on an episodic memory experience. The intuition that this belief ought to be justified is motivated by the belief that it is quite probable. That is to say, we feel it should be justified because my memory of this sort is likely accurate. The psychological data in the last chapter suggests that memories for perceived events will generally contain informational content indicative of the fact that the content was obtained through perception--that is to say they generally contain PAC-Content. The Alstonian account of episodic memory justification states that an episodic memory belief is justified if and only if it is based on an episodic memory with informational content indicative of memories for perceived events. This means that beliefs like my cheeseburger belief will usually be considered justified on the basis of the Alstonian view. Episodic memory beliefs that we intuitively feel are justified are those beliefs that are based on clear memories that likely report actual events. Memories that report actual events are

memories that likely contain high amounts of perceptual content. Contrast these sorts of beliefs with those like my dragon fighting belief. This belief was based on an episodic memory of fighting a dragon on a spaceship. Intuitively it seems that this belief should not be considered justified. We feel this way because it is very unlikely that I fought a dragon on a spaceship. These sorts of beliefs are also unlikely to be memories for perceived events. This means that it is unlikely that they will contain PAC-Content. If, however, such a memory does contain such content, then the view will consider it to serve as a reasonable basis for justification. But false memories of this sort are not common. If our intuitions are right, then the content that such dragon-like memories contain will be mostly derived from thought, if not all of it. Memories with content mostly derived from thought tend not to contain informational content indicative of memories for perceived events. Thus, the current account of justification will likely conclude that dragon-like beliefs are unjustified--and this seems right. Our intuitions regarding the epistemic status of cheeseburger-like and dragon-like beliefs is motivated by the thought that some memories have a high probability of being the product of what you perceived while others have a high probably of not being based on what you perceived. Those episodic memories that are more likely to be based on perceived events are also more likely to contain the features necessary for justification. Those episodic memories that are less likely to be based on imagined events are more likely not to contain the features necessary for justification. It would seem as though the Alstonian account of episodic memory justification is able to align with our intuitions in standard cases where individuals have episodic memory beliefs. But the view must obtain results that align with our intuitions on another matter.

4.4 Evaluations of Mentally Identical Believers

The Asltonian view is effectively externalist, and externalist views are generally rejected on the basis of how they handle particular problematic cases. Many people feel as though two individuals who are internally identical should not have different epistemic statuses. Yet it is thought that a case can always be developed such that a given externalist position must conclude that two internally identical individuals are epistemically different. Indeed, the revised Alstonian account is no exception to this rule. However, I believe that the position only deviates from internalist conclusions under circumstances that we would consider appropriate.

The problematic cases are designed to show that an externalist position must conclude that two individuals that are internally identical do not share the same epistemic status. So to show that the revised Alstonian account obtains this result a case must be developed such that two individuals are internally identical yet epistemically different. According to the current view, an episodic memory belief is justified if and only if that belief is based on an episodic memory that has informational content indicative of memories for perceived events. Call this the indicative information requirement. The informational content that meets the indicative information requirement is roughly an array of high perceptual, contextual and affective information and low cognitive information, that is, PAC-Content meets this requirement. Thus, an episodic memory belief is justified if and only if it is based on an episodic memory that possesses PAC-Content. With this in mind, what sort of case could be developed to establish a concern with the current view?

In the case to be developed the two cognizers must be internally identical for it to have force. Otherwise a difference in justification can simply be chalked up to a difference in mental states, and this is not worrisome. If, however, two individuals are internally identical, then they must have the same mental states. This means that if they have episodic memories, their memories must contain the same informational content. Consider one of these agents. If the content of her episodic memory satisfies the revised Alstonian account's criteria for reliability, then her belief is justified. Recall that the two believers are internally identical. This means that the content of the justified agent's memory is identical to the other believer's memory content. Thus, it seems as though the view must conclude that the other cognizer's belief is equally justified. Supposing that the informational content of the first agent's memory is *not* adequate, the view will simply conclude that her belief is not justified; and the same will be claimed about the other individual. So no problematic difference in epistemic statuses is obtained. Since the criteria for reliability is rooted in the mental states of individuals, mentally identical would *seem* to imply epistemically identical--but does it? Identical mental states entails identical epistemic statuses for the view on the basis that the same informational content is required for episodic memory justification in both situations. The informational content that the view requires for justification is determined by which informational content is indicative of memories for perceived events. A difference in the sort of informational content that is indicative of memories for perceived events would seem to lead to a difference in what the position requires for justification. This could lead to differences in epistemic statuses between two mentally identical believers in cases where informational content indicative of memories for perceived events it not the same

for both agents and so allow for a problematic case to be developed. With this in mind consider the following two cases:

Case 1: Bobby exists in a world where PAC-Content is indicative of memories for perceived events. Bobby has an episodic memory, K, and reasonably bases her belief, E, on K. K contains PAC-Content.

Case 2: Robby exists in a world where low levels of perceptual, contextual and affective information and high levels of cognitive information are indicative of memories for perceived events. Call content of this sort U-Content. Robby has an episodic memory, K, and reasonably bases her belief, E, on K. K contains PAC-Content.

Both Bobby and Robby form the same belief on the same memory, and their memories contain the same PAC-Content. The current Alstonian view states that informational content that is *indicative* of memories for perceived events is required for episodic memory belief justification. Only Bobby actually has a memory with content *of this sort.* Although Robby has the same content as Bobby, an array of informational content is indicative of perceived events in virtue of its relation to memories for perceived events *in that world.* Since Robby is not in a world where the informational content of her episodic memory is of the sort that is indicative of memories for perceived events, her memory does not contain the appropriate informational content. Had her episodic memory contained U-Content, her belief would have been justified. As it stands her memory does not contain the right sort of content for her to be justified. The informational

content required for justification by the revised Alstonian view is determined by which informational content is indicative of memories for perceived events *in the world of the believer in question*. Thus, the view can be said to adopt a localized account of reliability, and therefore justification.

The account views justification as localized because the reliability of a belief forming process is determined by the informational content that serves as a *local* indication of memories for perceived events. Because of this, believers may exist in different worlds that may have different *local* informational content indicative of memories for perceived events. Thus, a believer in one world may not always share the same epistemic status as individuals in another world, even if they have identical mental states. Only if the local informational content that is indicative of memories for perceived events is the same for the two mentally identical believers as well will they then be equally justified.

I do not believe that this should cause us to abandon the current view. It seems quite appropriate to only consider informational content indicative of memories for perceived events for those individuals whose epistemic status is being determined by it to apply. Why should we expect different individuals with different psychological relations to meet the same psychological criteria as one another? Whether or not the informational content of an episodic memory is sufficient for that memory to be reliable needs to be connected to which informational content is salient with regards to memories for perceived events. It is not *necessary* that the array of informational content identified by the current view be indicative of memories for perceived events. It is quite possible that in a different world a different array of informational content could

serve this purpose. So I don't see any reason to suggest that individuals in different worlds must have equal epistemic statuses in light of having identical mental states.

I suspect that there are those who do not share my intuition regarding this case. Some may feel that if Bobby is justified in her belief on the basis of an episodic memory with PAC-content, then so should Robby. After all, if we were in Robby's state, then it would seem to us that we were justified. The main worry proposed by cases like this is that an externalist account allows for instances where we have exactly the same internal states as some other believer that is justified, yet we may not be justified. A closer look at what must be done to develop a case in which two internally identical believers are epistemically different will show that the results the current view obtains are not counterintuitive, and so should not be rejected on the basis of the results it obtains in the above case.

Counter examples of the above sort that are used to dislodge externalist accounts of justification are generally thought of as consisting of two steps. In the first part an agent is created such that she meets all of the current externalist theory's requirements for justification. Then, in the second part, an internally identical agent is developed that *doesn't* meet all of the externalist theory's requirements for justification. On this basis we are meant to conclude that the externalist account should be rejected. However, it is easy to oversee that such examples actually require a third part. Simply showing that two internally identical agents have different epistemic statuses is not, on its own, sufficient for developing a successful counter example. It must also be the case that we have a strong intuition that the two agents *shouldn't* have different epistemic statuses. Thus, in addition to developing two internally identical agents--one that meets

the requirements of the externalist view and one that *doesn't*--a successful counter example must also pump the necessary intuitions. Let us examine the Bobby/Robby example more closely with this in mind.

In order for Bobby to meet the requirements of the Alstonian account of episodic memory justification (i) she must base her belief on some episodic memory, M, (ii) the episodic memory, M, must contain content indicative of memories for perceived events, and (iii) she must not have any defeaters for her belief. Until now we have dropped the mention of defeaters. It was mentioned that the account provides us with the criteria for *prima facie* justification, but it has not been necessary to stress this point until now. In order to meet this third requirement Bobby must not have acquired evidence that serves to defeat her belief. This means that she must not have been in situations, or acquired information, in her past that would provide her with evidence for calling her belief into doubt. Assuming that these conditions are met, then Bobby satisfies the view's requirements for episodic memory belief justification, and so the first part of a counterexample will have been developed.

In the second part of the counter example an agent must be developed that is internally identical to the first agent that was created, viz., Bobby. Internally identical agents have the same mental states. This means that Robby, the second agent, must base the same belief on the same episodic memory. So it follows that Robby's memory must have the same informational content as Bobby's. Having the same internal mental states as Bobby also entails that Robby must not have any additional mental states above and beyond those had by Bobby, viz., defeaters. Thus, Robby is internally identical to Bobby if and only if she has the exact same mental states, this includes all

her memories, beliefs, desires, etc, and their content. Let us suppose that Robby is developed in a manner that meets this requirement. Developing a second agent that is internally identical to the first agent is necessary but not sufficient for what must be accomplished in the second part of a successful counterexample. To complete the second part not only must an internally identical agent be developed, but she must be created in such a way that the externalist theory in consideration must conclude that she is not justified.

In order for an agent not to be considered justified by a theory of justification she need only fail to meet one of the necessary requirements for justification accepted by that view. Robby must have an episodic memory experience, she is identical to Bobby and Bobby has an episodic memory experience. Since Robby has to be identical to Bobby, it also follows that Robby can't have any evidence that serves as a defeater for her belief. Thus, Robby does not fail to be justified in light of any defeater that she has. The only option left is for the informational content of Robby's episodic memory not to be indicative of memories for perceived events. Stating that the content of Robby's episodic memory is of this sort does not require any change in the mental states of Robby. It is simply a change in the sort of world in which Robby exists, it is a change in the relation of episodic memory content to perceptual processes. If the content of Robby's episodic memory belief is not indicative of memories for perceived events, then, indeed, the current view must conclude that her belief is not justified. Robby *is not* justified and Bobby *is* justified on the basis of the informational content that is indicative of memories for perceived events in the world in which they exist, and a change of this fact does not *necessitate* any change in the mental states of either agent. So the

second part of the counterexample can be accomplished without violating any restrictions. Thus, two internally identical agents can be developed such that one is considered justified, while the other isn't. However, as I mentioned there is a third stage to a successful counterexample.

The epistemic results that the Alstonian account obtains must be counterintuitive for the counterexample to force its rejection. If we consider either the epistemic status of Bobby or Robby to be counterintuitive, then the Alstonian account will have been provided with a reasonable counterexample. If, however, it can be shown that the results that the view obtains are intuitive, then the example will have failed. If the Alstonian account is to be rejected on the basis of acquiring counterintuitive results, it will likely be in virtue of the fact that it considers Robby not to be justified. Let us look closer at Robby and see whether there is reason for rejecting the view on the basis of our intuitions concerning its verdict on Robby's epistemic status.

Robby exists in a world where ~PAC-Content is indicative of memories for perceived events. Her psychological makeup is such that when memories concern events that were perceived they tend to have ~PAC-Content. ~PAC-Content is indicative of memories for perceived events in virtue of the fact that memories for perceived events tend to have it, not just for Robby, but for the other epistemic agents in Robby's world too. So ~PAC-Content is indicative of memories for perceived events for all the epistemic agents in Robby's world. If ~PAC-Content is indicative of memories for perceived events, then memories of what is perceived will have this sort of content most of the time. This must be the case for most of the epistemic agents in Robby's world. If it isn't, then ~PAC-Content isn't indicative of memories for perceived events in that world.

Notice that Robby's episodic memory doesn't have ~PAC-Content, it has PAC-Content, and PAC-Content is not indicative of memories for perceived events. Yet, Robby still bases her belief on an episodic memory with PAC-Content. It is essential that Robby does not have any defeaters, otherwise she is different than Bobby. This means that Robby must not have any evidence for the unreliability of her belief forming process. In order to not have any defeaters, Robby must not have memories of instances where a belief based on an episodic memory with PAC-Content turned out to be false. This must be the case for her not to have defeating evidence. What would be required for Robby not to have such memories?

It must be the case that Robby is capable of having memories, otherwise she wouldn't have her current episodic memory the reliability of which is in question. She must simply not care about the truth of her memories enough to store information of this regard. Whether her memories are true or false makes no difference to her, they simply produce beliefs and that is that. This is only one source of evidence that Robby has failed to acquire. She must also be out of touch with how all the other epistemic agents operate as well. The sort of memories that other agent's rely on in forming beliefs and the instances when their memories have been wrong will have never been of concern for Robby. Otherwise she would have a defeater. Recall that Robby must be internally identical to Bobby, and that Bobby must not have any defeaters. This means that Bobby has no memory or thought that serves this basis. It is easy to see how Bobby could not possess a defeater for her belief. In order for Robby to have the exact same state, though, it would have to be the case that Robby has been able to avoid acquiring a

defeater amidst a lifetime of being exposed to information that could serve this purpose. Either, Robby is terribly unlucky, or a completely isolated epistemic agent.

It seems clear that the conditions required to be met for an agent internally identical to Bobby to not be justified are so radical that it would be counterintuitive if we *were* to consider her justified. The intuitive response in such cases is the exact same one that the revised Alstonian account provides. The epistemic agent would have to be so removed from the world she exists in, and her relationship with it, that it seems quite reasonable to conclude that she is not justified in holding her belief. This provides us with a way to defend the Alstonian account against counter examples like that above since it seems that any sort of agent that is identical to Bobby and yet able to be not justified is being correctly judged as such.

Counter examples like this are also generally developed to show that the view does not allow us to tell whether we are in Bobby's situation or in Robby's situation. The idea is that if a revised Alstonian account of episodic memory justification is accepted and I have a belief based on some episodic memory with the content identified to be indicative of memories for perceived events, then how do I know I am justified and not just like Robby? Fortunately, the revised Alstonian account has an answer to this question: you know you aren't in a position like Robby's if you are a reasonable epistemic agent... if you participate in the world in which you exist on an epistemic level. So long as you don't ignore obviously relevant information that serves as a defeater for your belief, and you are a normal epistemic being then you will be justified when your episodic memory belief is based on the proper content. If you behave appropriately and consider your experiences on a reasonable level, then we could not ask for more.

4.5 Summary

It has been shown that a successful account of episodic memory justification can be developed on the basis of an Alstonian account of justification. Appealing to the data on differences in informational content between memories for perceived and imagined events allows for a revision to the initially problematic Alstonian account. Once revised, the Alstonian view is able to both provide a clear account of when an episodic memory belief is justified, and yield intuitive evaluations of standard and typically problematic cases. It would seem, then, that the current view provides us with a satisfactory basis for evaluating the epistemic status of episodic memory beliefs. Unless a problem with the current view can be identified I see no reason for not accepting it.

4.6 Thoughts and Future Directions of Research

Our episodic memory does not always provide us with an accurate account of our past. Because of this it can sometimes lead us astray. Because our episodic memory is fallible, the beliefs that we base on it are not always justified. Some episodic memories have a higher likelihood of leading us astray, while others do not. Beliefs based on memories of the former sort are not justified, while those based on the latter type of memories *are* justified. Episodic memories that are more likely to lead us astray are those which have undergone more extensive processing. The more processing the content of a memory undergoes, the more deviation from the truth the content is possible of acquiring. The less processing that an episodic memory undergoes, the less likely it is to deviate from the truth, and the more likely a belief based on it will be true.

Episodic memories which undergo more extensive processing tend to have informational content of a particular sort. This array of informational content is utilized in the formation of the episodic memory and serves as a component of the process that leads to the production of beliefs on the basis of the memory. Likewise, memories with less processing tend to have a different array of informational content. Again, the informational content contributes to the belief forming mechanism that yields beliefs on the basis of the less processed memories. The two different arrays of informational content found in more and less processed episodic memories serve to identify different belief forming mechanisms. It is in light of the reliability of these belief forming mechanisms that a belief based on an episodic memory is justified or not. Beliefs based on episodic memories that have been more heavily processed are often false, this means that the belief forming process that leads from processed episodic memories to beliefs is not reliable. According to the reliabilist account of justification that I accept, it follows that those beliefs which are based on heavily processed episodic memories are not justified. In contrast, those beliefs which are based on less processed episodic memories are usually true. This means that the belief forming process that leads from less processed episodic memories to beliefs *is* reliable. Thus, those beliefs which are based on less processed episodic memories are justified.

This account of episodic memory belief justification allows us to attribute justification to episodic memory beliefs. In addition, it is sensitive enough to deny justification in appropriate cases. That is, we are able to attribute justification to beliefs based on episodic memories rich in informational content, yet deny justification to those

beliefs which are based on episodic memories with vary little informational content. The position seems to be successful. There are, however, limits to the position.

The view is easily able to distinguish between justified and unjustified episodic memory beliefs in cases where the array of informational content is quite different. But differences between informational content are not always of this sort. Often there are cases when one episodic memory contains only a bit more informational content. The view may have difficulty adjudicating between the epistemic status of beliefs in such circumstances. Secondly, psychologists note that it is possible for individuals to experience episodic memories for false events which are in fact quite high in informational content. The reliabilist account of episodic memory justification defended in this paper considers an episodic memory belief to be justified solely on the basis of the reliability of the process that leads to its formation. Episodic memories with a high amount of informational content are reliable, and so despite leading to a false belief, should still be considered adequate grounds for justification. Is this a reason for concern? That depends on what I consider to be the third limit of this view.

The view being defended here is not infallibilist. Thus, the view accepts the fact that some false beliefs will slip by unnoticed. However, the number must not be too substantial. While the possibility of false beliefs is generally a concern for infallibilist views, the worry is substantially more pressing for the current view. The belief forming process that leads from episodic memories with higher levels of informational content to related beliefs must be reliable for the beliefs formed by such a process to be justified. For the process to be reliable it must not be responsible for too many false beliefs. A small number of false beliefs based on episodic memories with a high level of

informational content can be tolerated. However, if too many false beliefs are formed by episodic memories with a higher level of informational content, then the process that yields beliefs on the basis of episodic memories with a higher amount of informational content will not be reliable. This means that those beliefs based on such a process will not be justified. Thus, if too many false beliefs are realized on the basis of episodic memories with a higher level of informational content, then the current view is unable to attribute justification to episodic memory beliefs. So my view concludes that if our episodic memories often lead to false beliefs, then they are unable to provide our beliefs with epistemic support and so none of our memory based beliefs are justified. While this may not be the conclusion that we *wish* to hold regarding episodic memory based beliefs, it seems to be the appropriate response to take if it turns out that our memory based beliefs are the product of an unreliable process. It seems, though, that some of our memory based believes *are* justified. If this is so, then they cannot be based on an unreliable process.

I believe that there are two directions that an advocate of my view could go in order to accommodate this intuition. One involves gathering evidence concerning the scarcity of false beliefs based on episodic memories with a higher amount of informational content. This may or may not prove fruitful. The outcome will bear heavily on the facts that are uncovered. If the facts are not supportive, or one does not consider this enterprise worthy of attention, then there remains an alternative way to accommodate the intuition that some of our memory based beliefs are justified. It may be possible to make a further content related distinction between episodic memory belief forming processes such that there is a unique process which yields false beliefs

on the basis of episodic memories rich in informational content, and that this process is different from the process which yields true beliefs. Further work on the phenomenon utilized in the formation of episodic memory based beliefs will need to be conducted, but this does not rule out the possibility of a response of this sort.

5.0 Conclusion

The aim of this thesis was to provide an account of episodic memory justification that avoids skepticism. I have argued that by modifying the position presented by William Alston we are able to do this: we can establish what is required for a belief based on episodic memory to be justified.

Alston's view needs to be modified because otherwise skepticism would result. The reason for this is that as it stands Alston's theory is unable to distinguish amongst belief forming processes. If we are unable to distinguish amongst episodic memory belief forming processes, then every belief based on an episodic memory would be considered to be based on the same belief forming process. Grouping all episodic memory beliefs together in this way leads to the conclusion that the belief forming process responsible for all our episodic memory beliefs is unreliable. It follows that every episodic memory belief is unjustified. If Alston's view isn't modified, then we are led to episodic memory skepticism.

It was proposed that counterintuitive results are obtained because of a faulty account of the episodic memory belief forming process. An examination of psychological studies on memories for perceived and experienced events reveals that all episodic memories are not equal in terms of their informational content. Memories of perceived events were found to contain a different array of informational content than memories of imagined events. These findings were then used to identify different cognitive processes that can serve to generate an episodic memory belief. In addition, it was shown that a distinction in episodic memory belief forming processes allows the position to avoid episodic memory skepticism. The psychological data provided the Alstonian account of

episodic memory justification with a means for calibrating the view in an appropriate manner which enabled it to avoid the problems that faced the earlier version of the view. However, in virtue of being an externalist account the Alstonian position is expected to deal with problematic cases involving internally identical agents. The Bobby/Robby cases were developed to show that two individuals can be internally identical yet considered to have different epistemic statuses by the Alstonian account. An epistemic evaluation of this sort is typically thought to be counterintuitive and so is meant to serve as a basis for rejecting externalist views. Indeed, if the results obtained in the Bobby/ Robby case are clearly counterintuitive, then the Alstonian account would be in trouble. But this is not the case. A closer look at what would be required to produce a counterexample of this sort for the Alstonian view revealed that the individuals which the view considered to be unjustified should probably be considered so. Indeed, the Alstonian account attributes different epistemic statuses to internally identical agents, but the different evaluations are in alignment with our intuitions.

Thus, the psychological data on memories for perceived and imagined events allows us to modify Alston's view in order to produce an adequate account of episodic memory justification. The modified view enables us to avoid skepticism and attributes epistemic statuses to episodic memory beliefs in a way that aligns with our pre-philosophic intuitions.

Bibliography

Alston, William. "An Internalist Externalism," *Synthese* 74, no. 3 (1988).

Baddeley, Alan. *Essentials of Human Memory.* (Psychology Press: United Kingdom, 1999).

Baddeley, Alan. *Your Memory: a user's guide.* (Firefly: Ontario, 2004).

Bernecker, Sven. *Metaphysics of Memory.* (Springer: N/A, 2008).

Blandon-Gitlin, Iris, Kathy Pezdek, Dr Stephen Lindsay, and Lisa Hagen. "Criteria-Based Content Analysis of True and Suggested Accounts of Events," Applied Cognitive Psychology 23, 901-917 (2009).

"BrainyQuote." http://www.brainyquote.com/quotes/quotes/r/richardave161833.html (accessed July 29, 2010).

Conway, Martin. "*Sensory-Perceptual Episodic Memory and its Context: Autobiographical Memory.*" (2001).

Gallo, David. *Associative Illusions of Memory: False Memory Research in DRM and Related Tasks.* (Psychology Press: New York, 2006).

Hicks, Jason, Jeffrey Starns. "False Memories Lack Perceptual Detail: Evidence From Implicit Word-Stem Completion and Perceptual Identification Tests," Journal of Memory and Language 52, (2005).

Howes, Mary. *Human Memory: Structures and Images.* (California: Sage Publications, 2007).

Johnson, Marcia, and Carol Raye. "Cognitive and Brain Mechanisms of False Memories and Beliefs," in *Memory, Brain, and Belief*, ed. Daniel Schacter and Elaine Scarry, 35-86 (Harvard University Press: Massachusetts, 2000).

Johnson, Marcia, and Carol Raye. "Cognitive Operations and Decision Bias In Reality Monitoring," *American Journal of Psychology* 94, no. 1, (1981).

Johnson, Marcia, and Tracey Kahan. "Dreams and Reality Monitoring," *Journal of Experimental Psychology: General* 113, no. 3, (1984).

Johnson, Marcia, and Thomas Taylor. "Fact and Fantasy: the effects of internally generated events on the apparent frequency of externally generated events," *Memory and Cognition* 5, no. 1 (1977).

Johnson, Marcia, and Carol Raye. "Fact and Fantasy: The Roles of Accuracy and Variability in Confusing Imaginations with Perceptual Experiences," *Journal of Experimental Psychology: Human Learning and Memory* 5, no. 3 (1979).

Johnson, Marcia. "Memory and Reality," *Trends in Cognitive Sciences* 2 (1998): 399-406.

Johnson, Marcia and Carol Raye, "Phenomenal Characteristics of Memories for Perceived and Imagined Autobiographical Events," *Journal of Experimental Psychology: General* 117, no. 4, (1988).

Johnson, Marcia, and Carol Raye. "Reality Monitoring," *Psychological Review* 88 no. 1 (1981): 67-85.

Kaplan, David. "Demonstratives," in J. Almog, H. Wettstein and J. Perry, eds. *Themes from Kaplan,* (New York: Oxford University Press, 1989).

Lampinen, James, Jeffrey Neuschatz and David Payne, "Memory Illusions and Consciousness: Examining the Phenomenology of True and False Memories," *Current Psychology: Developmental* 16, no. 3/4 (Fall 1997/Winter 1998).

Laney, Cara, and Elizabeth Loftus. "Emotional Content of True and False Memories," Memory 16, no. 5 (2008).

Locke, Don. *Memory.* (London: Macmillan, 1971).

Loftus, Elizabeth, and Ketcham, K. *The Myth of Repressed Memory: False Memories and Allegations of Sexual Abuse.* (St Martins: New York, 1994).

Lyle, Keith, and Marcia Johnson, "Importing Perceived Features Into False Memories," Memory 14, no. 2 (2006).

Mather, Mara, Linda Henkel and Marcia Johnson. "Evaluating Characteristics of False Memories: Remember/Know Judgments and Memory Characteristics Questionnaire Compared," *Memory & Cognition* 25, no. 6, (1997).

Matthen, Mohan. "Is Memory Preservation." *Philosophical Studies* 148, no. 1, (2010).

McDaniel, Mark, and Keith Lyle. "Age-Related Deficits in Reality Monitoring of Action Memories," *Psychology and Aging* 23, no. 3, (2008).

Mitchell, Karen and Marcia Johnson. "Source Monitoring 15 Years Later: What Have we learned from fMRI About the Neural Mechanisms of Source Memory?" *Psychological Bulletin* 135, no. 4 (2009).

Pollock, *Contemporary Theories of Knowledge,* (Rowman &Littlefield: New York, 1999)

Qin, Jianjian, Christin Ogle, and Gail Goodman. "Adults' Memories of Childhood: True and False Reports," Journal of Experimental Psychology: Applied 14, no. 4, (2008).

Schacter, Daniel. *The Seven Sins of Memory.* (Houghtin Mifflin: New York, 2001)

Schooler, Jonathan, Delia Gerhard and Elizabeth Loftus. "Qualities of the Unreal," *Journal of Experimental Psychology: Learning, Memory and Cognition* 12, no. 2 (1986).

Stern, Emily, and Caren Rotello. "Memory Characteristics of Recently Imagined Events and Real Events Experienced Previously," *The American Journal of Psychology* 113, no. 4, (2000).

Tulving, Endel, and Martin Lepage. "Where In the Brain Is the Awareness of One's Past," in *Memory Brain and Belief*, ed. Daniel Schacter and Elaine Scarry, (Massachusetts: Harvard University Press, 2000).