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Date Oct 20, 2001
People can take different points of view when recalling prior events. On the one hand, they can adopt a field vantage point in which they mentally reinstate the memory as if reliving the experience through their own eyes. On the other hand, they can recall the memory as if they were an outside observer watching themselves in the remembered scene.

This thesis used two experiments — one with normal adults in a controlled laboratory setting and another with posttraumatic stress disorder (PTSD) patients - to examine whether the selection of a particular mental vantage point impacts the contents of one's memory for personal events. To create an episode for recall, participants performed several tasks and then were asked to recall this episode from either the field or the observer vantage point. Following recall, participants indicated how the specified vantage point affected their memory. Two coders analyzed participants' tape-recorded recollections using a scoring key containing a priori content categories on which the vantage point memories were predicted to differ.

Participants' recollections differed as a function of vantage point with field memories containing more information about how they felt - emotionally, physically, psychologically during the task and observer memories focusing more on their actions and appearance, and object locations.

The same analyses were used to assess the memories of a group of patients who met criteria of PTSD. Unlike the laboratory experiment wherein participants
were randomly assigned to one of the vantage point groups, here each PTSD patient was allowed to recollect their traumatic experience from the perspective they would naturally choose to use. The analysis of the trauma memories revealed differences in memory contents as a function of vantage point similar to those found in the laboratory experiment: field memories contained more statements about affective reactions, physical sensations, and psychological states during the trauma, while observer memories included more information about object locations and descriptions of the patients watching themselves in the scene. Additionally, observer memories in the PTSD sample included more information peripheral to the traumatic event. The discussion focuses on the implications of these results and prospects for future research.
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This dissertation is dedicated to Kathrine Simovich, my grandmother, with love.
CHAPTER 1: GENERAL INTRODUCTION

This dissertation is an investigation of vantage point as a cognitive strategy used to recollect personal memories. The term refers to an individual's selection of a mental point of view when recollecting an autobiographical episode or event. Previous research has described two vantage points in personal memories—field and observer (Nigro & Neisser, 1983). From the field vantage point, an event is recalled from a point of view inside the event as if re-living the event through one's own eyes. From the observer vantage point, a personal memory is recollected in a more detached manner, like a spectator watching him- or herself in the remembered scene.

There are three main reasons for seeking a deeper understanding of vantage point in episodic memory (i.e., the memory system/process that mediates the recollection of personal experiences; Tulving, 1983). First, as a basic question about memory, an investigation into this cognitive strategy would help to establish whether field and observer vantage points result in the same or different kinds of information about a past experience. Earlier studies have shown that participants recollect different kinds of information when memory retrieval is guided by different schematized roles (e.g., a home buyer vs. a burglar perspective; Anderson, Pichert & Shirey, 1983) or by different emotional states (e.g., happy vs. sad; Eich, Macaulay, & Ryan, 1994), but no empirical research has yet examined the effects of field versus observer vantage points on the content of autobiographical memories. A second reason for investigating field versus observer vantage points is to learn about the subjective experience of remembering from each point of view. There
has been a burgeoning interest in the experience of the rememberer during the recollective process (Tulving, 1983; Wheeler, Stuss, & Tulving, 1997; Wheeler, 2000), the field and observer vantage points may influence the experience of remembering in different ways, which may provide a clue as to why a person would chose one perspective over the other. Finally, the observer vantage point in memories of personal experiences has long been recognized (Freud, 1899/1959), though there has been little empirical work on this psychological process. Freud noted that the observer vantage point was more often seen in his neurotic patients yet an empirical study of the effects of vantage point on memory content in the clinical domain has never been undertaken. Thus, a final reason is to add empirical substance to a memory process long observed in traumatized individuals.

The main question guiding this dissertation research is the following: do field and observer vantage points reveal the same or different kinds of information remembered about a past event? This question will be addressed by accomplishing three objectives. The first of these is to develop a laboratory methodology to study field and observer vantage points during episodic memory retrieval. The second objective is to ferret out, by means of an experiment, the specific criteria (i.e., memory content) that can be used to differentiate reliably between the recollections produced from the field and observer points of view. Relatedly, the dissertation research will also investigate the subjective experience of the rememberer from each vantage point through the use of a post-recall questionnaire developed to tap various aspects of the retrieval experience.
A potentially thorny problem that arises in any experimental research that entails the manipulation of psychological states—including vantage points at memory retrieval—is the contribution of demand characteristics. By specifying a vantage point for recollection, the experimenter is to some degree guiding recall. This guiding of recall can set up an implicit demand that can potentially alter the results (this point is elaborated upon in section 3.4). To refute the possibility that demand characteristics contributed to the laboratory results, the third objective is to validate the laboratory findings in an experiment using a sample of individuals with posttraumatic stress disorder (PTSD). This diagnostic group was selected because clinical observation suggests these individuals often naturally assume an observer vantage point when recollecting the event that led to their traumatic stress (Foa & Rothbaum, 1998). By using naturally derived, rather than experimentally induced, field and observer memories, the differences that emerge between field and observer memories will be a product of vantage point and not experimental demand.

Additionally, a particularly interesting analysis will be to characterize the nature of the two memory types using the methodology developed in the laboratory, to systematically quantify what has up to this point been anecdotally and qualitatively described about the observer vantage point in the trauma memory literature (Cardena & Spiegel, 1993; Foa & Rothbaum, 1998; Freinkel, Koopman, & Spiegel; 1994; Noyes & Kletti, 1997; Siegel, 1984; Tromp, Koss, Figueredo, & Tharan; 1995). By gaining a deeper understanding of how vantage points influence the recollection of traumatic experiences, clinical assessment and treatment may be
modified to better enable a client to overcome their traumatic stress. Current theories on the treatment of PTSD suggest that emotional processing of the trauma material is necessary for psychological recovery. The vantage point selected for memory retrieval may influence memory content and the rememberer's experience of recollecting in such a way as to interfere with recovery from his or her traumatic experience.

The rest of this dissertation consists of five chapters. Chapter 2 is a theoretical and empirical review that refines the notion of vantage point in episodic memory. This chapter includes a review of previous cognitive research on vantage point in memory, the methodology used to study it, and major conclusions that can be drawn from this literature. Chapter 3 describes the laboratory experiment, detailing the methodology and results of vantage point selection on memory content. Chapter 4 examines evidence of vantage point in memories of trauma and discusses the function vantage point selection may have in the regulation of emotion by traumatized individuals. Chapter 5 details the methodology and results of the clinical experiment with patients diagnosed with PTSD. Finally, Chapter 6 explores both the strengths and shortcomings of the present research, and suggests some promising directions for future inquiry.
CHAPTER 2: VANTAGE POINT IN EPISODIC MEMORY

2.1 Introduction

This chapter has two objectives: to clarify the construct of vantage point in episodic memory and to review the cognitive literature on this construct.

Before reviewing the cognitive literature, it will be helpful to establish the concept of vantage point within a larger theoretical framework. Tulving (1983) suggests that memory can be divided into three systems: semantic, procedural, and episodic. The semantic system mediates the acquisition of general knowledge (e.g., facts and word meanings), the procedural system enables the rememberer to acquire and perform skills and habits (e.g., playing the piano or riding a bicycle), and the episodic system mediates memories of temporally and spatially dated personal events (e.g., I had sushi last night at Hon's on 4th Avenue).

Vantage point is a cognitive process that operates in episodic memory—memories of specific events that happen only once and often include a remembered scene. Thus, when people recollect an episode or event from their past, such as their graduation from high school or the birth of their first child, they sometimes adopt the perspective of an autonomous observer or spectator, such that they see themselves as actors rather than participants in the remembered event. On other occasions, however, people re-experience the event from the perspective of the participant, as if re-experiencing it through their own eyes. These two different modes of remembering are referred to as observer and field vantage points, respectively, and operate in episodic memory.
The human mind can be thought of as a cognitive system that uses mental computations (i.e., operations or strategies) to organize stored information for memory retrieval (Minsky, 1985). Higher-level cognitive operations provide efficient ways for the cognitive system to quickly retrieve information that is pertinent to the internal or external goals of the rememberer (Koriat, 2000; Rumelhart, 1980). By positioning the remembering self either “inside” the event or “outside” the event, the cognitive system is performing a mental computation that can be used as an organizational guide for memory retrieval.

Most of the cognitive literature treats vantage point as a cognitive strategy (i.e., a mental computation) employed at the time of memory retrieval, and this dissertation will adopt this same perspective. However, it should be recognized that this strategy could be employed at various time points, for example, when the event occurs, immediately after the event, or even several years after the event. This dissertation is not directly concerned with when a particular vantage point was initiated (although this can be assessed by self-report); rather, it focuses specifically on vantage point at the time of memory retrieval.

2.2 Cognitive Research on Vantage Points

The observer/field distinction has long been recognized, Freud (1899/1959), for instance, maintained that it had important psychodynamic implications for understanding memory (see also Henri & Henri, 1897). He believed that early childhood memories of anxiety-provoking preoedipal experiences were reconstructed into memories that masked the deeper emotionally conflictual
elements, and that one way to do this was to take an observer perspective while recollecting.

Even though the concept of vantage points is an old, even venerable one, empirical studies of the distinction are scarce—in fact, a search of the literature turned up only four studies that either directly or indirectly bear on this issue. These studies center on two main issues: (1) why a person selects one vantage point over the other to guide his or her recollection, and (2) how the chosen vantage point affects the person's experience of remembering and his or her causal attributions of past behavior. The factors that have been shown to affect vantage point, and the effect of vantage point on the experience of remembering and causal attributions, will be considered separately in the sections below. Most of the studies reviewed contain several individual experiments and each individual experiment will be reviewed under the appropriate topic heading. The reader is forewarned that there may be some overlap in methodology and participant samples across sections, because these procedures and groups were employed to answer multiple research questions.

2.2.1 Event age. There is some evidence that suggests that people tend to see themselves as actors in events of the distant past, but re-experience recent events from the perspective of their own eyes (Nigro & Neisser, 1983; Robinson & Swanson, 1993). Nigro and Neisser (1983) used a questionnaire to ask 40 undergraduates to recall occasions to various situational cues specified by the experimenter (e.g., being elated, being angry, giving a public presentation, and running from a threatening situation) and indicate whether their recollections were
from the observer, field, or neither memory perspective depending on whether they "saw" themselves in the memory (observer), they "saw" the original field of view (field), or felt that neither point of view fit (neither).

Nigra and Neisser restricted their analysis to only those participants who had reported at least one field and one observer memory, which was the majority of the participants (i.e., 32/40). The investigators found that, across participants, the mean field event age (i.e., the interval between the event and recall) was 15 months, whereas the mean observer event age was 35 months. Another of their experiments that used similar procedures replicated these results. In addition, Nigra and Neisser provided participants two extra situational cues, the results of which further supported these findings: occasions produced for something that happened yesterday yielded 21 field memories and 7 observer memories, whereas instructions to recall an early childhood event produced 11 field and 18 observer memories.

Robinson and Swanson (1993) provided further evidence that event age influences the vantage point adopted during memory retrieval. Using a questionnaire, these investigators asked 90 undergraduates to describe in writing three memories from four "life chapters" (i.e., early childhood, elementary school, middle or high school, and college) and to indicate their retrieval perspective (i.e., field, observer, neither) based on the definitions provided by Nigra and Neisser (1983). Ninety-eight percent of the participants endorsed experiencing a field or observer point of view in their memories. The observer point of view was reported for 59% of early childhood memories, 46% of memories from elementary school,
48% from high school memories, and 28% for recent college memories. In contrast, field memories showed the opposite trend. Thus, older memories were again more often remembered from the observer point of view, whereas recent memories were more frequently recalled from the field perspective.

Before moving onto the second factor shown to be important in vantage point selection, neither of the studies reviewed found significant gender differences in the adoption of the field and observer vantage points, as it happens no such differences in gender and vantage point selection were found in the rest of the sections that follow.

2.2.2 Situations. Research has demonstrated that environments involving a high degree of self-awareness, social anxiety, or threat lead to more observer memories, whereas situations with greater general affective involvement lead to more field memories (Nigro & Neisser, 1983). Nigro and Neisser (1983) administered a questionnaire to 20 undergraduates that asked them to recall a personally experienced event to such situational cues as feeling elated, feeling angry, giving a public presentation and running from a threatening situation and indicate the vantage point of the memory (i.e., field, observer, neither). The researchers reported that overall field memories were somewhat more common than observer memories (51% vs. 36%, respectively, and 12% of the memories were rated as being from neither perspective). The situational cues being angry, being elated, and being embarrassed produced the most field memories. In contrast, the situational cues giving a public presentation and running evoked the most observer memories.
Nigro and Neisser refined the situational cues to target more specific situations and administered the questionnaire to another 20 students. The researchers again noted that, overall, there were somewhat more field than observer memories (48% vs. 42%, respectively; 9% of the memories were rated as having neither perspective). Again, the situations differed in the tendency to elicit field and observer vantage points. The situational cues *watching a horror movie* and *being in an accident or near-accident* produced the most field memories. In contrast, *walking or running from a threatening situation* produced the most observer memories, followed by *giving an individual public performance*, and *being in a group performance*. It is interesting to note that the situational cue *being in an accident or near-accident* yielded 35% observer memories and 58% field memories (there were 8% memories from neither perspective), in contrast to the situational cue *walking or running from a threatening situation* which yielded 60% observer memories and 38% field memories (there were 3% from neither perspective). Thus, the type of specific threat influences whether one adopts a field or observer vantage point during memory retrieval.

Furthermore, analysis of the participants' ratings of self-awareness and emotionality of the memories also supported the idea that observer memories are associated with high levels of self-awareness.

### 2.2.3 Personality factors

Personality factors also have been shown to play a role in vantage point selection. Robinson and Swanson (1993) reported that observer memories predominate when publicly self-conscious individuals recollected their social interactions. In addition, Kihlstrom and Harackiewicz (1982)
found that when people high in harmavoidance, a construct closely related to neuroticism, recalled their earliest autobiographical experiences they did so from an observer perspective.

Robinson and Swanson (1993) used a questionnaire that asked 90 participants to recall occasions from different times in their lives and indicate the perspective of each memory (using the definitions developed by Nigro and Neisser, 1983). The researchers then administered another questionnaire assessing private and public self-consciousness (Fenigstein, Scheier, & Buss, 1975). The investigators divided the participants into three groups according to the number of observer memories they reported (i.e., group A = none or one; group B = two memories; group C = three or four memories). These groups did not differ in private self-consciousness (i.e., a focus on internal states) but did differ in public self-consciousness (i.e., a heightened awareness of themselves as an object of social appraisal). Specifically, the group reporting the most observer memories had higher levels of public self-consciousness than the other groups.

There is also evidence that people who rate highly in harmavoidance, a personality construct closely related to neuroticism, tend to recall their earliest experiences from a perspective outside of themselves (Kihlstrom & Harackiewicz, 1982). The researchers used Freud's construct of "screen memories" (1899/1959) to determine the relationship with harmavoidance. In particular, the investigators abstracted four criteria derived from Freud's definition of screen memories: (a) "they lack any feeling tone", (b) "are remembered repetitively", (c) "are predominantly visual", and (d) "the person sees him- or herself in the memory image"
Kihlstrom and Harackiewicz asked 150 high school and 164 college students to complete a survey by briefly summarizing in writing their earliest recollections and indicate when the event occurred. The participants were also asked to indicate (a) whether the memory was pleasant, neutral, or unpleasant, (b) the frequency of prior recollection of the event, (c) the sensory modalities involved, and (d) whether they saw him- or herself in the memory image. The authors noted that relatively few of their sample of high school and college students earliest memories possessed all four of the screen memory qualities and therefore a liberal criterion (i.e., at least three of the four critical features) was used to classify early recollections as screen memories. The researchers then administered a personality measure, which consists of 20 content scales measuring various personality traits (the investigators provide no reference for the personality questionnaire), including harmavoidance. Overall, screen memories were more often associated with high scores on the harmavoidance scale.

2.2.4 Purpose of retrieval. Finally, Nigro and Neisser (1983) demonstrated that the goal of retrieval influences the point of view in memory: whereas instructions to concentrate on the objective circumstances surrounding an event frequently elicited observer memories, asking people to focus on the feelings associated with the original event typically engendered field memories. Nigro and Neisser (1983) divided 30 high school students into groups of 10 and used a questionnaire to ask them to recollect occasions to the situational cues described previously in Section 2.2.2. One group of participants was asked to describe the feelings they had experienced on those occasions, the second group was asked to
describe the concrete, objective circumstances of the occasions, and the third group was asked to simply describe their experiences. The participants were then asked to indicate the memory perspective and rate the intensity of the feelings they had experienced on the occasion using a 4-point scale (ranging from very intense to weak). The results showed that participants trying to remember feelings were more likely to take a field point of view than those who were trying to recall the concrete, objective circumstances. Those participants who were trying to recall the objective circumstances of the event tended to adopt the observer perspective. When no particular aim was requested, participants spontaneously tried to remember feelings from the field point of view. All three groups reported the same intensity of feelings in the original situation, which suggests that the present goals of the rememberer influence vantage point over and above the influence of past feelings. In sum, when a rememberer is attempting to recollect the physical context of a prior event he or she tends to adopt the observer vantage point, whereas when the rememberer is attempting to recall how they felt at the time he or she employs the field point of view during memory retrieval. As Schacter (1996) points out, this means that an important part of the recollective experience is constructed or invented at the time of recall and that the way the event is remembered depends on the purposes and goals at the time of attempted recall.

2.2.5 The effect of vantage point on the experience of remembering.

Robinson and Swanson (1993) asked 64 university students to recollect several autobiographical events that occurred within the past five years. Participants classified each remembered event as either a field or an observer memory and
rated its original and current emotional intensity (i.e., how they felt about the event when it took place versus how they felt about it as they recollected it). Two weeks later, participants recalled the same events again—either from the original vantage point or from the alternative perspective—and again rated their past and present emotional intensity. There was little change in rated emotionality (either original or current) when the vantage point remained the same or when it shifted from observer to field. However, a switch from the field to observer perspective produced a marked decrease in both measures of emotional intensity. This experimental group rated the original experience as less emotional and indicated that they experienced less arousal during the act of remembering following a shift from the field to the observer perspective. There was no relationship between vantage point and the participants' general ability to manipulate mental imagery. As noted by Schacter (1996), these results suggest the emotional intensity of a memory is determined, at least in part, by the way one goes about remembering the event, and that the emotions that are attributed to the past may arise from the way the memory is retrieved in the present.

2.2.6 The effect of vantage point on causal attributions. Regarding the effect of memory perspective on causal attributions, Frank and Gilovich (1989) asked eighty participants to take part in a "get-acquainted" conversation and answer dispositional and situational attribution questions about their performance. The questions were phrased as follows: (a) "How important were personal characteristics about you—your personality, traits, character, personal style, attitudes, moods, and so on—in causing you to behave that way?" and (b) "How
important were characteristics of the situation—such as being in an experiment, the 'getting-acquainted' situation, the topic of conversation, the way the other participant behaved, etc.—in causing you to behave that way?" Three weeks later, participants answered the same dispositional and situational attribution questions and were asked which point of view (using definitions adapted from Nigro & Neisser, 1983) they used to remember the conversation. Sixty-six percent of the participants adopted the field perspective and 28% adopted the observer point of view to recollect the social exchange. The participants who remembered the conversation from the observer perspective tended to make more dispositional and less situational attributions with the passage of time than those participants who recalled the conversation from the field perspective. The participants who adopted the field perspective for recall showed the opposite trend. These data suggest an association between vantage point and causal attributions.

To establish a direct relationship between vantage point and causal attributions, the researchers carried out a second study with 108 undergraduates using the same procedure as the first session of the previous experiment but when participants returned three weeks later the investigators randomly instructed half of them to recall the conversation from the field perspective and the other half from the observer point of view. Again, the attributions from the observer condition became more dispositional, though in this experiment there was no change in situational attribution ratings. In contrast, the attributions from the field condition became less dispositional and more situational from the first session to the second session.
These results suggest that the vantage point one takes at retrieval affects the perceived causes of behavior in the past.

2.2.7 Summary of the research literature. The exploratory studies reviewed in this section provide useful insights into the factors that affect whether one vantage point is adopted over the other. Thus far, four factors have been found to affect vantage point selection: event age, situational characteristics, personality dimensions, and purpose of remembering. Furthermore, the studies suggest that vantage point affects the experience of remembering and causal attributions of past behavior. As noted earlier, a factor that apparently does not affect vantage point selection is gender: no study reported to date revealed any reliable differences between males and females in the adoption of the field and observer perspective for recollection (Frank & Gilovich, 1989; Kihlstrom & Harackiewicz, 1982; Nigro & Neisser, 1983; Robinson & Swanson, 1993).

Though some progress has been made in determining the factors that affect vantage point selection, as well as the effect of vantage point on various characteristics of the subjective experience, an important open issue is whether vantage point influences the types of content retrieved from a memory of a personally experienced event. Nigro and Neisser noted that when participants were describing their field memories they tended to describe how they felt (i.e., "feelings of pride, shock, anxiety, ..."; p.478), and only two of their participants described feelings in their observer memories. The researchers did not directly test these observations. Thus, one of the main aims of this dissertation is to directly investigate this memory-contents issue in a well-controlled laboratory experiment.
Additionally, the studies examined in this review used only student samples. Though Freud (1899/1959) noted the high frequency of observer memories in his neurotic patients, the effect of the field and observer modes of retrieval on memory content has never been examined directly in the clinical realm. The second dissertation experiment will fill this gap by investigating the effects of vantage point on the content of memories from traumatized individuals.

2.3 Content Differences between Vantage Points

To determine a priori what differences might be expected between field and observer vantage points with regard to recollected content, it is instructive to consult a common lexicon (i.e., the Merriam-Webster Dictionary, 1980) as a means of identifying what the average person takes to be typical attributes associated with each point of view.

Attributes typically associated with being an observer, or spectator, are (1) detachment from the event, (2) silence, and (3) non-interaction. Rather than influence what is happening, observers usually are mere bystanders passively watching as events occur. Compared to the experiencer, the observer may have differential access to the details of an event. For example, while witnessing a car crash, an observer can see the red light, on-coming traffic, and surrounding scenery but he or she cannot know whether the experiencer of the accident is pumping the brakes inside the car, feeling terror, or thinking of death. Clearly, the observer's scope of view will influence the kinds of details he or she is more or less likely to notice in the scene. As illustrated in the example above, the observer vantage point may provide only limited access to the sensory input, mental state, and affective
reactions of the experiencer. An observer may have access to visual and auditory properties but not to the touch, taste, or smell of the person actually experiencing the event and most likely not what he or she is thinking and feeling at the time. However, the observer may have greater access to the overall scene, including spatial relations among various objects, actions of the experiencer and those around them, and peripheral events unobservable from the perspective of the one actually experiencing the main event.

In contrast, the field vantage point is, by definition, subjective—it represents the experiencer's point of view. The Merriam-Webster Dictionary (1980) defines subjective as "relating to or arising within one's self or mind in contrast to what's outside: personal." The field vantage point is like the window through which the self views the world around it. Thus, the field point of view is linked to self-experience: the thoughts, feelings, beliefs, and typical reactions of an experiencer. The field vantage point may offer a more up-close and personal view of local information than the observer vantage point, which may be more distant from the scene. The field vantage point gives the experiencer access to direct information about the event and to all sensory modalities. These memories are thus likely to contain more fine details and phenomenological content. In addition, the field vantage point conveys knowledge about the antecedents and consequences of an event, and possibly related life experiences; such aspects are less likely to be known to a mere observer of an event.

These attributes suggest that memories produced from each vantage point will differ in predictable ways. Specifically, memories retrieved from a field vantage
point should contain more of the following content:

- affective reactions
- sensory information
- psychological state information
- fine-grained details (close-up details)
- associated experiences

By contrast, memories derived from an observer vantage point are likely to yield more information about the following:

- spatial relationships
- peripheral details (details that are best perceived from the outside at a distance)
- self-observations
- physical actions

Again, from the attributes characterizing each of the perspectives, there are predictable differences in the memory content that might be produced from assuming one point of view over the other.

2.4 Summary

Vantage point is a cognitive strategy used during the retrieval of episodic memories. Two such strategies that are typically used to remember an episode are the field or the observer vantage point. Exploratory research suggests that event age, personality styles, situational characteristics, and purpose of retrieval influence whether one vantage point is selected over the other. There is also evidence that
vantage point affects the experience of remembering and causal attributions of past behavior. However, it is still unknown whether the vantage point adopted during memory retrieval affects the kinds of information remembered from a personally experienced event.

In this regard, it is interesting to note that content differences in remembered material have been found with both schematized roles and with mood states. Considering the former, Anderson and Pichert (1978) conducted the best-known series of experiments demonstrating the effects of schematized roles on recollection (see also Anderson, Pichert, & Shirey, 1983; Pichert & Anderson, 1977). Thirty-nine participants were asked to remember a story about a house from the perspective of a burglar or the perspective of a homebuyer. When asked to remember the story from the burglar’s perspective, participants reported details most pertinent to a thief, such as expensive bicycles in the garage, an unlocked side door, and a concealing hedge on the front lawn. In contrast, participants who were asked to remember the story from the perspective of a homebuyer remembered details relevant to the appearance and integrity of the house, for instance, manicured lawns and a damp basement. Thus, schematized roles taken during retrieval can markedly affect the kinds of information recollected from memory of particular instances.

And in connection with mood, several studies have demonstrated that one’s emotional state during the act of remembering selectively influences the retrieval of affectively congruent information (Bower, 1981). For example, Eich, Macaulay, and Ryan (1994) asked participants in either a happy or sad mood to generate events
from their personal past and rate them on emotional valence. Compared to those in a sad mood, happy participants generated more emotionally positive events, fewer negative events, and an equal number of neutral events. These findings suggest that mood at the time of recollection selectively guides the retrieval of affectively congruent information from memory: people who feel happy tend to remember more positive information, whereas people who feel sad tend to remember more negative information.

Given that content differences have been found with schematized roles and with mood states, the question arises as to whether analogous content differences would also be found with vantage points. Through rational analysis, it was shown that each vantage point appears to be associated with a particular set of attributes, suggesting that adopting one retrieval mode over the other is likely to give rise to predictable differences in remembered information.
CHAPTER 3: A LABORATORY INVESTIGATION OF VANTAGE POINT IN EPISODIC MEMORY

3.1 Introduction

The aim of the first experiment was to examine whether vantage point during memory retrieval influences memory content. Specifically, the objective of the laboratory experiment was to have a controlled setting where the context in which the events take place is known and thus directly compare the qualities of memories of essentially the same events recalled from two different perspectives—the field and the observer vantage point. To create an episode for recall, university students performed several experientially rich hands-on tasks. Later, in another room, participants recalled their experience of the original environment and of the tasks they had performed, from either the field or the observer vantage point (the perspectives for recall were randomly assigned). Following recall, the participants provided their opinions on how the specified vantage point affected their memory. Two coders were recruited to carefully analyze the contents of the participants' tape-recorded recollections using a scoring key. The scoring key consisted of a priori determined content categories on which the vantage point memories were predicted to differ (e.g., affective reactions, physical sensations, spatial relations, etc.), as mentioned in the previous chapter and specifically detailed below in Section 3.3.2.

1 A brief version of this experiment has recently been accepted for publication (McIsaac & Eich, in press).
3.1.1 Hypotheses. The following predictions were based on the content categories derived from the typical attributes associated with each point of view reviewed in section 2.3. It was predicted that field memories would contain information about the event best known, or in some cases only known, from the perspective of someone experiencing an event through their own eyes. It was expected that the field memories would contain more information reflecting the affective reactions, physical sensations, psychological states, associated ideas related to the tasks, and fine details (including the color, shape, and size of the task objects) of the experimental items. In contrast, it was predicted that observer memories would contain information about things best or only known from the perspective of an outside observer; namely, more information reflecting self-observation from a detached point of view, the participant’s actions while performing the tasks, surrounding peripheral details, and the spatial relations among the task objects. As for memory accuracy, it was assumed that the observer memories would contain more memory errors, given the more elaborate reconstructive process involved to generate such memories.

Expanding on the Robinson and Swanson (1993) study, discussed in section 2.2.5, it is of interest to consider whether taking the field or observer point of view influences the participants' experience of remembering. To this end, participants were asked to indicate the level of emotion and detail they associated with each memory perspective during recall. It was expected that participants would associate higher levels of emotion with field memories, since these memories were assumed to contain more emotional content. Other aspects of the participants'
recollective experience were also explored, such as the strength and ease of holding the perspectives, and the perceived influence the vantage points had over what was remembered. Again, since the observer vantage point is a more elaborative reconstructive process, it was predicted the observer memories would be harder to hold and maintain than the field memories, and possibly have more perceived influence over what was remembered.

3.2 Method

3.2.1 Participants. Fifty-two University of British Columbia undergraduates (31 women and 21 men; mean age = 19.0 years), fluent in spoken English (as assessed by the North American Adult Reading Test; Spreen & Strauss, 1991), received course credit in return for their participation. Participants were tested individually throughout the experiment, which comprised a single session lasting about 45 minutes. There were four students who were excluded from the study because their verbal ability was below the low average range, as assessed by the NAART. One student reported that she was unable to mentally invoke the observer vantage point, the condition to which she had been randomly assigned. For interest she asked whether she would have been able to evoke the field perspective, she reported that she was unable to generate mental imagery in general and could not adopt either perspective.

3.2.2 Measures. The North American Adult Reading Test (NAART; Spreen & Strauss, 1991) was used to ensure participants could verbally describe their experiences. The NAART is a 61-item computer-administered pronunciation test commonly used to estimate verbal IQ. The test was used in the laboratory
experiment as a screening instrument to ensure the participants were above a pre-specified level of verbal ability. The NAART was administered according to instructions provided by Spreen and Strauss (1991). Prior research suggests that a cutoff score of 20 for participants 19 years-of-age (the average age of introductory psychology students) translates to a verbal intellectual ability estimate of 85 (Uttl & Graf, 1997). A verbal intellectual ability score of 85 is within the low average range and participants at or above this score were deemed acceptable for inclusion in the present study.

3.2.3 Procedures. Participants were first asked to complete the computer administered NAART. Those participants who scored lower than 20 were given course credit for their participation. The participants who scored above 20 were admitted into the study.

Participants were told at the outset that they would be asked to spend about 10 minutes completing a series of manual tasks, and that they would later be asked to recall the experiences they had while performing these tasks (the consent form is presented in Appendix A). The participants read a laminated piece of paper with the following task instructions printed in large bold font:

We are interested in learning how people experience events in their personal lives and what they remember about them, what details are included or excluded from their memories of these events. For example, taking an exam, you probably do not remember the font of your textbook, and you may not even remember the information you were supposed to memorize. Instead, you may only remember where the information was located in the textbook (e.g. "I can see it in the top left hand corner of the page"). The purpose of this experiment is to find out what details people remember or do not remember from their experiences. Details include what do you do during the task, items you may have noticed around the
room, how you felt, the sensations you might have experienced, and thoughts you may have been thinking.

In order to learn more about what is remembered or not remembered, we have made up a series of tasks that you will carry out in the lab room. After you complete the tasks, I will record on audiotape your memory of performing the laboratory tasks. Do you have any questions?

The tasks, which were designed to be actively engaging and replete in sensory and other experiential elements, included (1) 3 minutes of molding a ball of clay into an object of the participant's own choosing, (2) 1 minute of throwing a small foam basketball into a hoop, (3) 1 minute of touching a furry object, (4) 1 minute of folding paper, with gloved hands, to match an abstract design, (5) lifting barbells (bicep curls of 1 kg) five times with both arms, and (6) twice attempting to flutter a sheet of paper in front of a fan and a heater. Task materials (clay, barbells, etc.) were laid out on a conference table, which the participants moved around in a clockwise direction, completing the tasks in one of two randomly determined orders. The table itself was located in a large room that was decorated with wall posters and suffused with classical music.

On completing the last task, participants were escorted to a nearby office containing two chairs, a bare table, and several empty bookshelves. Depending on the recall condition—either field or observer vantage point—to which they had been assigned, at random and in equal numbers, participants received one of two sets of instructions. In the field condition, participants were asked to mentally reinstate the original room as if they were seeing it again through their own eyes; in the observer condition, participants were asked to mentally reinstate the original room as if viewing themselves in the remembered scene from the vantage point of a spectator.
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or detached observer. While maintaining the specified vantage point, subjects were
asked to recall—aloud and in as much detail as possible—their experience of the
original room and of each of the tasks they had performed within it, starting with the
first task and continuing on to the other five. All of the subjects' recollections were
recorded on audiotape. The verbatim instructions were as follows:

Field Condition:

Please listen carefully; this is an important part of the study. In this study I’m interested in the memories people have of their personal experiences. While remembering personal events, people often report "seeing the event in their mind’s eye." Many report their memory images are like a movie or snapshot of the event. People often report recollecting some of their memories from a vantage point inside the event, as if seeing the event though their own eyes. These types of memories are called field memories and I am interested in studying the properties of these types of memories. To help me understand field memories, I would like you to remember your experience of the room and doing the study tasks, in as much detail as possible, as if seeing the it again through your own eyes. Imagine yourself again going through the tasks you performed earlier and describe each task in as much detail as you can. Start with the first task and continue on to the other tasks.

Observer Condition:

Please listen carefully; this is an important part of the study. In this study I’m interested in the memories people have of their personal experiences. While remembering personal events, people often report "seeing the event in their mind’s eye." Many report their memory images are like a movie or snapshot of the event. People often report recollecting some of their memories as if they were an observer or spectator watching themselves in the remembered scene, kind of like you’re a fly on the wall. These kinds of memories are called observer memories and I am interested in studying the properties of them. To help me understand observer memories, I would like you to remember your experience of the room and doing the study tasks as if you are a spectator, watching yourself in the scene in as much detail as possible. Imagine yourself again going through the tasks you performed earlier and describe each task in as much detail as you can. It is very important you stay as an observer while recollecting your experience in the other room. Start with the first task and continue on to the other tasks.
Following recall, participants completed a 6-item questionnaire that asked:

(1) what percentage of total-recall time were you able to maintain the field [observer] vantage point? (2) how strongly did you maintain the field [observer] vantage point? (3) how easy was it for you to maintain the field [observer] vantage point? (4) to what degree did the field [observer] vantage point influence your recollections? (5) how rich in detail were your recollections? and (6) how rich in emotion were your recollections? Responses to the last five questions were made on 7-point scales, where 7 indicated strongly maintained/easy to maintain/large influence/much detail/much emotion and 1 signified not strongly maintained/difficult to maintain/small influence/little detail/little emotion. The post-recall questionnaire is presented in Appendix B. Participants left the lab with a written account of the study's aims and methods and a credit slip for their participation (the debriefing form is presented in Appendix C).

Presented below is a diagram of the procedures involved in this experiment:

<table>
<thead>
<tr>
<th>Room 1</th>
<th>Room 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consent</td>
<td>NAART</td>
</tr>
<tr>
<td>Study Instructions</td>
<td>Tasks</td>
</tr>
<tr>
<td>Recall Instructions F/O</td>
<td>Recall</td>
</tr>
<tr>
<td>Post-recall Questions</td>
<td>Debriefing</td>
</tr>
</tbody>
</table>

F/O = field/observer
3.3 Results

3.3.1 Post-recall questionnaire. Multivariate analysis (Hotelling's T-test) indicated significant differences between vantage points in participants' responses to the 6-item post-recall questionnaire ($F(6,45) = 11.42, p < .01$). To isolate these differences, follow-up t-tests were conducted using a Bonferroni-adjusted alpha of .02 (i.e., .10/6; given that the Bonferroni adjustment is conservative, an alpha level of .10 was judged to be a reasonable compromise between control for Type I error inflation and maintenance of statistical power).

By their own account, participants found it easier to maintain the field than the observer vantage point during the recall period (mean ratings = 2.5 vs. 4.2; $t(50) = 4.70$). In addition, participants rated field memories higher than observer memories in their richness of detail (means = 5.0 vs. 3.9; $t(50) = 3.27$) and emotionality (means = 4.4 vs. 2.9; $t(50) = 4.12$). However, no reliable difference appeared between field and observer vantage points in terms of how long they were maintained over the course of recall (mean total-time percentages = 81% vs. 73%; $t(50) = 1.89$), how strongly they were held (mean ratings = 4.9 vs. 4.8; $t < 1$), and the degree to which they influenced recall (mean rating = 4.8 vs. 4.8; $t < 1$).

3.3.2 Coding and analysis of recollections. A verbatim transcript was prepared of each participant's tape-recorded recollections, and the total number of words was calculated by computer program. There was a nonsignificant--but nonetheless notable--tendency for longer field than observer transcripts (means = 844 vs. 659 words; $t(50) = 1.94, p = .06$); the typical transcript contained 750 words.
Each transcript was coded according to 11 categories by 2 trained assistants, both blind to recall condition and study hypotheses (intercoder reliability > .85), and for memory errors to assess the accuracy of the participants' accounts. The 11 categories were defined in terms of statements (single words or phrases) reflecting:

1. **affective reactions**, whether emotional or motivational in nature (e.g., it was fun playing with the clay; I was determined to make my basketball shots);
2. **physical sensations** from any sensory modality (e.g., the clay felt soft; I listened to some music);
3. **psychological states** (e.g., I wondered how much time was left while I was folding the paper; I was confused about what to do);
4. **associated ideas**, including knowledge or experiences gained outside the current experimental context (e.g., my grandmother raised rabbits and the fur led me to think of her; I made a car out of the clay because I just bought a new Miata);
5. **self-observation** (e.g., I can see myself hunched over the table; I can see myself while I'm shooting the basketball);
6. **physical actions** made in the course of performing the tasks (e.g., I shot the basketball; I sat at the table);
7. **spatial relations** between objects used in the tasks, relative to other objects or to the participants themselves (e.g., the clay was to the left of the model airplane; the basketball hoop was above me);
8. **first-person accounts** (e.g., I; me; myself);
9. **third-person accounts** (e.g., he; she);
(10) fine details of the task objects, including color, shape, size, and numerical quantifiers (e.g., the clay was blue; the paper was shaped like a triangle; the barbell was small; I took 20 shots at the hoop);

(11) peripheral details of the room that were not central to the tasks (e.g., there were Coke cans sitting on the bookshelf).

The total number of statements in each category was calculated for each participant, and the resulting data were then averaged over participants to yield the mean frequencies shown in Table 1. There were no outliers (defined as a z-score of 3.5 standard deviations from the mean) detected in the data. A Hotelling's T-test was performed between the field and observer conditions with eleven dependent variables. The multivariate effect was significant, $F(11,40) = 11.32, p < .01$, and supplemental t-tests were carried out using a Bonferroni-adjusted alpha of .01 (i.e., .10/11).

Inspection of the table reveals that field memories contained more statements reflecting the affective reactions, physical sensations, psychological states, and associated ideas that the participants experienced while completing the tasks. In contrast, observer memories contained more statements reflecting the participants' physical self, their actions while performing the tasks, and the spatial relations between the task objects. As is also apparent in Table 1, first-person accounts were much more common in field than in observer memories, while the opposite was true for third-person accounts. The only categories for which field and observer memories did not differ reliably were fine details about the task objects.
(including their color, shape, and size) and peripheral details about the room where the tasks were performed.

Regarding the veridicality of the memories from each vantage point, there was a total of only two errors, both made by the same participant in the field condition. This person reported that the blackboard was a whiteboard and the basketball hoop had a backboard, which it did not.

3.4 Discussion

The results of this study suggest that what one remembers about past events depends in part on which retrieval mode or vantage point one adopts at the present. Taking the field rather than the observer perspective predisposed participants to recall phenomenological aspects of the remembered episodes; in particular, field memories included more information about affective reactions, physical sensations, and psychological states that participants experienced as they shot basketballs, shaped clay objects, and performed other manual tasks. Also embedded within field memories were associations to other, related ideas or experiences—a type of remembered detail virtually absent from memories retrieved from an observer perspective. Instead, observer memories contained information that would have been especially salient to a detached spectator; specifically, information about how the participants looked, what they did, or where objects were located. As further evidence of the strength of the vantage point manipulation, participants assigned to the field condition were more likely to talk about their memories in first- than in third-person terms, while the opposite was true for participants assigned the observer condition.
Table 1

Mean Number of Statements in 11 Memory Content Categories as a Function of Vantage Point at Retrieval

<table>
<thead>
<tr>
<th>Content Category</th>
<th>F (n=26)</th>
<th>O (n=26)</th>
<th>F-O</th>
<th>t(50)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affective Reactions</td>
<td>8.0 (3.9)</td>
<td>1.2 (1.7)</td>
<td>6.9</td>
<td>8.13*</td>
</tr>
<tr>
<td>Physical Sensations</td>
<td>6.3 (5.5)</td>
<td>1.4 (1.4)</td>
<td>4.9</td>
<td>4.43*</td>
</tr>
<tr>
<td>Psychological States</td>
<td>11.0 (9.1)</td>
<td>2.3 (2.5)</td>
<td>8.7</td>
<td>4.72*</td>
</tr>
<tr>
<td>Associated Ideas</td>
<td>3.5 (3.5)</td>
<td>0.1 (0.3)</td>
<td>3.4</td>
<td>4.90*</td>
</tr>
<tr>
<td>First-Person Accounts</td>
<td>65.7 (37.5)</td>
<td>29.6 (23.0)</td>
<td>36.1</td>
<td>4.05*</td>
</tr>
<tr>
<td>Self-observation</td>
<td>0.0 (0.0)</td>
<td>2.2 (3.7)</td>
<td>-2.2</td>
<td>2.88*</td>
</tr>
<tr>
<td>Physical Actions</td>
<td>21.9 (13.1)</td>
<td>35.1 (17.3)</td>
<td>-13.2</td>
<td>3.11*</td>
</tr>
<tr>
<td>Spatial Relations</td>
<td>2.6 (3.2)</td>
<td>5.1 (3.3)</td>
<td>-2.5</td>
<td>2.84*</td>
</tr>
<tr>
<td>Third-Person Accounts</td>
<td>0.0 (0.0)</td>
<td>14.2 (25.9)</td>
<td>-14.2</td>
<td>2.80*</td>
</tr>
<tr>
<td>Fine Details</td>
<td>24.8 (17.7)</td>
<td>25.5 (10.0)</td>
<td>-0.7</td>
<td>0.17</td>
</tr>
<tr>
<td>Peripheral Details</td>
<td>3.8 (6.1)</td>
<td>4.9 (5.6)</td>
<td>-1.1</td>
<td>0.69</td>
</tr>
</tbody>
</table>

Note. Standard deviations appear in parentheses. Asterisks denote comparisons that were significant at a Bonferroni-corrected alpha of .01 using independent-sample t-tests. The column labeled as F-O represents the difference scores between the means of field and observer memories.
Vantage point also influenced the participants' experience of remembering. Participants in the field condition perceived their memories as more emotional and more detailed than did participants in the observer condition. Though the former perception was borne out by content analyses of their recollections, the latter perception was not: the two vantage points yielded equivalent numbers of peripheral and fine details.

As was mentioned in Chapter 1, a potentially thorny issue, endemic to studies entailing manipulations of retrieval perspectives—or any other psychological state—is the influence of "demand" characteristics. Though all instructions given to participants have an element of experimental demand—otherwise they would not be instructions—their degree of demand varies along a continuum.

To illustrate this claim with a well-known example, Anderson et al. (1983) had subjects recall a story about a house from the point of view of either a homebuyer or a burglar. Though all subjects had originally read the same story, they remembered it differently depending on the recall instructions. Those who recalled from the homebuyer perspective were more likely to remember details about the house's appearance, whereas those who took the burglar perspective were more apt to recall how to get into and out of the house, as well as what loot it contained.

Interestingly, these differences emerged even though the instructions were very simple and nonspecific. Thus, in one condition, the participants were asked to recollect the story "from the perspective of a potential homebuyer" (Anderson et al., 1983, p.273), which is different from saying "from the perspective of a potential homebuyer, including the condition of the house, its attractive features, and its
detracting characteristics." Between these two examples are many possible
degrees of experimental "demand." Similarly, in the other condition, one could have
instructed the participants to recall the story "from the perspective of a burglar"--
which is what Anderson et al. (1983, p.273) did--or one could have said "from the
perspective of a burglar, with particular attention to the ways into and out of the
house, as well as to the types of valuables inside." Thus, although the instructions
used by Anderson et al. (1983) necessarily placed demands on the subjects, they
did not come close to specifying all the types of details that were actually
remembered.

The same point applies to the present experiment, which revealed reliable
differences between field and observer memories in several specific domains (e.g.,
affective reactions, physical sensations, and spatial relations)--none of which were
alluded to in the general instructions provided. Although it is unlikely that demand
characteristics gave rise to these laboratory results, it will be possible to more
thoroughly assess the contribution of demand characteristics by comparing the
qualities of the two vantage point memories determined in this controlled study with
those taken naturally (i.e., without experimental demand).
CHAPTER 4: THE OBSERVER VANTAGE POINT IN TRAUMA

4.1 Introduction

The laboratory study showed that the content of memories yielded from the field versus observer vantage point are different. One criticism that could be leveled against these findings, however, is that the observed differences in memory content were driven by perceived demand characteristics of the controlled experiment in which they were collected rather than the perspective per se. While this is unlikely for several reasons described earlier, a more direct test of this hypothesis is to examine and compare the memory content for these two perspectives both under controlled lab conditions and in a naturally occurring setting. A particularly suitable group of individuals for this are those with PTSD, as there is evidence that such patients do, at times, take an observer perspective and that doing so may have consequences not only for what they remember, but also the efficacy of clinical treatment (this latter point is more fully explored in section 4.4). In addition, this will add generality to these results as the events retrieved are more realistic, less artificial than the ones that were the target of concern in the first experiment.

4.2 Evidence of the Observer Vantage Point in Trauma

People who endure life-threatening experiences have commonly reported adopting an observer vantage point when recalling memories of their trauma. This observation has been documented in anecdotal clinical observation (Foa & Rothbaum, 1998) and surveys of survivors of traumatic experiences (Cardena & Spiegal, 1993; Freinkel, Koopman, & Spiegel; 1994; Noyes & Kletti, 1997; Siegel,
1984; Tromp, Koss, Figueredo, & Tharan; 1995). Foa and Rothbaum (1998) describe a female victim of sexual assault who recollected her rape as if floating above her attacker on the bed. Siegel (1984, p. 267) quotes a 23-year-old gang member recounting his kidnapping by another gang from the observer vantage point: "even when they were hitting me I just tripped out, got out of my body." He felt detached from his body and "floated" to the ceiling from where he observed himself being beaten and burned with cigarettes.

In a survey of recent motor-vehicle and physical-assault survivors, Noyes and Kletti (1977) found that 34% reported taking an observer vantage point either during their experience or during recollection of the traumatic event. These authors included telling quotes from independent participants: "It was as though I was separate from myself and watching, like in a dream when you are watching yourself," "I seemed to be looking at the whole scene from outside my body," "I stood from about 50 feet off and saw myself from the side" (p.381).

The observer vantage point has also been documented in other instances of trauma. Twenty-five percent of earthquake victims (Cardena & Spiegal, 1993) and 40% of execution witnesses (Freinkel, Koopman, & Spiegel; 1994) experienced themselves or remembered the events from a mental viewpoint outside the body. Relatedly, Tromp, Koss, Figueredo, and Tharan (1995), found that traumatic memories of rape were more likely recalled from an observer point of view than were other pleasant and unpleasant memories. Thus, ample evidence suggests that individuals who have lived through one or more of a wide variety of traumas
report experiencing or remembering the traumatic event from a vantage point outside of their body.

4.3 Epidemiology of Traumatic Events and PTSD

Recent surveys suggest that exposure to traumatic events is more prevalent than previously thought. Norris (1992), for example, found that 69% of the adults surveyed in the southeastern United States reported experiencing one or more traumatic event. Resnick, Kilpatrick, Dansky, Saunders, and Best (1993), likewise, found that 69% of the women surveyed in their sample reported being criminally victimized on one or more occasion. Finally, in two independent surveys of young adults, 39% (Breslau, Davis, Andreski, & Peterson, 1991) and 89% (Vrana & Lauterbach, 1994) of the respondents indicated that they had been involved in a traumatic incident.

Although not every person exposed to a traumatic life experience develops PTSD, a substantial minority do develop symptoms of sufficient severity to warrant this diagnosis. The diagnostic syndrome of PTSD is characterized by symptoms of re-experiencing (e.g., recurrent recollections and dreams of the trauma, intense distress when reminded of the trauma), avoidance (e.g., purposeful efforts to avoid thoughts, feelings, and conversations about the event), emotional numbing, and hyperarousal (e.g., difficulties with sleep, irritability, hypervigilance). Most studies have found that between 5% and 9% of their sample developed PTSD (Norris, 1992; Resnick et al., 1993; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995), with a slightly higher rate (~25%) reported by Breslau et al. (1991).
4.4 The Observer Vantage Point in Trauma Models

Freud was one of the first psychologists to assign importance to the observer vantage point in memories of personal experiences. As noted in Chapter 2, he believed that screen memories were generated to aid the process of repression by masking recollections of anxiety-provoking experiences with memory alterations that reduce affect. Although he viewed screen memories as part of normal memory processes, Freud observed that his neurotic patients often reported these types of memories as early recollections. Freud’s screen theory suggests that one possible role that the observer vantage point plays in personal memories is to decrease the anxiety of remembering upsetting experiences.

More recent models of PTSD suggest that individuals employ a number of avoidance strategies to decrease the anxiety associated with memories of a traumatic experience (Chemlob, Roitblat, Hamada, Carlson & Twentyman, 1988; Foa, Steketee & Rothbaum, 1989; Leskin, Kaloupek & Keane, 1998). Individuals may practice behavioral avoidance by altering their routines to avoid scenarios similar to the traumatizing event (Keane, Zimering, & Caddell, 1985). Alternatively, an individual may use a variety of cognitive avoidance techniques to keep distressing memories out of consciousness; for instance, suppression (Horowitz, 1986), distraction (Creamer, Burgess, & Pattison, 1992), and emotional dissociation (Foa & Hearst-Ikeda, 1996). This last technique is reminiscent of Janet’s (1907/1965) original formulation of dissociation, which emphasized a lack of integration between aspects of memory or conscious awareness. In a more recent formulation, Foa and Hearst-Ikeda (1996) define dissociation as a set of symptoms
observed in people who have experienced trauma—symptoms such as amnesia, flashbacks, dreamlike recall of events, and feelings of depersonalization.

The dissociative symptom of depersonalization merits special consideration. According to the Diagnostic Statistical Manual for the Mental Disorders (American Psychiatric Association, 1994), depersonalization is an “experience of feeling detached from, and as if one is an outside observer of, one’s mental processes or body” (p. 490). This definition can be broken down into two components: an affective component, the feeling of detachment from the body, and a cognitive component, the mental perspective of viewing oneself (i.e., mental processes or full physical form) from a vantage point outside of the body. The observer vantage point may be regarded as the cognitive component in the dissociative symptom of depersonalization. Therefore, as indicated by Freud and using the terminology of modern trauma theories, the observer vantage point can be conceptualized as a cognitive avoidance strategy. By adopting an observer vantage point individuals mentally divorce themselves from the actual experience. By becoming spectators rather than experiencers of an event, victims mentally distance themselves from their trauma, and are thus no longer the experiencing agent. Adopting an observer vantage point would be beneficial during and after the event to help ward off overwhelming anxiety. Using the observer vantage point to recollect the traumatic event may develop into a chronic strategy to avoid the emotional distress of remembering the trauma.

The adoption of an observer vantage point during or after a traumatic event, especially if this vantage point is maintained during subsequent recollections of the
experience, has important implications for treatment. Lang (1979) coined the term “emotional processing” and pointed out that successful treatment depends on activation of the affective elements of the trauma memory.

Foa and Kozak further refined the concept of emotional processing (also see Rachman, 1980). These authors suggest that reducing fear depends on two conditions: (1) the fear-relevant information must be accessible in a manner that will activate the fear memory and thus be available for modification and (2) the available information must include elements that are incompatible with some of those that exist in the fear structure, so that a new memory can be formed. This new information, which is both cognitive and affective, has to be integrated into the evoked information structure for an emotional change to occur.

The problem is that the persistent use of the observer vantage point can prevent the “fear-relevant information” from becoming available for modification and, thus, impair emotional processing. The observer vantage point may limit access to information that produces anxiety—the experiential re-living properties of the traumatic experience (e.g., overpowering emotion, painful sensations, and fearful thoughts). By selectively guiding retrieval to non-threatening aspects of a situation, the observer vantage point may interfere with emotional engagement in the traumatic material. Thus, continued use of the observer vantage point during therapeutic recollection might interfere with emotional processing and a decrease in fear with exposure will not appear for these individuals. In other words, the short-

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2 Imaginal exposure is a therapeutic technique used in cognitive behavioral therapies to mentally re-invoke distressing memories of events that are difficult to reenact in real life.
term relief of emotional distress gained by adopting an observer vantage point in order to avoid threatening information may actually impede long-term recovery.

4.5 Summary

Anecdotal accounts and survey reports document the use of the observer vantage point in victims of traumatic experiences, some of whom go on to develop PTSD. By using a sample of people diagnosed with PTSD, it can be assured that such experiences are traumatic by definition and, thus, there will likely be a proportion of memories naturally generated from both the field and the observer points of view.

Current models of PTSD suggest that traumatically stressed individuals will attempt to decrease their re-experiencing symptoms by using behavioral and cognitive avoidance strategies. Consistent with earlier observations by Freud and these models of PTSD, the observer vantage point might operate as a cognitive avoidance strategy to reduce overwhelming emotions in traumatically stressed individuals. In this view, the observer vantage point, by guiding recall to those elements consistent with the observer's perspective, assists the individual in distancing from the event and influences which features of the event are remembered. The chronic use of the observer vantage point may interfere with the emotional processing of the event, and thus, possibly, lead to a poorer treatment prognosis.
CHAPTER 5: A CLINICAL INVESTIGATION OF VANTAGE POINT
IN EPISODIC MEMORY

5.1 Introduction

The laboratory experiment, described in Chapter 2, identified the qualities that characterize field and observer memories. Specifically, the field memories contained more affective responses, sensory properties, content reflecting the participants' mental state, associated ideas, and first-person accounts. In contrast, the observer memories had more information about spatial relations between objects, physical actions, personal appearance, and third-person accounts.

Some of the evidence reviewed in the previous chapter indicates people diagnosed with PTSD naturally take the observer perspective, the experiment presented below examines a group of patients with PTSD and uses the same criteria for evaluating their memories naturally recalled from one or the other perspective.

5.2 Method

5.2.1 Participants. Fifty-one participants (15 males, 36 females; mean age = 34 years; mean education = 14.2 years) who met DSM-IV diagnostic criteria for PTSD as measured by the Clinician Administered PTSD Scale (CAPS; Blake, Weathers, Nagy, Kaloupek, Charney, & Keane, 1997), and who were fluent in both written and spoken English, were recruited from two local PTSD treatment studies. The participants for the treatment studies were obtained through advertisements in the local newspaper and letters to general practitioners in the Greater Vancouver
region. Participants were excluded if they took medications prescribed for less than three months; underwent concurrent psychological treatment; had suicidal intent, organic brain disease, current substance abuse or dependence, a primary diagnosis other than PTSD, or current or past psychotic disorder. Most of the participants (n=38) were obtained from the Traumatic Stress Clinic; these participants were administered the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-IV; First, Spitzer, Gibbon, & Williams, 1997) to rule out other primary diagnoses and psychotic disorders. Twelve participants were obtained from the Health Psychology Clinic study on sexual assault-related PTSD; these participants were screened for the above exclusion criteria using a structured telephone interview that included specific diagnostic questions obtained from the SCID-IV. To be clear about how the inclusion and exclusion criteria were assessed, the CAPS was used to diagnose PTSD and the SCID-IV, or telephone interview, was used solely to assess the exclusion criteria.

Two participants declined to take part in the clinical experiment: one participant said she was too fatigued at the end of the CAPS, and the other indicated that she would find it too distressing to recollect her trauma.

5.2.2 Measures. There were two measures used to for diagnostic assessment. The first was the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-IV; First, Spitzer, Gibbon, & Williams, 1997). The SCID-IV is a well-established semi-structured interview for assessing Axis I disorders (anxiety disorders, mood disorders, eating disorders, substance abuse, etc.), and it includes a screen for psychotic symptoms. Trained interviewers, all of whom were research
assistants in the Traumatic Stress Clinic, administered the diagnostic interview. Interviewers had been trained in accordance with the guidelines set forth by the Traumatic Stress Clinic. In general, training involved watching an experienced interviewer for several participants, then conducting interviews under supervision and reviewing diagnostic ratings with the experienced interviewer.

The other diagnostic measure was the Clinician Administered PTSD Scale (CAPS; Blake, Weathers, Nagy, Kaloupek, Charney, & Keane, 1997). The CAPS is considered the most comprehensive structured interview for PTSD. The CAPS assesses both the frequency and the intensity of PTSD symptoms from each of the diagnostic symptom clusters (i.e., re-experiencing, avoidance and numbing, and hyperarousal). In addition to the 17 diagnostic items, the interview also contains items tapping social and occupational functioning, and associated symptoms of the posttraumatic stress response (e.g., guilt, homicidality, feelings of being overwhelmed). A conservative scoring criterion (i.e., symptoms rated 2 or above for frequency and 2 and above for intensity) was used to determine whether the symptom was diagnostic. PTSD severity is calculated by adding the frequency and intensity scores of the 17 diagnostic items. The CAPS has excellent test-retest reliability, very good internal consistency, and correlates highly with other measures of PTSD (Weathers, Blake, & Litz, 1991). Trained interviewers, using the training procedures outlined above for the SCID-IV, from the Traumatic Stress Clinic and Health Psychology Clinic sexual assault-related PTSD project administered the CAPS.
5.2.3 Procedure. Participants from the Traumatic Stress Clinic participated in two diagnostic testing sessions. The SCID-IV was administered in the first testing session that lasted approximately 2.5 hours. Provided the participants did not meet the exclusion criteria listed above, they were scheduled for a second testing session. The CAPS was administered in the second session that lasted approximately one hour. If the participant met criteria for PTSD, they were asked whether they would like to volunteer in a study assessing memories of traumatic events, and, provided they indicated interest, were given the consent forms for the study (see Appendix D).

Participants from the Health Psychology Clinic were screened for the exclusion criteria presented above by telephone interview. In the first session, the participants completed an interview assessing trauma-related appraisals. The CAPS was administered in the second session. Again, if the participant met criteria for PTSD, they were asked whether they would like to volunteer in a study assessing memories of traumatic events, and, provided they indicated interest, were given the consent forms for the study.

After completing the CAPS, patients were asked to recount their traumatic memories in a session lasting approximately 20 minutes. After listening to a brief description of the field and observer perspectives, patients specified which vantage point they tended to use during the recollection of their traumatic memories. If the patients indicated that they used primarily the field vantage point while remembering, they were asked to use this perspective for recall. If patients indicated that they tended to remember the traumatic experience from the observer
vantage point, they were instructed to use this point of view for recall. Patients were instructed to indicate if they switched vantage points while remembering. The verbatim instructions verbally administered to the patients were as follows:

People who have experienced a traumatic event often report unwanted memories of the experience, yet we know very little about the actual memories of trauma. In this part of the interview we are trying to understand what kinds of details people remember about their trauma. One thing we are looking at is the vantage point a person takes in their trauma memory. Some people report recollecting the traumatic event from a vantage point outside of his or her body like a spectator or an observer watching him- or herself in the remembered scene. Have you ever remembered the traumatic event this way, as if an observer? Or do you generally remember the [traumatic event] from your own eyes?

Field:
You said you generally remember the [traumatic event] from your own eyes. Now I would like you to describe your memory starting with the moment you first realized threat to when you realized the treat had ended. Do your best to describe your memory from your own eyes in as much detail as you can or feel comfortable with. If you switch to another point of view just let me know.

Observer:
You said you generally remember the [traumatic event] from the vantage point of an observer. Now I would like you to describe your memory starting with the first moment you realized threat to when you realized the threat had ended. Do your best to describe your memory from the observer's vantage point in as much detail as you can or feel comfortable with. If you switch to another point of view just let me know.

Patients were asked to spend as much time as they needed recalling—aloud and in as much detail as possible—their experiences of the original trauma, starting with the first moment they realized threat to when they thought that threat had ended. All of the patients' recollections were recorded on audiotape. The mean event age (the interval between the event and attempted recall) was 5.7 years (SD=5.3 years) for field memories and 6.1 years (SD=5.2 years) for observer
memories, a non-significant difference ($t<0.2$). There was also no significant difference in PTSD severity between the participants in the field and observer conditions (mean CAPS score = 68.1 vs. 78.5, respectively; $t(47) = 1.3$).

Following recall, patients completed the post-recall questionnaire described in section 3.2.3 and presented in Appendix E, which asked about the patient’s experience while remembering from one vantage point or the other. Briefly, the patients were asked to indicate how much emotion and detail they associated the memory, the strength and ease of recollecting from the chosen perspective, and how much they felt the point of view influenced their remembering. A seventh item was added which asked: (7) how much anxiety did you experience while recollecting? The response was recorded on 7-point scales, where 7 meant much anxiety and 1 signified little anxiety. The patients who endorsed having observer trauma memories were also asked to indicate when they began using that perspective for recall. The possible responses were: (a) during the trauma, (b) immediately after the trauma, (c) several days after the trauma, (d) weeks after trauma, and (e) years after the trauma.

The patients were provided a written account of the study’s aims and methods (the debriefing form is presented in Appendix F). They were also told that they may experience a possible increase in re-experiencing and hyperarousal symptoms because they had talked about their traumatic experiences, which they may have been avoiding. It was explained that recalling their trauma was a type of imaginal exposure, which is a technique often used in the treatment of trauma reactions to decrease flashbacks and nightmares. Finally, the assessor and the
patient developed a list of "self-care" strategies (e.g., taking baths, listening to soft music, taking quiet walks, etc.) to practice after leaving the session. The patients were then scheduled for their first treatment session.

Presented below is a diagram of the procedures involved in this experiment:

<table>
<thead>
<tr>
<th>Session 1</th>
<th>Consent</th>
<th>SCID-IV or Telephone Interview</th>
<th>Debriefing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Session 2</th>
<th>Consent</th>
<th>CAPS</th>
<th>Consent</th>
<th>Recall Instructions</th>
<th>Recall Questions</th>
<th>Debriefing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5.3 Results

5.3.1 Post-recall questionnaire. Thirty-one patients (63%) indicated that they remembered their trauma from the field perspective and 18 patients (37%) reported their trauma from the observer point of view.

Multivariate analysis (Hotelling's T-test) indicated significant differences between vantage points in patients' responses to the 7-item post-recall questionnaire ($F (7, 41) = 11.61, p < .01$). To isolate these differences, follow-up t-tests were conducted using a Bonferroni-adjusted alpha of .01 (i.e., .10/7).

By their own account, patients rated field trauma memories as more emotional (mean ratings = 5.6 vs. 2.6, $t(47) = 8.7$) and anxiety-provoking (means = 5.0 vs. 3.5, $t(47) = 3.4$) than observer trauma memories. However, no significant
difference emerged between field and observer vantage points in (a) the perceived richness of detail (means = 5.2 vs. 5.7, t(47) = 1.4), (b) how long they were maintained over the course of recall (mean total-time percentages = 87% vs. 84%; t(47) = .9), (c) how strongly they were held (mean ratings = 6.2 vs. 5.7; t(47) = 2.0), (d) the ease with which they were held (mean ratings = 1.8 vs. 1.9, t(47) = .4), and (e) the degree to which the participants perceived an influence over recall (mean rating = 5.6 vs. 5.5; t(47) = .2). Of the 18 participants recalling their trauma from the observer perspective, 7 reported that they had used the observer vantage point during the traumatic event, 3 said they began recalling their trauma from the observer point of view immediately after the event, 3 said it was several days after the event, none said it was a week after the event, and 5 said that they did not begin remembering the trauma from the observer vantage point until several years after the event. These results are presented in Figure 1.

5.3.2 Coding and analysis of recollections. A verbatim transcript was prepared of each patient's tape-recorded recollections, and the total number of words was calculated by computer program. The segments in which the participant indicated they switched perspectives from their primary vantage point were excluded from analysis; none of the segments were longer than 120 words. No significant difference emerged between the length of the field and observer transcripts (means = 826 words vs. 630 words; t(47) = 1.2, p = .22); the typical transcript contained 730 words. There were no gender differences in the proportions of field or observer memories.
Figure 1. Number of observer memories initiated at different time points.
Each transcript was coded according to 11 categories by the experimenter and a trained assistant was blind to recall condition and study hypotheses (intercoder reliability > .85). The fine-detail category was dropped from the analysis because it proved too difficult to code consistently. There were no statements of associated ideas or third-person singular account in the observer memories, as found in the laboratory experiment, thus, these categories were not included in the analysis. The remaining eight categories were defined the same as in the first experiment, the examples were changed to reflect trauma-related content:

1. **affective reactions**, whether emotional or motivational in nature (e.g., I felt horrified during it all; I was incredibly afraid; he was intensely angry);

2. **physical sensations** from any sensory modality (e.g., the blood tasted like sand; there was a lot of pain in my arm; I could hear the sirens);

3. **psychological states** (e.g., I wondered when it would end; I was confused about what to do; I knew he would kill me; I realized she was dead);

4. **self-observations** (e.g., I can see myself running upstairs; I can see the car from above and I’m in it);

5. **physical actions** made in the course of the traumatic event (e.g., He shot me in the face; I ran out the door; He beat me with the tire iron);

6. **spatial relations** between objects relative to other objects or between the patients themselves (e.g., the gun was above his head; the girl’s body was to the left of the kitchen table).

7. **first-person accounts** are the number of first person singular pronouns (i.e., I, myself).
(8) peripheral detail not related to the focal trauma (i.e., those not in direct contact with the person) (e.g., there were masks on the wall [patient being beaten by her mother]; there were clouds in the sky [pedestrian struck by a motor vehicle]).

The total number of statements in each category was calculated for each patient, and the resulting data were then averaged over patients to yield the mean frequencies shown in Table 2.

The data were screened and frequency scores exceeding 3.5 standard deviations from the mean were classified as outliers. Prior to the multivariate analysis, six potential outliers were found randomly distributed across participants and memory content categories. Specifically, five different participants' data contained an outlier in a memory content category; only one participant contained two outliers. The distribution of outliers are as follows: one was in self observation, two were in physical sensations, one in spatial relations, one in affective reactions, and one in first person accounts. Because deleting these outliers had a negligible effect on the significance tests and means, these cases were retained to maintain the generalizability of the results.

A Hotelling's T-test was performed between the field and observer conditions with eight dependent variables. The multivariate effect was significant, $F(8,40) = 10.4, p < .01$, and supplemental t-tests were carried out using a Bonferroni-adjusted alpha of .01 (i.e., .10/8).

As is apparent in Table 2, field memories contained more statements about affective reactions, physical sensations, and psychological states than the observer memories. In contrast, observer memories contained more statements about
Table 2

Mean Number of Statements in 10 Memory Content Categories as a Function of Vantage Point in Trauma Memories

<table>
<thead>
<tr>
<th>Content Category</th>
<th>F (n=31)</th>
<th>O (n=18)</th>
<th>F-O</th>
<th>t(47)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affective Reactions</td>
<td>9.5 (8.9)</td>
<td>2.9 (2.8)</td>
<td>6.6</td>
<td>3.76*</td>
</tr>
<tr>
<td>Physical Sensations</td>
<td>5.7 (6.7)</td>
<td>1.5 (2.6)</td>
<td>4.2</td>
<td>3.11*</td>
</tr>
<tr>
<td>Psychological States</td>
<td>10.2 (7.7)</td>
<td>3.0 (3.6)</td>
<td>7.2</td>
<td>4.40*</td>
</tr>
<tr>
<td>Associated Ideas</td>
<td>0.0 (0)</td>
<td>0.0 (0)</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>First-Person Accounts</td>
<td>53.0 (32.6)</td>
<td>38.1 (24.0)</td>
<td>14.9</td>
<td>1.68</td>
</tr>
<tr>
<td>Self-observation</td>
<td>0.0 (0)</td>
<td>2.0 (2.5)</td>
<td>-2.0</td>
<td>3.34*</td>
</tr>
<tr>
<td>Physical Actions</td>
<td>26.4 (15.3)</td>
<td>27.7 (19.0)</td>
<td>-1.3</td>
<td>0.26</td>
</tr>
<tr>
<td>Spatial Relations</td>
<td>10.5 (6.7)</td>
<td>19.0 (12.3)</td>
<td>-8.5</td>
<td>3.36*</td>
</tr>
<tr>
<td>Third-Person Accounts</td>
<td>0.0 (0)</td>
<td>0.0 (0)</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>Peripheral Details</td>
<td>0.5 (1.1)</td>
<td>2.4 (2.03)</td>
<td>-2.0</td>
<td>3.74*</td>
</tr>
</tbody>
</table>

Note. Standard deviations appear in parentheses. Asterisks denote comparisons, made using independent-sample t-tests that were significant at a Bonferroni-corrected alpha of .01. The column labeled as F-O represents the difference scores between the means of field and observer memories.
spatial relations between objects and the patients themselves, more self-observations, and peripheral details. Field and observer memories did not differ reliably in the number of statements about physical actions.

5.4 Discussion

The first study showed experimentally defined and designated vantage points influence the retrieval of events that had been encoded in a controlled laboratory situation. In that study, individuals had no emotional attachment to the to-be-remembered events (i.e., the circumstances surrounding the performance of a series of manual tasks) and the perspective they took during recollection was not volitionally determined. And, while the predicted results were obtained, one could question the extent to which demand characteristics played some role in the pattern of results.

In contrast, the second study examined the effects of vantage point on an individual's recollection of a specific event in their personal past--an event they chose to describe--a traumatic event, in which they were emotionally invested. Instead of being assigned experimentally to either the field or observer condition, participants in the second study were free to select the perspective for recollecting this memory; in this case, instructions merely asked them to maintain whichever perspective they chose. Despite these methodological differences, the results of the two studies were strikingly similar. Paralleling the results of the first (laboratory) study, field memories retrieved in the second (clinical) study included more information about affective reactions, physical sensations, and psychological states that patients experienced as they crashed their car, were sexually assaulted, or
physically beaten. And again, in observer memories, patients witnessed themselves in the scene (although with less physical description) and included more statements about where objects were located than in field memories. These findings replicate across the two experiments and cannot be due to demand characteristics.

It was also observed that the students and PTSD patients who recollected from the observer vantage point tended to use a more journalistic style of reporting their experience—their tone was unemotional and flat, as if just reporting the facts. The students and patients who recollected from the field perspective appeared to talk more loudly and in a manner that was more narrative in style, with emotionality and a great deal of inflection. Examples of statements of each memory content category made from the students and the PTSD patients are presented in Appendix G.

There were some findings that differed between experiments. Unlike the first experiment, the second experiment supported the hypothesis that observer memories would contain more peripheral details. Also in the second experiment, the field and observer trauma memories contained the same number of actions and neither type of memory contained associated ideas or a reversion to a third-person account. Given that trauma is an event that usually entails considerable action that cause the person harm (or someone s/he witnesses being harmed), the lack of this difference in action content between the two kinds of memories is more likely a function of the type of experience rather than the difference between manipulated and naturally occurring vantage points. By the same view, trauma is intense and
draws one's attention toward the offending acts. Therefore, it is possible that the lack of associated ideas is due to a focus on survival goals by the trauma victim, as well as limited cognitive capacity to divert attention to memories gained outside the current experience. As for reversion to the third-person account found in the laboratory experiment, this could have been a mental strategy evoked by undergraduate students to better enable them to follow the instructions, therefore this finding may be due to the experimental demand of the situation.

With regard to the participants' subjective experience of each vantage point during memory retrieval, the field memories were again experienced with more emotion, and in this case, more anxiety. Again, there was no reliable difference in terms of how long they were maintained during recall, how strongly they were held, or the degree to which they were perceived to influence recall. However, the PTSD patients found both vantage points to be equally detailed and held with the same degree of ease. To remind the reader, in the laboratory experiment the students found the field perspective slightly easier to hold than the observer perspective. Given that in the second experiment the use of vantage point was dictated by the patients' own accord, rather than requested by the experimenter, it was presumably equally easy to adopt the perspectives because the point of view was adopted by their own choosing.

Regarding the patients with observer memories, sixteen out of the eighteen patients indicated that they adopted the observer vantage point to avoid the terror of experiencing (i.e., during the trauma) or recollecting (i.e., following the trauma) the traumatic event from their own eyes. These admissions, and the finding that the
observer memories are associated with less anxiety and contain less emotional content (see Table 2), suggest that indeed the observer perspective may be operating as a cognitive avoidance strategy. The fact that all 18 patients had PTSD indicates this cognitive strategy is not necessarily beneficial to a healthy outcome. As for those patients who used the field vantage point to recollect their traumatic experience, it is unknown why they selected this perspective, given that the observer vantage point possibly provides more emotional relief.

Among the patients who spontaneously took the observer perspective, most did so either at the time the event took place or several years later (see Figure 1). It is interesting to note that those patients who adopted the observer perspective after the traumatic event indicated that they did so under stressful situations, such as during a criminal trial. In such cases, the trauma survivors may not only be adopting the observer perspective for emotional relief, but also to recollect the physical context of the crime scene to describe to the police or the court of law. As found by Nigro and Neisser (1983), with such a purpose in mind, recollection would be more often guided by the observer vantage point.

There were seven general types of traumas reported by the PTSD patients, including motor vehicle accident (n=16), physical assault (n=17), sexual assault (n=11), war (n=2), homicide (n=2), and witnessing harm to another person (n=2). As illustrated in Figure 2, field memories were more common in six of the seven trauma types; this trend reversed for sexual assault, in which observer memories were slightly more prevalent. Due to the small number of participants representing each unique combination of trauma type and vantage point, a formal comparison of
the contents of field versus observer memories across trauma types is not possible. However, visual inspection of Table 3—which contrasts a trauma type with more field memories (physical assault) and trauma type with more observer memories (sexual assault)—suggests that the pattern of content differences found between the two vantage points is similar for both trauma types.
Figure 2. Frequency of field and observer memories by trauma type.
Table 3

Comparison of Memory Content for Physical and Sexual assault as a Function of Vantage Point

<table>
<thead>
<tr>
<th>Content Category</th>
<th>Physical Assault</th>
<th>Sexual Assault</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F (n=11)</td>
<td>O (n=6)</td>
</tr>
<tr>
<td>Affective Reactions</td>
<td>11.0 (9.9)</td>
<td>2.8 (2.3)</td>
</tr>
<tr>
<td>Physical Sensations</td>
<td>5.5 (6.0)</td>
<td>1.5 (1.4)</td>
</tr>
<tr>
<td>Psychological States</td>
<td>11.6 (9.6)</td>
<td>2.7 (1.6)</td>
</tr>
<tr>
<td>Self-observation</td>
<td>0.0 (0)</td>
<td>3.0 (3.5)</td>
</tr>
<tr>
<td>Physical Actions</td>
<td>29.8 (15.9)</td>
<td>23.3 (6.2)</td>
</tr>
<tr>
<td>Spatial Relations</td>
<td>8.9 (3.6)</td>
<td>15.0 (4.0)</td>
</tr>
<tr>
<td>First-Person Accounts</td>
<td>57.3 (32.8)</td>
<td>33.3 (10.9)</td>
</tr>
<tr>
<td>Peripheral Details</td>
<td>0.6 (1.2)</td>
<td>2.0 (1.9)</td>
</tr>
</tbody>
</table>

Note. F represents the field condition and O represents the observer condition.
CHAPTER 6: GENERAL DISCUSSION

The dissertation addressed the question: does the selection of a particular mental vantage point (either field or observer) influence the content of one's memory for personally experienced events? The first study provided an instructional manipulation of vantage point during recall using a controlled encoding situation in a laboratory setting. The second study was designed to validate the results found in the first experiment by using a sample of participants who naturally use both perspectives while retrieving memories of traumatic experiences. In both studies, the influence on memory content was very similar. For instance, field memories afforded richer accounts of the affective reactions, physical sensations, and psychological states that the participants experienced. In contrast, observer memories included more information about self-observations and the spatial relations of objects, and were experienced as less emotional and anxiety-provoking than were field memories. The effect of vantage point on the experience of retrieval was also very similar in both studies. These similarities suggest that the field/observer differences detected in the laboratory investigation arose not as a byproduct of implicit experimental demand, but rather as a consequence of the particular vantage point participants adopted during recollection.

Older theories of mind suggest that memory is a static phenomenon, that a trace or record is stored in an unaltered form and recalled as an unmodifiable atomic entity (see Roediger, 1980). However, more recent theories view memory retrieval not as a neutral enterprise, but rather as an active, reconstructive process
(Bell & Winn, 2000; Elman, 1998). Neisser (1967) illustrates the reconstructive process in memory in the following analogy:

The [memory] traces are not simply 'revived' or 'reactivated' in recall; instead, the stored fragments are used as information to support a new construction. It is as if the bone fragments used by the paleontologist did not appear in the model he builds at all—as indeed they need not, if it is to represent a fully fleshed out, skin-covered dinosaur. The bones can be thought of, somewhat loosely, as the remnants of the structure which created and supported the original dinosaur, and thus of sources of information about how to reconstruct it (pp. 285-286).

Current theories suggest that memories are constructed from multiple attributes and that an episodic memory is a product of the re-activation of these multiple attributes that combine to yield the actual memory (Tulving, 1998). The research presented in this dissertation supports the view of memory as an active reconstructive process.

Another idea in cognitive theory is that the more similar the retrieval conditions are to those at encoding, the better the recall performance (i.e., the encoding specificity principle; Tulving & Thompson, 1973), so one way to improve recall performance is to reinstate a similar context. Vantage point may serve as a type of retrieval cue—a cognitive strategy that mentally reinstates the context, a retrieval cue that can get to different aspects of the episode (for a review of the
encoding specificity principle construed within a PTSD framework, see Brewin, 2001).

In line with these ideas, one avenue of cognitive research would be to explore the neural mechanisms that mediate retrieval from the two vantage points. For example, the observer memories are associated with spatial relationships and in some cases action, such aspects are in part mediated by the parietal and frontal cortical areas. In contrast, the field memories are associated with sensory, emotional, and motivational states, such aspects are mediated by primary sensory cortices, the amygdala and other limbic structures. Therefore, it is possible that the observer and field memories are partially mediated by different neural substrates.

Another promising avenue for future research relates to the idea that the observer vantage point is a process that affords some level of mental flexibility. It would be of interest to know whether particular personality or cognitive styles are associated with adopting one perspective over the other.

The present results have important potential implications for both forensic and clinical practice. Regarding the former, police investigators routinely administer to crime eyewitnesses the Cognitive Interview—a four-part protocol designed to elicit detailed information through different types of memory instructions (see Geiselman, 1999). One part of the interview asks witnesses to describe the crime from an observer vantage point. Though the Cognitive Interview has been shown to yield significantly more information than standard methods of witness interrogation (Fisher, Geiselman, & Amador, 1989; Geiselman, Fisher, MacKinnon, & Hollon,
1986), the contents or characteristics of this extra information have not yet been explored.

In light of the results reported here, it may be that some of the memorial advantage of the Cognitive Interview over standard interrogation methods lies in the improved recall of information specifically related to the witness' appearance, actions, spatial layout of the area, and other physical details of the remembered scene that are salient from an observer vantage point. If so, this would be of considerable value to police investigators, who prize precise recollections of physical details over an eyewitness' retrospective accounts of his or her emotional reactions or psychological states—information that is especially accessible from the field perspective. Moreover, the results suggest that memories retrieved from either vantage point are equally accurate: when tested for recall only minutes after completing a series of manual tasks, observer-condition participants made no memory errors while their field-condition counterparts made a total of only two. An interesting issue for future research is whether this equality holds even when the overall error rate increases, as it surely would if the retention interval were lengthened to several hours or even days.

Concerning clinical implications, the use of the observer vantage point has been noted in a number of psychiatric populations, including those with post-traumatic stress disorder (Foa & Rothbaum, 1998), as demonstrated above, and social phobia (Clark & Wells, 1995). In PTSD, which is precipitated by extreme distress experienced during a traumatic event, taking an observer vantage point may serve to distance the individual from the event, especially its overwhelming
emotional aspects. Given that observer memories are experienced as less emotional and contain less phenomenological content than field memories, adopting an observer vantage point when recalling traumatic events may offer a sense of emotional relief, thereby reinforcing the use of this perspective during subsequent recollections (i.e., a cognitive avoidance strategy). Current theories of PTSD treatment, however, suggest that emotional engagement during recollection is essential for the effective resolution of traumatic experiences (Foa & Hearst-Ikeda, 1996; Foa & Kozak, 1986; Rachman, 1980). Thus, by muting emotional engagement, chronic use of the observer vantage point may have the unintended, and unfortunate, consequence of impeding clinical progress and trauma recovery.

Use of the observer vantage point by socially phobic individuals offers another glimpse into the possible functions this cognitive strategy may serve. Clark and Wells (1995) note that socially anxious people often conduct a “post-mortem” review of their social performance from an observer’s perspective. The authors suggest that a socially phobic person uses the observer vantage point to reflect on their social exchange in order to gain more information about their performance, and that the information gained from this perspective is often greatly distorted in a way that confirms their feared outcome. For example, a highly socially anxious person will envision their face as huge, bright red, with rivulets of sweat. It is also possible that by focusing on one’s imagined external appearance, the use of the observer vantage point reduces emotional distress by diverting attention away from the internal bodily sensations of anxiety (again, an anxiety management strategy).
It would be of interest to examine whether similar differences in memory content arise in the field and observer memories of socially phobic individuals.

Finally, of conceptual interest, the observer vantage point may be regarded as the cognitive component in the dissociative symptom of depersonalization. Reiterating the previous discussion in section 4.4, depersonalization can be thought of as consisting of two parts: an affective component (i.e., the feeling of detachment from the body) and a cognitive component (i.e., the mental perspective of viewing oneself from a vantage point outside of the body). Depersonalization during a traumatic experience has been shown to be an important predictor of PTSD (Harvey & Bryant, 1999). Future research may wish to consider whether one component or the other has greater predictive value in the development of PTSD.

Regarding the limitations of the present research, one area in need of further investigation is the switching that happens between field and observer vantage points in memories of traumatic experiences. In the clinical study, patients indicated when they switched from the primary perspective in order to code only those segments associated with the primary vantage point. To get a better idea of when and why these switches occur, it would be advantageous to devise a coding scheme to identify precisely when patients switch (i.e., prior to highly emotional segments) and a self-report measure to assess the patients' perceptions of why they switched at that point in recall.

It would have also been of interest to assess how the trauma survivors felt about the original event, in addition to how they felt at retrieval (cf. Robinson & Swanson, 1993). Field memories were felt to be more emotionally rich than
observer memories during retrieval, but does the vantage point during memory retrieval influence the emotional richness ascribed to the original traumatic event as well? This question was left unanswered.

Initially, the clinical study was designed to include participants with acute stress disorder, in which the interval between the trauma and diagnosis is shorter than for PTSD. Use of such a sample would decrease the interval between the event and recall, and thus reduce the possibility of contamination of the memory over time (i.e., natural decay, repeated verbalizations, etc.). Despite great effort, it proved too difficult to obtain this sample for the present study. Future studies may be in a better position (e.g., working with a crisis hotline which supports research activities) to recruit this elusive population and test whether the same differences in memory content across vantage points occur.

Finally, a between-subjects design was used to assess differences in the contents of field and observer memories. Given that prior research has shown that most people use both vantage points for recollection (Nigro & Neisser, 1983; Robinson & Swanson, 1993), a laboratory experiment employing a within-subjects design could have been utilized to gain more power. Trauma survivors often have repeated instances of victimization, which might also lend itself to a within-subjects design. Though it should be noted that there are inherent cautions in using repeated instances of similar memory types, such as the effects of proactive and retroactive interference.

To summarize the contributions of this dissertation research, it was demonstrated that vantage point influences the kinds of information a person
remembers during the retrieval process. Prior research has demonstrated that schematized roles (Anderson, Pichert, & Shirey, 1983) and moods affect memory content (Eich, 1995). This is the first study to empirically demonstrate that another retrieval process—vantage point—alters the recollection of personal experiences. Furthermore, in cognitive psychology there has been a burgeoning interest in the rememberer's experience of the recollective process (see Schacter, 1997; Tulving, 1983; Wheeler, Stuss, & Tulving, 1997; Wheeler, 2000). The present research has shown that field and observer memories are experienced with varying levels of emotion during retrieval. It thus adds to prior research showing that switching from the field to the observer vantage point influences the emotional intensity of the original and remembered event during recall (Robinson & Swanson, 1993). Within the domain of clinical psychology, this is the first study to systematically examine a variable previously observed in the memories of trauma survivors. It is also the first to assess this variable's impact on traumatic memory content and suggest how such an impact may bear on the treatment of posttraumatic stress responses. In simple terms, the present research has shown that the perspective that we adopt in our attempts to remember our personal experiences—as an active participant or a passive observer—matters both for what we remember and how we feel about our past. Such work revitalizes and gives empirical substance to the old Freudian concept of field and observer memories—not only by quantifying these memory types but also by bringing them under experimental control. The stage is set for future research into the consequences of adopting different vantage points in the clinical, cognitive, and forensic arena.
REFERENCES


## APPENDIX

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<td>C. Laboratory Experiment Debriefing Form</td>
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Appendix A: Laboratory Experiment Consent Form

Consent Form

Title of Project: Vantage Point in Memory

Subj. No. __________

Principal Investigator: Dr. Peter Graf, UBC Department of Psychology, Telephone: 822-6635.
Co-Investigator: Heather McIsaac, UBC Department of Psychology, Telephone: 822-2140.

Project Description: When recollecting an event the rememberer may do so either from a vantage point inside the event, as if re-living the event again, or in a more detached manner, like an outside observer or spectator of the event. These two types of memory retrieval give rise to field and observer memories, respectively. We are trying to understand the properties of these two types of memories by having you complete a series of tasks in our laboratory. First, you will participate in a number of activities such as playing with play dough and shooting basketballs. Then we will go into another room and we will ask you to describe to the best of your ability exactly what you remember about performing the laboratory tasks. We will audiotape this last part of the task. This research project is part of Heather McIsaac’s doctoral dissertation.

Confidentiality: The information you provide is confidential. Your responses will be coded and your name removed from all material. The audiotapes of your responses will be kept in a laboratory cabinet accessible to only the investigators.

Time required: This experiment will take about 60 minutes and you will be given 1 course credit point for your participation.

Benefits: The time and information you provide will benefit scientific research. You will be provided information at the end of the experiment so you can learn about this specific function of memory retrieval that is under investigation.

Right to refusal: You have the right to withdraw from participation at any time throughout the study without explanation. There will be no consequences from your refusal to participate. Your participation is entirely voluntary. If you decide to participate, you are free to decline from answering any question, and may terminate at any time.

Inquiries: If you have any inquiries about the experiment please do not hesitate to call Heather McIsaac (822-2140) or Dr. P. Graf (822-6635). If you have any concerns about your rights or treatment as a research participant you may contact Dr. Richard Spratley, Director of the UBC Office of Research Services at 822-8598.

If you agree to participate in this study, please complete the following:
I feel that I have sufficient understanding of the study and its methods in order to make a decision regarding consent to participate. My signature on this form indicates my consent to participate in this study and that I have received a copy of the consent form.

Signature: ___________________________ Date: ________________

Name (print): ___________________________
Appendix B: Laboratory Post-recall questionnaire

Vantage Point Recall Questionnaire

1. Circle the vantage point you recalled your memory of the traumatic event from:

   Own Eyes / Observer

2. What percentage of the time were you able to maintain the vantage point during your recollection of the tasks?

   CIRCLE:

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Continuously</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 10 20 30 40 50 60 70 80 90 100</td>
<td></td>
</tr>
</tbody>
</table>

3. On the scale provided below indicate the strength of the vantage point maintained during your recollection.

   Neutral | Vantage Point
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>

4. How easy was it to maintain this vantage point while recollecting?

   Very Easy | Very Hard
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>
5. How strongly were you influenced by this vantage point when recollecting?

<table>
<thead>
<tr>
<th>Not at All Influenced</th>
<th>Moderately Influenced</th>
<th>Strongly Influenced</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. Rate how rich in emotion did the memory feel as you recalled it from the vantage point you used to describe the tasks.

<table>
<thead>
<tr>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<tr>
<td>3</td>
<td>4</td>
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<tr>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

7. Rate how rich in detail was the memory from that vantage point you used to describe the tasks.

<table>
<thead>
<tr>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
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<tr>
<td>3</td>
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<td>5</td>
<td>6</td>
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<td>7</td>
<td></td>
</tr>
</tbody>
</table>
Appendix C: Laboratory Experiment Debriefing Form

Vantage Point in Memory: Debriefing Form

Thank you for taking part in this experiment which is looking at vantage point in memory, the fact that when recollecting an event, we may do so either from a vantage point inside the event, as if reliving the event again, or we may experience it in a more detached manner, like an outside observer or spectator of the event. These two types of memory retrieval yield field and observer memories, respectively. The goal of the present experiment is to empirically establish criteria that reliably differentiate between field and observer memories. The way we are doing this is to examine your report of how you performed the laboratory tasks when you were instructed to adopt a field or observer vantage point and we are looking for cues or information that are different between field and observer memories, to tell the two vantage points apart. Previous research has suggested that an observer memory may yield more statements containing overview information and physical details of the scene, whereas, field memories may contain more statements about subjective states. The independent variable is the vantage point adopted to retrieve the memory and the dependent variable is the type of information yielded from each vantage point. A second goal is to validate these criteria, established from the differences found between the two memories, by showing that some people will adopt one type of memory more than another.

In addition to providing new information about how memory works, vantage point in memory may have application to other fields of study such as forensic and clinical psychology. If the observer memory does in fact yield more overview information and details it might be helpful to have witnesses of a crime adopt this vantage point when recalling memories about the crime. In fact, there is an investigative tool that has already incorporated the technique of switching to an observer vantage point and experimental data is being gathered to assess the efficacy of using this technique. In clinical psychology, people who have experienced a traumatic event may experience a relief of distress by switching from a field memory (as if directly re-experiencing it again) to an observer memory (a more detached distant perspective). This study was designed to help us understand a mechanism of memory that has received very little scientific investigation but may have broad practical applications.

We are very grateful for your participation in this study. If you have any queries, please feel free to contact Heather McIsaac at 822-2140. If you leave a message, we will return your call. If you are interested in the subject of memory and would like to read a little more about it, we recommend the following article:


Thank you once again for your participation!
Appendix D: Clinical Experiment Consent Form

Consent Form

Title of Project: Vantage Point in Memory
Principal Investigator: Dr. Eric Eich, UBC Department of Psychology, Telephone: 822-3078.

Project Description: When recollecting an event the rememberer may do so either from a vantage point inside the event, as if re-living the event again, or in a more detached manner, like an outside observer or spectator of the event. These two types of memory retrieval give rise to field and observer memories, respectively. We are trying to understand the properties of these two types of memories by having you describe your traumatic experience from the field or observer vantage point, depending on which you experience. Knowing more about the effect of vantage point on traumatic memory will aid in assessment and treatment of posttraumatic stress disorder. This portion of the assessment interview is part of Heather McIsaac’s doctoral dissertation.

Confidentiality: The information you provide is confidential. Your responses will be coded and your name removed from all material. The audiotapes of your responses will be kept in a laboratory cabinet accessible to only the investigators.

Time required: For patients, this part of the assessment interview will take approximately 25 minutes. For students, the interview will take approximately 45 minutes.

Benefits: The time and information you provide will benefit scientific research. You will be provided information at the end of your treatment so you can learn about this specific function of memory retrieval that is under investigation. Students will receive 1 participation credit point.

Right to refusal: You have the right to refuse to participate or withdraw at any time without jeopardizing the treatment you may receive or the opportunity to participate in future research.

Inquiries: If you have any inquires about this portion of the assessment interview please do not hesitate to call Dr. E. Eich (822-3078). If you have any concerns about your rights as a research participant you may contact Dr. Richard Spratley, Director of the UBC Office of Research Services at 822-8598.

If you agree to participate in this study, please complete the following:
I feel that I have sufficient understanding of the study and its methods in order to make a decision regarding consent to participate. My signature on this form indicates my consent to participate in this study and that I have received a copy of the consent form.

Signature: ____________________________ Date: ________________
Witness: ____________________________ Date: ________________
Consent Form for Audiotaping

Audiotaping: I, the undersigned, understand for assessment and research purposes information may be tape recorded. I understand that the information I provide on tape will be held in the strictest confidence by the researchers and therapists involved in this assessment and treatment program. I understand that the tapes will be kept in a locked file cabinet and access will be limited to the researchers involved in this project.

I consent to the audiotaping of my interview.

__________________________________________
Participant Signature Date

__________________________________________
Witness Signature Date
Appendix E: Clinical Experiment Post-recall Questionnaire

Vantage Point Recall Questionnaire

1. Circle the vantage point you recalled your memory of the traumatic event from:

Own Eyes / Observer

2. What percentage of the time were you able to maintain the vantage point during your recollection of the traumatic event?

CIRCLE:

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Continuously</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 10 20 30 40 50 60 70 80 90 100</td>
<td></td>
</tr>
</tbody>
</table>

3. On the scale provided below indicate the strength of the vantage point maintained during your recollection.

Neutral Vantage Point

| 1 2 3 4 5 6 7 |

4. How easy was it to maintain this vantage point while recollecting?

Very Easy Very Hard

| 1 2 3 4 5 6 7 |
5. How strongly were you influenced by this vantage point when recollecting?

Not at All Influenced  Moderately Influenced  Strongly Influenced

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

6. Rate how rich in emotion did the memory feel as you recalled it from the vantage point you used to describe the traumatic event.

Low  High

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

7. Rate how rich in detail was the memory from that vantage point you used to describe the traumatic event.

Low  High

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

8. How much anxiety or distress did you experience while you described your memory of the traumatic event to me?

None  Moderate  Maximum Amount

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
9. If you described your memory from the **observer vantage point**, when did you first recall your memory of the event from that perspective?

**CIRCLE:**

a. During traumatic event  
b. Immediately after the traumatic event  
c. Several days after the traumatic event  
d. Over a week after the traumatic event  
e. Several years after the traumatic event
Thank you for taking part in this section of the interview, which is looking at vantage point in memory, the fact that when recollecting an event, we may do so either from a vantage point inside the event, as if re-living the event again, or we may experience it in a more detached manner, like an outside observer or spectator of the event. These two types of memory retrieval yield field and observer memories, respectively. Some people who experience traumatic stress naturally adopt an observer vantage point to re-view their memories. We know very little about why people use this vantage point (i.e., out-of-body perspective) during the recollection of traumatic events or how it effects a person’s memory of the event. Previous research with undergraduate students has suggested that observer memories contain more information about the actions that take place in the memory and spatial relationships of objects and people in the remembered scene. This is in contrast to field memories, which have been shown to contain more emotional, sensory, and mental state (internal thoughts) information than observer memories. In addition, observer memories have been rated as less emotional than field memories. We are interested in assessing how vantage point influences memory during the recollection of traumatic experiences since people with posttraumatic stress disorder naturally use this vantage point. In addition to providing information about how memory works, understanding how vantage point operates during memory retrieval for traumatic experiences may have important implications for treatment. This study was designed to help us understand a mechanism of memory, which has received very little scientific investigation but may have broad clinical implications.

We are very grateful for your participation. If you have any queries about this portion of the study, please feel free to contact Heather McLsaac at 822-8040. If you leave a message we will return your call. If you are interested in the subject of memory and would like to read a little more about it, we recommend the following book:

# Appendix G: Examples of Memory Content Reported across Groups

<table>
<thead>
<tr>
<th>Memory Content</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affective Reactions</td>
<td></td>
</tr>
<tr>
<td><strong>Students</strong></td>
<td>I started getting <strong>frustrated</strong> at the end, it was <strong>disconcerting</strong> not doing it right. I was <strong>happy</strong> playing with the clay. I felt really <strong>calm</strong>.</td>
</tr>
<tr>
<td><strong>PTSD Patients</strong></td>
<td>I started feeling <strong>scared</strong>. I was just <strong>freaking</strong> and <strong>terrified</strong>. I was <strong>surprised</strong> he actually shot me. I feel <strong>extremely helpless</strong>.</td>
</tr>
<tr>
<td>Physical Sensations</td>
<td></td>
</tr>
<tr>
<td><strong>Students</strong></td>
<td>The fur felt <strong>soft</strong>. I remember the <strong>salty</strong> smell of it. The basketball was all like <strong>light</strong> and <strong>squishy</strong>. The air from the heater is really <strong>hot</strong>.</td>
</tr>
<tr>
<td><strong>PTSD Patients</strong></td>
<td>My stomach <strong>hurt</strong>, the <strong>pain is intense</strong>. I could <strong>smell</strong> the <strong>alcohol</strong> over the fuel and oil. I remember <strong>hearing the tires squealing</strong>. I'm <strong>cold and shivery</strong> so it's the wind blowing on my face.</td>
</tr>
<tr>
<td>Psychological States</td>
<td></td>
</tr>
<tr>
<td><strong>Students</strong></td>
<td>I was sort of <strong>wondering</strong> what I should make. I was <strong>deciding</strong> how much it weighed. I <strong>noticed</strong> the fur was dark in parts.</td>
</tr>
<tr>
<td><strong>PTSD Patients</strong></td>
<td>My head was <strong>foggy and confused</strong>. I <strong>noticed</strong> she stopped breathing and <strong>realized</strong></td>
</tr>
</tbody>
</table>
she was dead. I wondered when it would be over.

Associated Ideas

Students

I thought of the Velveteen Rabbit—it reminded me of, I have a rabbit at home, and it felt just like the rabbit at home. Doing the folding, I remember thinking about my good friend who is very good at origami, she's in third year microbiology and she's like really cool and I really want to follow in her steps cause she's doing lots of stuff I want to do and I think she's a good example.

Self-observation

Students

I don't see my face 'cause I'm sort of hunched over, I just kind of see the hands fiddling around with the Play Doh. I see myself telling you, it looks like I'm saying 30 grams because I can see myself saying something.

PTSD Patients

I can see myself against the wall...I can see my top is still on. I was watching outside myself, seeing me hit in my car. I see myself doing that from the standing position.

Physical Actions

Students

I was lifting the book. I was shooting the ball and then walked over to the chair. Folding the paper.

PTSD Patients

I ran from him. My father is hitting me with the baseball bat. He was shoving my shoulders down, gripping my shoulders really tight.
## Spatial Relations

**Students**
And there was a chalkboard on the left-hand side. I moved counterclockwise over to the last side of the table. It was kind of off to the side of me.

**PTSD Patients**
My brother was looking at me but you know pieces of his head on the carpet and on the bed, my father must have been standing 5 to 10 feet away from him, shot him, and just dropped the rifle cause it was right there. I turned right onto the on ramp and then there were several cars on my left.

## Fine Details

**Students**
There was a small, a really thin book within a 10-inch area. There were three jars of Play Doh. The folder was blue and weighed about five kilograms.

## Peripheral Details

**Students**
There was wrapping paper on the shelf. There were posters on the wall of African women. I remember there was a board on the shelf and then the file cabinets there was some interesting labels. A pop can by the computer.

**PTSD Patients**
I remember the weather outside the house, the gravel, the snow, dead grass out front (paramedic attending to a stabbing victim inside a house). She had hard wood floors and a day bed with lots of stuffed animals (woman being sexually assaulted on an adjacent couch).