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The Influence of perspective and gender on the processing of narratives

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THE INFLUENCE OF PERSPECTIVE AND GENDER

ON THE PROCESSING OF NARRATIVES

by

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ABSTRACT

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by

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The overarching aim of this research was to examine potential boundary conditions to situation model construction (Experiment 1) and narrative-based persuasion (Experiment 3). Variables such as narrative perspective (i.e., 2nd or 3rd person) and matched characteristics with the reader (i.e., participant-protagonist gender match) were first examined using situation model updating (Experiment 1) and behavioral measures (Experiment 3) as dependent measures. It was expected that situation model updating would be more likely for narratives written in the 2nd person perspective and with a participant-protagonist gender match. It was uncertain, however, for health promotion narratives, whether these manipulations would increase the likelihood that readers would be persuaded by a story and take informative pamphlets and coupons for samples of sunscreen. The findings of Experiment 1 did not reveal greater situation model updating for 2nd person matched narratives. Further examination of the stimuli used in the first experiment (Experiment 2) suggested that, relative to past research, while there was greater interest in the stories, there was less imaginability (i.e., picturing oneself as the protagonist). This pattern suggests that while interest in the story content may engage readers for a 3rd person perspective (i.e., he or she), other factors are necessary for engagement for a 2nd person perspective (i.e., you). For example, in the latter perspective,

it may be that readers must relate to a character's behavior through actual personal experience before being able to imagine themselves in the story. These insights were applied to the tailoring of a health narrative concerning melanoma and the use of sunscreen in Experiment 3. Participants in Experiment 3 showed a greater likelihood of information seeking and behavioral intentions (e.g., taking pamphlets and coupons for sunscreen) for the 2nd person perspective regardless of whether there was a participant-protagonist gender match.

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CHAPTER 1

INTRODUCTION

The narrative form is a mode of communication with which most are familiar. Parents read to their children, friends regale each other with anecdotes, and during school lectures teachers often lead into difficult concepts with examples delivered as stories. Although narratives are familiar to many, researchers in psychology have yet to come to a consensus on the definition of narrative (e.g., Adaval & Wyer, 1998; Graesser, Millis, & Zwaan, 1997; Hinyard & Kreuter, 2007; Rumelhart, 1975). The current project follows Hinyard and Kreuter's idea that narratives have a definite sequence (i.e., beginning, middle, and end) and some form of conflict.

However, no matter the definition, narratives can engage and subtly persuade listeners to change their attitudes and even take the initiative to change their behavior. Narratives can stimulate individual, community, and social change (Rappaport, 2000). Despite a general acknowledgement of the power of the narrative form, a number of conflicting findings and questions have arisen since seminal research on narrative persuasion (Green & Brock, 2000). Green recently noted that "open research questions include those related to the active ingredients of good stories, [and] the influence of situations and individual differences between readers on story reception" (2008, p.51). The current research focused on both of these areas: story elements and their varied impacts upon readers, given the social context.

Purpose of the Research

The overarching purpose of this project was to investigate the processes that underlie the phenomenon of narrative-based persuasion. In order to gain a better understanding of story elements, Experiment 1 focused on narrative comprehension. Experiment 1 was an attempt to isolate the effects of story variables such as narrative perspective, gender of the protagonist, and time information, using established procedures in cognitive psychology. Experiment 2 provided further insight as to essential story characteristics and practical considerations. Experiment 3 was an application of the previous study's findings to the construction of a health promotion narrative. In sum, Experiments 1 and 2 provided theoretical considerations for narrative processing and comprehension, whereas Experiment 3 applied those factors within a social context.

CHAPTER 2

REVIEW OF RELATED LITERATURE

Construction of Situation Models

Johnson-Laird's (1983) seminal work on situation models sought to explain text comprehension and the subsequent inferences made about it. As authors, teachers, and researchers in persuasion will acknowledge, readers often draw differing conclusions from the same piece of text. Knowing the reasons for this occurrence is of use to all three parties. Van Dijk and Kintsch (1983) note that situation models attempt to account for why the same information in a story can lead to two or more different conclusions on the part of readers. They explain that this occurs because people can have different situation model representations, or may possibly be relying on different memory representations.

In discourse processing, readers typically construct three levels of representation in memory. The first, the surface representation, is based on the superficial characteristics of text, such as the phonemic representation or a common understanding of letters and sounds (Johnson-Laird, 1983). That is, the surface representation is memory for the exact text, words, and sounds. The second level, the propositional textbase representation, is one's memory for the ideas stated in the text. For example, "Nicole yelled at Kris" and "Kris was yelled at by Nicole" would have different surface representations, but because they express the same idea, they would have the same textbase representations. The last step of discourse processing, situation model construction (Zwaan & Radvansky, 1998), emphasizes that incoming story information is not just processed by virtue of grammatical knowledge for sentences but by existing world knowledge. Situation models not only include an integration of the ideas in a text, but also any inferences made by

readers using their prior knowledge. This last representation is important because it tends to be the most lasting of the three (e.g., Radvansky, Zwaan, Curiel, & Copeland, 2001). For example, surface representations can be lost in minutes, and typically last no more than a few hours, while situation model representations tend to remain in long-term memory indefinitely.

Learning from stories or being persuaded by narratives does not simply equate to text learning, or simple acquisition of information. According to a situation models view, this type of learning consists of monitoring information, keeping relevant information more accessible, and modifying an existing situation model based on integrating new information to it (Johnson-Laird, 1983). When readers are able to integrate information from various sources and from multiple readings into that existing model, learning has occurred (Zwaan & Radvansky, 1998). Thus, narrative-based persuasion effects can be predicted and assessed by a perspective much deeper than simple audience or message analysis.

Knowing how situation models are constructed and what readers most attend to can be of use to authors and researchers. Research on situation models has focused on aspects such as space, time, entities (e.g., the protagonist), goals, and perspective because readers monitor changes in these variables while reading. The following sections examine each of these ideas.

Levels of Memory Representation

Space

Spatial locations seem to be an important foundation of a situation model representation. A number of studies have shown that people monitor changes in location

while reading (Glenberg, Meyer, & Lindem, 1987; Radvansky & Copeland, 2001). Spatial shifts within a story tend to make it more difficult for readers to process text (although, see Radvansky & Copeland, 2010). Evidence of spatial updating is demonstrated in the tendency of reading times to increase, particularly when there are meaningful changes in spatial location (Radvansky & Copeland, 2001). Updating has also been demonstrated by measuring how accessible objects are in memory when spatial movement has either occurred or not. For example, if a character was in his bedroom, the concept of "alarm clock" would be more easily accessible in memory if the character remained in the bedroom than if the character changed locations by moving to the kitchen. In other words, if the character were in the kitchen it would be more difficult for readers to recall "alarm clock" than if the character were still in the bedroom.

In addition to spatial locations (i.e., a specific setting), spatial relations (i.e., where two objects/people are in relation to each other) are also important components of situation models. For example, if a spatial relationship was functional (e.g., a story character stood underneath a bridge to get out of the rain), it became better integrated into the situation model than if the spatial relationship was not functional (e.g., a story character stood in front of a bridge while it rained). When more information from a story can be recalled, it is more likely to lead to belief change. A similar process occurs for the next component of situation models, time.

Time

Readers also attend to time shifts within a narrative (e.g., Zwaan, 1996) because temporal information is used to construct situation models. In particular, time shifts make it more difficult for readers to connect events to existing situation models; because of

this, readers typically construct a new situation model. Similar to spatial changes, events presented prior to a time shift tend to be less strongly accessible in long term memory because they are in an earlier situation model and not the current situation model representation. Zwaan (1996) and others have compared time shifts by examining brief time changes (e.g., “a moment later”) and longer, meaningful time changes (e.g., “an hour later”).

For example, if a baseball player completed his fielding drills and a moment later took batting practice, it is likely that the reader will recall both events easily because they are both part of the current situation model. However, take for instance a longer time shift. If the narrative stated that the baseball player completed his fielding drills and an hour later took batting practice, recall of the former event may be lessened because it is in a prior situation model while the action of taking batting practice is in the current situation model. The slower reaction time associated with greater shifts in temporal information (i.e., a moment later to an hour later) implies an increase in processing load (Zwaan, 1996). Time shifts are seen as cues for readers to disregard the prior point in time and to now pay attention to the new time and event.

Protagonist

In addition to changes in physical space and shifts in time, readers also pay attention to protagonists. It has been argued that readers engage with protagonists (e.g., Graesser, Olde, & Klettke, 2002) and draw inferences about them and their ability to meet goals (e.g., Lutz & Radvansky, 1997). Knowing this tendency of readers is especially relevant to the discussion of narrative-based persuasion. Any story is comprised of events which initiate action on the part of the protagonist, resulting

outcomes, and subsequent reactions on the part of the protagonist. Corresponding emotional reactions can also result on the part of the reader, and that tendency is often determined by the degree to which readers relate to the protagonist (see Green, 2008).

Goals

People typically pay attention to a character's goals as they read. In particular, readers tend to be especially attentive to instances when a character fails to reach his goal. Suh and Trabasso (1993) found that readers responded much more slowly to probes that referred to completed goal information than to probes that referred to failed goal information. The reason for this pattern is somewhat similar to the pattern observed for time shifts. In narratives, the goals of characters drive their actions. As people read, goals help them understand why characters do what they do. Thus, when a goal has been accomplished, the prior situation model will be closed and a new situation model will be constructed that is based on a new goal.

If, however, a goal is not completed, then that goal is still an important component of the current situation model. Along this line, readers also view subsequent story events and actions of the protagonist as related to the purpose of achieving an unmet goal (Lutz & Radvansky, 1997). Through the process of constructing these inferences, readers integrate narrative information into a situation model for the protagonist. Readers tend to remember story information better when they think about why a character did not meet his goal. This elaborative thought makes story information more available in memory (Lutz & Radvansky, 1997).This suggests that the Hollywood ending and happy resolution may not make a story memorable, for it is the journey of

quandaries and failures that make it so. This may partially explain the popularity of cliffhanger endings.

Narrative Perspective

Perspective is another aspect of narrative that can affect memory for story information. Readers will typically be engaged in story content such as events in the story and characters during narrative processing, but readers do not pay attention to the author of the story. Thus, various active reading strategies such as Questioning the Author (Beck, McKeown, Sandora, Kucan, & Worthy, 1996) have been developed to help students construct their own representations of the author/narrator. In fact, narrators are rarely noticed by readers unless there is an overt mention of their existence in the text, such as in the following passage: "Before I describe to you what happened that day..." (Graesser et al., 1997). However, the agent perspective is especially germane to the discussion of memory for story information and eventually narrative-based persuasion.

According to Graesser et al. (1997), different forms of narration may be more salient to readers. In the 1st person perspective the narrator is the protagonist and the story is told in his point of view. For example, a story in the 1st person perspective would include a statement such as: "As soon as the manager grabbed the ball out of my hand, I walked off the mound and went straight to the showers." A 3rd person perspective implies a separation of agents between the narrator and protagonist. The narrator recounts what he saw occur in the baseball game. The statement above would become: "As soon as the manager grabbed the ball out of his hand, he walked off the mound and went straight to the showers." Both the 1st and 3rd person perspectives are common in narrative.

A 2nd person perspective is rare in narrative, but worth discussing here. Based on the running example, the 2nd person perspective would be "As soon as the manager grabbed the ball out of your hand, you walked off the mound and went straight to the showers." In the agent amalgamation hypothesis by Graesser and colleagues (1997), the more roles implied by narrative perspective, the more levels of structure constructed in the situation model. As opposed to the other perspectives, the 2nd person perspective represents a situation in which agents are amalgamated, or play multiple roles (i.e., reader, protagonist, narrator, listener) (Graesser et al., 1997).

Graesser's fusion facilitation hypothesis (Graesser et al., 2002) similarly predicts memory benefits for the 2nd person perspective. In this hypothesis, the second person perspective should be most salient in memory but because the reader is an active participant in the story, namely as the protagonist and the narrator (Graesser et al., 2002). This active participation in the story presumably should lead to engagement and consequently improved recall of story information relative to other perspectives. Both of these hypotheses (i.e., the Agent Amalgamation Hypothesis and the Fusion Facilitation Hypothesis) despite slightly different reasons predict a benefit for the 2nd person perspective.

Support for these ideas has been observed in recent studies. Graesser et al.'s (1999) results showed that memory performance was lower for the 3rd person perspective than for the 1st person narration. Readers fail to notice a narrator when a story is strictly in third person, without any overt mention of the narrator. However, the Agent Amalgamation Hypothesis was not tested for the 2nd person perspective. Recent work by Copeland and Houska (2010), though, has provided some preliminary support for the 2nd

person perspective. Copeland and Houska found that readers were more likely to update their situation models in the 2nd person perspective than in the 3rd person perspective. This was interpreted to mean that readers were more engaged in the 2nd person narratives. If readers are less engaged in a narrative, then they will be less likely to update their situation models.

In sum, these studies (Copeland & Houska, 2010; Graesser et al., 1999) provide preliminary evidence for differential processing among narrative perspectives. Namely, use of the 1st or 2nd person perspectives seems to lead to better retention than narratives written in the 3rd person perspective. These results suggest that readers are more engaged in stories when they are active participants. Simply manipulating a story perspective from "he" or "she" to "you" could help readers monitor and integrate current story information into their existing memory structures.

Theories of Narrative-Based Persuasion

Two prominent theories address story aspects which contribute to the persuasiveness of the narrative form: the Transportation-Imagery Model developed by Green and Brock (2000) and the Fiction as Cognitive and Emotional Simulation approach (Oatley, 1999). These theories should not be viewed as dichotomous contrasting perspectives, as there are some points of theoretical overlap, but they may predict varied outcomes from the reading of narratives intended to persuade.

The Transportation-Imagery Model

Recent work has suggested that when readers become absorbed in the narrative and become "transported" from their current situation they tend to be more persuaded by the content of the story (Green & Brock, 2000). The means by which readers become

transported is by the quality of the text, its degree of description, and imagery. If events in the narrative are realistically presented and induce images, then it is more likely that the reader will follow the story and become "transported."

As was addressed in an earlier section on narrative perspective, the choice of person must be considered in narrative construction with regard to transportation. Recent research (Copeland & Houska, 2010) suggested that a 2nd person perspective may increase reading engagement. However, although there is no current research to lend credence to this point of view, it is possible that a 2nd person perspective (i.e., you) may arouse resistance in readers. That is, readers who may discover story elements similar to their experience may feel uncomfortable or guilty. They may even question why this particular narrative was presented to them. In any of these cases, person or narrative perspective could reduce the impact of the communication and any chances for belief change.

Van Der Wege (2007) found that stories written in the 1st person transported readers much more easily than stories in the 3rd person. This finding can be explained by the idea that readers are best able to take the perspective of a narrator when they are giving their own personal experience, as indicated by "I." It may be more difficult for readers to assume the 3rd person perspective of narrators because they play the role of spectator, and are telling the reader what another person was doing in a situation. Perhaps readers implicitly respond to 3rd person narratives with increased scrutiny because of this separation from the narrator. Van Der Wege did not examine the effects of second person perspective.

On the one hand, it is reasonable to think that using "you" in some narratives could absorb readers into a story and involve them more in story events than by using other perspectives (e.g., 3rd: he/she) (e.g., Graesser et al., 1997). On the other hand, certain health topics may be sensitive and distressing for readers to think about. In that case, a 2nd person perspective may arouse resistance, disengagement, or rejection of the story altogether. These possibilities are only suppositions until research addresses these questions on perspective taking in narratives built for persuasion.

Readers could also relate to the narrator or characters if they share an important characteristic in common. Gender or ethnic group may be a salient shared characteristic. Van Der Wege's (2007) research provided the much-needed impetus to this research direction. The data suggested that readers' perspective taking was improved when gender match existed between character and reader. Opponents to the notion of gender match may argue for the universality of experience and that a narrator or character's gender should not matter for common situations. In some cases, this stance is valid. There are many stories about the human condition that feature characters that resonate with readers despite the lack of gender match. However, for the domain of health behaviors, gender is implicated in a number of health risk behaviors and conditions.

One could argue that topics such as binge drinking are nearly universal for college students, and thereby gender neutral. That is, young men and women both partake in binge drinking, and a character in a story may experience common events and reasons for partaking in this risky behavior. But for readers of narratives that concern gender-constrained health conditions (e.g., breast cancer, prostate cancer), gender match may be necessary for believability. Mar and Oatley (2008) argue that readers conduct a personal

reenactment of a story scene based on their own personal experience. For instance, male readers my perceive a female narrator or character speaking on prostate health and preventative behaviors less of an authority than a male narrator or character. However, those male readers who see a female physician may assign male and female doctors equal status. There is no research to date that has directly investigated gender matching at this time, but recent reviews (i.e., Green, 2008) argue for the possibility of matching story elements with reader characteristics.

Fiction as Cognitive and Emotional Simulation

In its very nature, non-fiction is informational, whereas fiction is concerned with emotions. The typical narrative sequence includes a protagonist with goals and a plan; this is the beginning of the story (Rumelhart, 1975). A protagonist then experiences changes to that plan in the form of challenges or obstacles. At the end of the story, the protagonist often overcomes these difficulties, which leads to an emotional reaction in readers. Oatley's (1999) model of Fiction as Cognitive and Emotional Simulation is based on the predilection of narratives to evoke emotional responses in readers. From that emotional involvement comes insight, and to persuasion researchers, attitude and behavior change.

The narrative structure not only stirs emotions but also provides the context for readers to reflect upon story events. In real life, people are often not aware of the motivations, goals, and plans of others. Narratives provide this structure, and the strong emotions stories evoke often cause readers to reflect upon story events and why they occurred. Oatley refers to this process as simulation. He considers the process of a novel running along in the minds of readers in the way that simulations run on a computer.

Cognitive and emotional simulation experienced through reading a narrative provides a deeper understanding of one's emotions than would not have been otherwise possible (Oatley, 1999). This suggestion should be of interest to researchers interested in attitude and behavior change. Thompson and Haddock (2008) appear to be the first researchers to examine risk perception and subsequent attitude change by applying the suggestions of the transportation-imagery model and the fiction as simulation approach. This implies that aspects of the Fiction as Cognitive and Emotional Simulation Model should strongly predict attitude and behavior change. Because readers experience emotions during a narrative and try to make sense of them, they should have personal ties to the story. The personal ties are strengthened because readers rely upon their own memories and personal experience during the simulation process. Moreover, the simulation process should lead the reader to experience a sense of personal responsibility and risk.

This perspective could be seen as one competing with the Transportation-Imagery Model. Green and Brock (2000) acknowledge the practicalities of transportation in the form of reduced arguing against a message, which then leads to behavior change. Few researchers have examined whether the experience of being transported across time, place, and space predicts behavior change more adequately than the very personal nature of the simulation process. For the construct of transportation to be teased apart from simulation, participants in Thompson and Haddock's study noted their current drinking behavior. This is a critical consideration because readers need to have personal experience with the story events in order for them to recognize that their behavior poses some risk to them.

Thompson and Haddock (2008) found support for this model in that participants who had a greater sense of personal risk were more apt to want to change their risky drinking behavior. In contrast, participants who did not acknowledge personal risks to their behavior, but were transported by the narrative, noted a sense of general risk. Those participants acknowledged that binge drinking poses some risk, but not to them personally. One implication of this is that the transportation in and of itself is inadequate in predicting attitude and behavior change. This is to be expected when one considers the many competing and additive social variables in a given behavior. Perhaps transportation cannot be viewed as a "magic bullet," so to speak, but a prerequisite to persuasion. Narratives need to be well-written to immerse readers. Whether that immersion prevents arguing against the message, depletes cognitive resources, or leads to an emotional response remains to be seen.

The other implication of Thompson and Haddock's (2008) work is that personal risk is a construct that must not be overlooked. A sense of personal risk could be achieved by selecting the right sample. If participants lack experience with a certain behavior then it is difficult, if not impossible, for them to picture themselves in a scene, or in the shoes of a protagonist. In academic settings sampling can be a concern, whereas in applied settings this is less of a concern. Patients have some experience with a risky behavior in most cases or they would not be seeking treatment.

More importantly, personal risk could be activated within the narrative if certain stylistic devices were utilized. For example, if second person narration were used (e.g., have you ever woken up not knowing where you are after a long drinking session) it may function to draw readers into a story. Given the importance of personal memories in

making sense of story events (see Oatley, 1999), this is a sensible consideration for future research. Another means of evoking personal responses during the narrative could be through the dialogue used by the protagonist and other main characters. For example, a main character could ask the protagonist whether "he knew that binge drinking is a learned habit and it could also be unlearned." Conversations like these could parallel the reader's experience and trigger memories. Those memories would help the reader make sense of the story during the simulation process, and may also affect his own perception of personal binge drinking risks.

In sum, well-written narratives with vivid imagery tend to immerse readers in story events. This phenomenological experience is termed transportation. Research has shown that the extent to which readers are transported correlates positively with attitude change. In a similar vein, emotions experienced while reading a story can lead to reflection and insight. Both the Transportation-Imagery Model and the Fiction as Cognitive and Emotional Simulation Model provide slightly different explanations for attitude change. Both models have been developed with a mere handful of studies. Only time will tell which model better accounts for phenomena in the realm of narrative-based persuasion.

Effects on the Reader

Authors craft narratives to evoke some desired effect in readers. Often, narratives are written for an emotional effect. Affective responses to narrative can function positively by causing a sense of dissonance or they can cause reactance on the part of readers.

Affective Reactions

When compared to statistical evidence, narrative evidence tends to evoke greater affective reactions in readers (Kopfman, Smith, Ah Yun, & Hodges, 1998). These emotions can be positive toward the message, against the message, or neutral. Kopfman et al.'s work demonstrated that readers generate more emotions, in general, when presented a narrative than when presented statistical evidence. This pattern of results may be due to the so-called "vividness effect" (Taylor & Thompson, 1982).

It seems intuitive that more vibrant, interesting information and modes of presentation would be encoded better and lead to superior recall when compared to bland information or methods. Given that, the narrative form should attract the attention of readers because of people's familiarity and positive view of stories, and due to the plot, characters, and voice of the author. With that attention, which can stimulate thought processes, it would be expected that emotions would be for the most part, positive. Depending on the subject matter, particularly the actions an author is suggesting the reader perform, the narrative may generate more anxiety than other presentation methods.

In Kopfman et al.'s (1998) research, their vivid messages on organ donation tended to create fear and anxiety in readers. Taken as a whole, narratives are effective in arousing a variety of thoughts and affective responses in readers. Researchers must be mindful of their subject matter and anticipate obstacles such as anxiety on the part of their readers. For instance, sensitive topics such as organ donation and other health communications can clutch the active imaginations of readers, trigger emotions, and cause them to reject the intended message. Another explanation for why readers may resist narrative suggestion is Brehm's (1966) theory of reactance.

Reactance Theory

Even with the most well-intentioned narratives, there is never a guarantee that the reader will follow the message implied in the story. The reader may resist the message and completely reject it. In some cases, the reader may continue to act in a way contrary to suggestions. Brehm's (1966) theory of reactance spawned considerable research in social psychology, and may also account for these narrative phenomena. Reactance Theory has demonstrated wide applicability to a whole host of situations since Brehm (1966) envisioned his original theory. This is not surprising because the theory of reactance was worded rather broadly. Reactance is a motivational state in which a person experiences an increased awareness of his deprived freedoms. According to Reactance Theory, people will experience a state of reactance whenever their freedom to choose or behave as they wish is threatened or taken away (Brehm, 1966). Because of this experience people can face distinct outcomes, either aggressive feelings toward the depriving agent and motivation to act, or a denial of the situation itself (Brehm & Brehm, 1981). The manifestations of how people respond to their encroached freedoms are one debatable aspect of Reactance Theory.

According to the original conception of Reactance Theory, people's motivation to restore their freedom is accomplished in two ways. People can regain their freedom of choice and action by directly engaging in the constrained behavior (Brehm & Brehm, 1981). People may also regain their autonomy by asserting another similar action. For instance, if teenage college students are mandated to refrain from alcohol while underage, they may instead drink to reassert their freedom to act freely and without the interference of authority figures. In the latter form of restored freedoms, people partaking in a

controlled substance such as marijuana may not be equivalent to having a cocktail, but people believe they regain their freedom by implication. That is to say, if the college students are smoking marijuana then it implies they also partake in other related acts. In addition to situational and contextual determinants of reactance, certain people may simply be more reactant than others.

People unable to drink or engage in another similar act of freedom may simply deny that their freedom was infringed upon. They would likely claim that they truly do not care to drink and made that choice on their own, and independent of others. What's more, people may also express greater enjoyment of that forbidden act. Inquiry into the theoretical propositions of Reactance Theory peaked soon after the seminal work of Brehm (1966). Contemporary research has taken a more practical focus toward direct application toward health communication, in areas such as college student alcohol consumption (Allen, Sprenkel, & Vitale, 1994) and adolescent smoking (Grandpre, Alvaro, Burgoon, Miller, & Hall, 2003). The strength of Reactance Theory, with respect to attitude change, then lies in its parsimonious account for why persuasion attempts fail. In addition to health topics which can arouse reactance, personal characteristics and tendencies can also lead to reactance.

When investigating trait reactance, the message form and topic itself may differentially affect people. Dillard and Shen (2005) found that those individuals prone to reactance may become angry or hold negative cognitions, but only to some topics (e.g., anti-alcohol communications, flossing messages). Presumably, one can expect the greatest resistance when reactant people receive a threat to their freedom. Taking into account both trait and state reactance is helpful when crafting persuasive communications

as well as realizing the potential causes of resistance. It is curious that the reactance construct is not drawn upon more frequently. As alluded to earlier, one reason that explains why reactance may not be the first thought of researchers is the tendency of Western cultures to overcome their adversary (Knowles & Linn, 2004). Instead of strengthening one's message to overcome an opposing force, perhaps the competing resistance should be considered. Narratives may be most effective if plots and characters do not directly address the intended topic to overcome the receiver but instead "sidestep" resistance (Knowles & Linn, 2004).

Boomerang Effects

Once a reader resists a message, it is possible that a subsequent step occurs. The intriguing phenomenon of reasserting a novel freedom represents more than mere resistance to a message. An emerging act or boomerang effect is what differentiates psychological reactance from other conceptualizations of resistance. Boomerang effects (Clee & Wicklund, 1980) are demonstrated when people act in direct opposition to recommendations. Using the previous example, a boomerang effect occurs when teenage college students drink more alcohol as a result of being exposed to a message against such behavior. In Wicklund, Slattum, and Solomon's (1970) study, the reactance arousing condition was one in which a high-pressure salesperson mentioned that he was paid on a commission basis and then complimented the customer. The boomerang effect predictably was a strong refusal to purchase a product. Moreover, the participants in this condition tended to give lower ratings to the product. They went directly against the salesperson's position and disliked the product even more. Boomerang effects present an additional challenge to compliance professionals and researchers.

However, researchers note that boomerang effects are not always observed (Burgoon et al., 2002). This tendency may partially explain why research on Reactance Theory has faded. Some researchers (e.g., Burgoon et al., 2002) contend that a focus away from the notion of boomerang effects may benefit research on reactance. This suggestion is practical because not every persuasion attempt contains the factors and situations that evoke boomerang effects. Thus, theorizing that stems from the basic reactance construct could provide fruitful avenues for future research. Instead of strictly focusing on the existence of boomerang effects, assessing the motivation to reinstate one's compromised freedom, examining imagined or cognitive reinstatements, or even physiological measures of anger can also demonstrate the manifestations of reactance (Burgoon et al., 2002). The construct of reactance, once considered by Brehm and Brehm (1981) to be an immeasurable and hypothetical variable, has been recently explained by both cognitive and affective processes.

Dillard and Shen (2005) compared models of the mechanisms that represent reactance. A solely cognitive model would conceptualize reactance as arguing against the message. Similarly, an exclusively affective model would focus on the clinical manifestations of emotion, such as degrees of anger. Dillard and Shen found both of these models inadequate to account for their data. In their study of health messages (i.e., flossing and alcohol consumption), there was support for the model with both cognitive and affective components instead of either variable alone. These findings support an intertwined model of reactance, one that considers cognition and affect both as indicators of reactance rather than separate distinguishable phenomena. Researchers should consider

arguing against messages and any emotional responses to them, not just boomerang effects. Both activities occur as people read narratives.

Reactance and Individual Differences

Besides understanding the multiple markers of reactance states, it is also important to note that some people may just be more prone to reactance than others. The degree to which a person becomes reactant is known as trait reactance. Trait reactance (Burgoon et al., 2002; Voyer et al., 2005) is most generally measured by utilizing the Hong Psychological Reactance Scale (HPRS: Hong & Page, 1989). The original HPRS includes 14 self-report items such as "I become frustrated when I am unable to make free and independent decisions" and "When someone forces me to do something, I feel like doing the opposite." Such items adequately address Brehm's (1966) original conception of reactance; specifically, they address the response to elimination of freedom and potential for boomerang effects. Use of the original HPRS or shortened version (see Hong & Faedda, 1996) to examine trait reactance has been empirically demonstrated, and may prove its utility in the study of narrative-based persuasion. Authors and compliance professionals may be well suited to identify participants and populations who may resist messages more than others. Knowing this information, these individuals can tailor their messages and stories to be less direct, more subtle and veiled, or circuitous in how they address topics.

The efficacy of the narrative form may lie in the form's tendency to avert resistance or reactance in the receiver. The idea of overcoming or sidestepping receiver resistance through the narrative form has been suggested even more recently (Dal Cin, Zanna, & Fong, 2004; Knowles & Linn, 2004). Acknowledging and going around the

receiver's resistance to the message may be more effective than confronting resistance directly and attempting to overcome it. Reducing the receiver's negative cognitive responses by not addressing them prevents arguing against the message (Dal Cin et al., 2004; Knowles & Linn, 2004). Recent research on narrative perspective, however, may provide some insight as to which person (i.e., 1st (I), 2nd (you), 3rd (he/she)) would be best to engage readers but not arouse resistance.

Cognitive Dissonance

In addition to resistance to a message and reactant behaviors, readers may also experience a milder form of discomfort when reading a narrative, called Cognitive Dissonance. In a program of research by Festinger (1957) and colleagues, a wide variety of laboratory tasks demonstrated that when people hold inconsistent thoughts, they tend to be uncomfortable. These unpleasant emotions are motivational (Brehm, 2007), and to get out of a state of dissonance people will undertake some kind of cognitive work (Harmon-Jones & Harmon-Jones, 2007). These "action tendencies" (e.g., Harmon-Jones, 1999, 2000) are often the primary interest to persuasion researchers. The degree to which beliefs are held determines whether people tend to change those attitudes or their behavior to reduce dissonance.

One reason that Festinger's original conception of Cognitive Dissonance remains relevant today is because of the abstract manner in which it was written (Harmon-Jones, 1999). Such wording allows for broad application of general procedures and provides expectations for typical actions that follow after a state of dissonance is evoked. Thus, the application of Cognitive Dissonance to narrative should be a consideration when crafting

or analyzing the narrative's plot and dialogue. Putting readers in a state of dissonance may prove effective in altering attitudes, if not changing behaviors.

The Hypocrisy Paradigm

The Hypocrisy Paradigm (e.g., Aronson, Fried, & Stone, 1991; Dickerson, Thibodeau, Aronson, & Miller, 1992; Stone, Aronson, Crain, Winslow, & Fried, 1994) is one method that can be used to place people in a strong state of dissonance. One aspect of this, hypocrisy induction, is a procedure that makes people realize that their actions are not in line with their espoused beliefs. This key element of the Hypocrisy Paradigm is much stronger than just creating a scenario that makes people have conflicting thoughts. A step beyond conflicting thoughts is to have people commit to a stance or promise to take future action, which is an improvement over simple dissonance. However, disconnect can exist between intention and action. People will vow to take an action but lack the discipline or foresight to actually follow through with the action. Therefore, researchers will include a behavioral indicator as a final step in the Hypocrisy Paradigm. It is possible to investigate narrative-based persuasion based on this research sequence.

A concern for those creating persuasive narratives is how to apply steps such as the Hypocrisy Paradigm. In most traditional laboratory studies involving the hypocrisy paradigm (e.g., Stone et al., 1994), people are instructed to offer their beliefs on a topic and related past behaviors. In contrast, Dickerson et al. (1992) and Fontiat (2004) showed that they could cause people to access their attitudes toward the target behavior in applied and naturalistic settings. Both the Dickerson et al. (1992) and Fontiat (2004) studies provide some optimism to narrative researchers. These studies have shown that traditional laboratory procedures to evoke hypocrisy may not be necessary to evoke

feelings of hypocrisy. Authors and narrative researchers may need to investigate creative procedures (e.g., narrator and character dialogue, soliloquy) to grab the attention of readers and motivate them to take a stand on a topic. If readers do not take a firm stand, they must at least access their prior knowledge on a topic and their past behavior for any semblance of attitude change to occur.

Despite the inherent difficulties in adapting the traditional Hypocrisy Paradigm to printed stories, there are some benefits to using the narrative form. Readers are not directly challenged nor do they perceive criticism for their shortcomings. Fried (1998) showed that an indirect method of challenging message recipients can still lead to attitude and behavior change. In Fried's (1998) study, participants were made aware of their recycling failures. In one condition participants were anonymous and in the other they were publicly identified. Those participants who were named and directly tied to their past failures felt more negatively toward the issue, whereas the anonymous participants donated more time and money to the recycling cause. Fried's (1998) work indicates that attitude and behavior change remain possible when people are not directly criticized. This finding bodes well for the possibility of inducing hypocrisy in readers.

Confronting people directly may activate different cognitions, emotions, or motivational states and this may lead people to different dissonance reduction tactics (Stone & Fernandez, 2008). Stone and Fernandez interpreted that the shame of being directly implicated in Fried's (1998) research led people to reinforce their existing behavior and change their attitudes instead. Attitude change was the path of least resistance as compared to behavior change. This outcome is less likely if a narrative strategy is employed. Narratives indirectly address personal and social issues and by

nature often do not encourage resistance. Clearly, there is no backlash of being publicly shamed in the reading of narrative. With narrative there is no need to save face and so the people may resolve any dissonance experienced on their own terms and way.

In sum, both Reactance Theory and Cognitive Dissonance should be considered in any investigation of narrative-based persuasion. Reactance should be anticipated in any scenario in which readers' freedoms may be infringed upon. Narratives can be written in such a way that readers are less likely to respond to a story with resistance. That said, narratives should still be written as to evoke some sense of discomfort or ambivalence in readers. Many years of research on Cognitive Dissonance reveal that a state of dissonance serves as the impetus to cognitive and behavioral change (Harmon-Jones & Harmon-Jones, 2007). Even though the theory of Cognitive Dissonance has been applied to many domains involving attitude change, it has yet to be given a prominent role in today's work on narrative-based persuasion.

Summary of the Literature

The sheer ubiquity of the narrative form (or paucity of research in narrative-based persuasion) is one reason for conducting research in this area. A more compelling reason for investigating narrative is the many research areas that can be informed by this research. Research areas in the social sciences, such as cognitive, social, and health psychology, can be enlightened by research on narrative persuasion. Medical research can also directly benefit with regard to medical decision making and the application of research in narrative persuasion. Recent work in these areas can provide future directions for narrative research.

Social Influences on Narrative Processing

Research investigating pertinent social psychological variables within narratives has begun. Van Der Wege (2007) manipulated gender for the story's protagonist and perspective (i.e., 1st person, 3rd person). The data revealed greater attitude change when the protagonist was of the opposite sex than the same sex as the reader. In Van Der Wege (2007), participants tended to be less persuaded by a familiar story element, someone of the same gender. However, Green (2004) found a conflicting pattern. Participants who were in a fraternity or sorority tended to identify more with a Greek character than non-Greek participants. This finding suggests that group membership and other personal characteristics may be more salient than one's gender. Moreover, it is unclear whether matching story elements to reader characteristics is a process to increase transportation and lead to attitude change (see Green, 2008).

Health research has also begun to investigate the effects of narrative on medical decision making. Winterbottom et al.'s (2008) review of the research on narratives and decision making suggests that 1st person narratives affect decision-making more than 3rd person narratives. However, this verdict is tentative because of the number of studies (i.e., 17) investigating narratives and subsequent decision-making. Even then, the narrative form has failed to exert a uniform influence on readers. Only one-third of the studies in Winterbottom's review attributed any persuasive benefit to the narrative form.

Despite Winterbottom's (2008) less than encouraging findings for narrative researchers, Thompson and Haddock's (2008) work poses more questions than answers. The key question derived from their research is how to increase the perception of personal risk in readers. Readers themselves must feel personally at risk when they think

about their own behaviors. If readers believe a behavior is risky in general, but not to them, they will neither change their attitudes nor their behavior. If Thompson and Haddock's findings are replicated in future research, we can say that personal risk is necessary no matter how well-written and transporting a narrative can be.

In conclusion, it is unclear whether narratives lead to better storage and retrieval of information than compared to statistical presentation and direct argument. This research question is nearly impossible to address when faced with the vast variety of methods, experimental materials, and samples (Winterbottom et al., 2008). Moreover, neither the processing of persuasive narratives nor the attitude change or decision-making component is sufficiently understood. Research on narrative perspective, such as that concerning whether to utilize the 1st or 3rd person, is lacking in context of persuasion. As to be expected, the mediators, moderators, and mechanisms implicated in the effectiveness of narratives have hardly been explored. For these reasons, research on narrative persuasion is well-warranted whether researchers prioritize theoretical explanation or real-world application.

For the purposes of both basic and applied research, well-established knowledge bases (i.e., text processing and comprehension, memory representations) can guide future research on narrative-based persuasion. Research in social psychology, communication studies, and discourse processing all provide suggestions on how to develop effective narratives and how to measure their effects on readers. It is unclear whether other story elements, such as narrative perspective or protagonist characteristics (i.e., gender) significantly affect processing of narratives, and perhaps even moderate attitude change. Given what it is known about these variables and how they affect the use of situation

models, it was sensible to examine them in a series of three experiments. Experiment 1 focused on readers' processing of narratives, Experiment 2 further examined how people process and relate to narratives, and Experiment 3 investigated behavioral responses.

CHAPTER 3

OVERVIEW OF EXPERIMENT 1

Experiment 1 investigated the potential memory benefits of the 2nd person perspective relative to 3rd person. Participants read narratives presented on a personal computer while seated by themselves in their own cubicle. Stories were presented one sentence at a time and participants advanced at their own pace. They advanced to the next sentence using the space bar, and responded to probes and comprehension questions using the mouse. Participants were asked to read a series of narratives that included either short or long time shifts (Zwaan, 1996). The short time shifts were "a moment later" and the long time shifts were "a day later". Time shifts were used to examine the extent to which people were updating their situation model representation for the events of the story. Reading times for these time shift sentences, as well as accuracy and response times to probes were primary dependent measures. The probes consisted of objects that were mentioned before the time shift.

For the reading times, a main effect of time shift was anticipated based on previous research (Copeland & Houska, 2010; Radvansky et al., 2003; Radvansky & Copeland, 2010; Zwaan, 1996). This main effect is demonstrated by slower reading times for longer time shift sentences relative to short time shift sentences (See Appendix 1, Figure 1). This pattern was expected because when people encounter a long shift their reading pace should slow as they update their situation models. This critical dependent measure, reading time on the time shift sentences, was used to determine situation model use.

Significant differences in probe reaction time or probe accuracy between the time shift conditions were possible (e.g., Zwaan, 1996) but were not anticipated based on previous research (e.g., Copeland & Houska, 2010; Radvansky & Copeland, 2010). If there was a difference, it was expected to show that responses for probes following a long time shift would be slower and less accurate. This is because in this condition a new situation model would be constructed based on the time shift cue, and the probe information was based on the previous situation model, which is no longer in the foreground.

In addition, participant-protagonist gender match was manipulated to determine whether matched narratives would lead to more engagement and larger effects for reading times, quicker probe response times, and more accurate probe responses relative to unmatched narratives. This was predicted because larger effects for the dependent measures suggest that people were more likely to be actively monitoring the events in the narratives. It was expected that males would have particular difficulty identifying with the protagonist in the feminine gender-typed narratives. Relative to the males, females were expected to do a better job identifying with protagonists in the opposite gender-typed narratives (Oatley, 1996). Overall, though, it was expected that readers would best identify with protagonists when there was a gender match than when there was not a gender match, leading to a larger effect for the dependent measures (e.g., reading times) (See Appendix 1, Figure 2). This larger effect for matched stories would imply that readers are more apt to construct and update situation models when they can identify with the story protagonist. However, this notion of participant-protagonist gender match has yet to be investigated using 2nd person and a situation models perspective.

A main effect of narrative perspective (i.e., slower reading time, slower probe response time, and higher probe accuracy for 2nd person) was not expected based on previous work by Copeland and Houska (2010). That is, there is no reason to expect different overall reading times and probe responses for the two narrative perspectives. However, if the 2nd person perspective leads to more engagement, a narrative perspective by time shift interaction was probable (See Appendix 1, Figure 3). If narrative perspective is implicated in situation model use, a larger temporal updating effect should be observed for 2nd person when compared to 3rd person narratives, due to increased engagement associated with 2nd person stories.

Lastly, a three way interaction was expected. Past research (Copeland & Houska, 2010; Oatley, 1996) would suggest the largest time shift effects would be observed for 2nd person narratives with a gender match. In this scenario, it could be argued that the readers are best able to imagine themselves in the story. However, the benefit of the 2nd person perspective should be eliminated when gender is unmatched, because in this scenario, it will be difficult for readers to imagine themselves as the opposite gender.

CHAPTER 4

EXPERIMENT 1 METHODS

Participants

A sample of 64 participants (32 women and 32 men) aged 18-30 years was obtained from the University of Nevada, Las Vegas psychology subject pool. Participants were awarded class credit for their participation. The only restriction for participation in this study was that participants needed to be able to speak and read English fluently.

Materials

A total of 24 experimental stories were initially created (half were written with a masculine theme and half were written with a feminine theme – this is described in more detail below) for Experiment 1. Each story was 26 sentences long (see Appendix 2, Table 1). As illustrated by the example story, "Playing football with the guys," all experimental stories were written to include 2 critical sentences in the sentence 8 and sentence 23 positions. All of these critical sentences were 10 syllables and included an object. For instance in the example story, the sentence “A pair of gloves went into your backpack” is the standard length of 10 syllables and includes “backpack” as the object. A time shift sentence always followed the critical sentences at sentence 9 and sentence 24. All of these time shift sentences were 8 syllables and were intended to be plausible within the context of the story whether it was a “day later” or a “moment later.” The purpose of the critical sentences was to introduce an object that was a part of the current situation. Then, the time shift sentence would either continue the current situation (i.e., “a moment later”) or advance to a new situation (i.e., “a day later”).

For the experimental stories, a probe word appeared right after the time shift sentence. For example, "backpack" was the object in sentence 8 of the example story, and after the time shift sentence in position 9, participants were instructed to respond "yes" or "no" as to whether the object (backpack) appeared in the story. Similarly, "football" was the object in the second critical sentence in position 23. After the time shift sentence in position 24, participants responded "yes" or "no" as to whether the object (football) appeared in the story. This was the probe word task. All probes were either one or two word objects from the critical sentence, but all probes were two syllables in length. Within the experimental stories, an additional (filler) probe was also included either between the two time shifts, before the first time shift, or after the second time shift. In the example story, the filler probe came after sentence 14 (“wrists”). The filler probes were included as to not bias participant responding. This is because for all of the experimental stories, the correct answers for the probes of interest (i.e., the ones following time shifts) were always “yes”; thus, the filler probes, with correct answers of “no”, were included so that participants were not always making the same response.

Four versions of each experimental story were created. Two versions were written in the 3rd person about a character that is the same gender as the gender theme (e.g., for “Shooting at the Gun Range”, a male protagonist was used). The other two versions were written in the 2nd person. In reality, this manipulation only really entailed changing pronouns (i.e., converting either “he” or “she” to “you”) and the conjugation of some verbs. Finally, the remaining versions were created by alternating the time shift manipulations so that there was one short time shift and one long time shift in each story, with the order of these counterbalanced across participants. For example, in the first

masculine story (See Appendix 2, Table 1) the first time shift was a “moment later” and the second a “day later” for half of the participants; for the remaining participants the first time shift was a “day later” and the second was a “moment later”.

To ensure that the stories were acceptable for Experiment 1, a pilot study was conducted with 30 participants (15 males, 15 females) who had not participated in Experiments 1, 2, or 3. Participants rated the 24 stories using a scale from 1 to 7 on three dimensions: (1) masculinity/femininity (1 = extremely masculine, 7 = extremely feminine), (2) social acceptance of story themes (1 = not at all acceptable in society, 4 = some people would accept it, some wouldn't, 7 = extremely acceptable in society), and (3) clarity/ quality of writing (1 = not at all clear, 4 = somewhat clear, 7 = extremely clear) (see Appendix 2, Table 2). The specific purpose of these ratings were to ensure that the stories that would be used in Experiment 1 fit the following criteria: (1) half of the stories to be used had masculine themes and half had feminine themes, (2) the masculine and feminine stories would all be rated as clearly written and would not differ in quality, and (3) the masculine and feminine stories would not differ in terms of the social acceptance of the themes.

The six stories from each gender with the lowest clarity ratings were eliminated, leaving a total of 12 experimental stories. These masculine and feminine stories were clearly rated as having masculine and feminine themes, respectively (i.e., all ratings for masculine stories were less than 4 and all ratings for feminine stories were greater than 4). See Appendix 2, Table 3 for a complete report of the pilot study ratings. For the 12 selected stories, analyses were conducted using repeated measures analysis of variance (ANOVA) with regard to the following dimensions: clarity of writing and social

desirability. These ANOVAs indicate that the experimental stories within each gender did not differ significantly from one another in terms of clarity or social desirability (all p s > .05).

The six selected stories that were intended to be stereotypically masculine covered the following topics: (1) playing football with the guys, (2) shooting at the gun range, (3) avoiding the wife by playing golf, (4) growing a moustache, (5) planning a bachelor party, and (6) using power tools around the house. The remaining six stereotypically feminine stories included the topics: (1) watching romantic comedies with the girls, (2) getting pampered at the spa, (3) going out for ladies night at the nightclub, (4) doing a friend's makeup for her wedding, (5) going on a blind date, and (6) spreading gossip. See Appendix 2, Table 4 for the full text of these experimental stories.

In addition to the 12 experiment stories, 12 filler stories were included so that participants could not as easily determine the critical sentence patterns (i.e., the probe following the time shift sentence). These filler stories were also 26 sentences in length and featured story variations such as probes not following time shifts as well as probes in different positions. Four filler stories were written in the 2nd person, four in the 3rd person with a male protagonist, and four in the 3rd person with a female protagonist. All of these filler stories were randomly interspersed within the experimental stories.

One comprehension question followed the conclusion of each story (both filler and experimental stories). The comprehension questions were based on the text, and required little abstract thinking or inference building. For the experimental stories, the questions did not concern material in the critical sentences. The purpose of the comprehension questions was two-fold. First, it was another technique used so that

participants do not figure out the goal of the experiment. Second, they were used as a trimming technique in that participants who failed to score at least a 75% on the comprehension questions were dropped from further analysis. The reason for this was that those who scored too low were not likely to have been taking the task seriously. For half of the questions the correct answer was “yes”, and for the other half the correct answer was “no”. Again, the purpose of these varied patterns was to avoid biased responding.

In sum, a total of 24 original narratives were utilized in this experiment. Twelve of the narratives were experimental stories, and the other 12 were filler stories included to hide the purpose of the study and to discourage response bias on the part of participants. The length of the experimental stories was 26 sentences. Each experimental story included two critical sentences that involved a time shift (i.e., a moment later, a day later). These time shift sentences were always followed by a recognition probe. These time shift sentences and the subsequent probes were used to determine situation model updating. Participants were instructed to respond “yes” or “no” as to whether the probe object was mentioned in the current story. In addition to those two critical probes, each experimental story contained a third probe so that participants were less likely to detect that probes always followed time shifts. See Appendix 2, Table 1 for an example story.

Procedure

Participants read the narratives while seated by themselves in their own cubicle. All aspects of the experiment were presented on a personal computer via the stimulus presentation software E-Prime. The text was white font presented upon a black background. Stories were presented sentence by sentence, and participants advanced to

the next sentence using the space bar, and responded to probes and comprehension questions using the mouse. Thus, the reading was self-paced. Participants received no prompting or feedback regarding their reading speed. The mouse had a red “Y” sticker to indicate “yes” on the left mouse button and an “N” to indicate “no” on the right mouse button. At the beginning of the experiment two filler stories were always presented first, as practice stories, to acquaint participants with reading from the computer screen and responding using the space bar and mouse.

Participants received the remaining 10 filler stories and 12 experimental stories in a randomized order determined by an algorithm in the E-Prime program; thus, besides the two filler stories being presented first for each participant, the order of the remaining stories was different for each participant. The program collected all reaction times (i.e., sentence by sentence reading times and probe response times) and accuracy rates (i.e., probe accuracy and comprehension question accuracy).

CHAPTER 5

EXPERIMENT 1 FINDINGS

As is commonly used in studies of narrative comprehension, participants were replaced based on the following criteria. First, 5 participants with accuracy scores below 75% for the comprehension questions were replaced. The reason for this is that if those individuals could not accurately answer basic comprehension questions, then they were likely not attending very closely to the content of the story. Second, 4 participants with more than 5 reading times below 300 ms were replaced. These participants were replaced because they were clearly reading too quickly and not properly attending to the stories. Finally, for all of the response time measures, outliers were removed using a standard deviation cutoff that depends on the number of observations (van Selst & Jolicoeur, 1994).

The analyses included an investigation of the following manipulations: narrative perspective, time shift, and participant-protagonist gender match. Thus, the experiment was a 2 (narrative perspective: 2^{nd}, 3^{rd}) x 2 (time shift: short, long) x 2 (participant-protagonist gender match: matched, unmatched) within-subjects design. Dependent measures of interest included critical sentence reading time, probe reaction time, and probe recognition accuracy. All dependent measures were analyzed using a 2 x 2 x 2 repeated measures analysis of variance (ANOVA). For all analyses, all statistical results are included in tables, and the significant results and analyses of importance are highlighted in the text.

Results

Critical Sentence Reading Times

A report of all main effects and interactions for the reading time data can be found in Appendix 3 (Figures 4-8) and Appendix 4 (Tables 5 and 6). As predicted, a main effect of time shift was observed for reading time. Participants took less time to read short time shift sentences (i.e., "a moment later") (M = 1559.71 ms, SE = 65.55) relative to long time shift sentences (i.e., "a day later") (M = 1625.32 ms, SE = 66.57), F (1, 62) = 6.79, $p < .05$, $\eta_p^2 = .10$ (See Appendix 3, Figure 4). Also, participants tended to read stories written in 2nd person faster than they did 3rd person stories, although this trend was only approaching statistical significance (p = .16).

A story match x time shift interaction was observed for the reading time data, F (1, 62) = 4.63, $p < .05$, $\eta_p^2 = .07$ (See Appendix 3, Figures 5 and 6). This interaction revealed that the time effect (slower reading times for long time shifts) was more pronounced when the story was matched to the participant's gender (i.e., masculine story for a male participant, feminine story for a female participant). In other words, when the story was matched, participants took, on average, 1656.71 ms (SE = 67.77) to read the long shift sentences and 1536.11 ms (SE = 60.39) to read the short shift sentences (a difference of 120.6 ms), whereas unmatched stories resulted in a significantly smaller difference between long (M = 1593.92, SE = 69.86) and short shifts (M = 1583.32, SE = 75.23); a difference of 10.6 ms.

Probe Reaction Time

A report of all means and standard errors, main effects, and interactions for the probe reaction time data can be found in Appendix 5 (Figures 9-13) and Appendix 6

(Tables 7 and 8). A main effect of time shift was observed for probe reaction time. As predicted, participants demonstrated quicker reaction times for short time shifts (i.e., "a moment later") (M = 1300.39 ms, SE = 50.69) relative to long time shifts (i.e., "a day later") (M = 1358.56 ms, SE = 58.52), F (1, 62) = 6.26, $p < .05$, $\eta_p^2 = .10$ (See Appendix 5, Figure 9). In addition, there was also a significant effect of gender, F (1, 62) = 4.42, $p < .05$, $\eta_p^2 = .07$, with males consistently responding more quickly (males M = 1216.96 ms, SE = 76.628) than females (females M = 1441.98 ms, SE = 75.04). This overall pattern was not predicted and is not related to the predictions of interest.

Probe Recognition Accuracy

A report of all main effects and interactions for the probe recognition data can be found in Appendix 7 (Figures 14-18) and Appendix 8 (Tables 9 and 10). A main effect of story match was observed for the recognition accuracy data, F (1,62) = 6.62, $p < .01$, $\eta_p^2 = .10$ (See Appendix 7, Figure 14). Participants demonstrated higher recognition scores when stories were matched to their gender (M = 0.96, SE = .01), and lower scores when the stories were not matched to their gender (i.e., female participants reading male-typed stories; male participants reading female-typed stories) (M = 0.93, SE = .01). A story match x perspective x time shift interaction was also present for probe accuracy, F (1, 62) = 5.73, $p < .05$, $\eta_p^2 = .09$ (See Appendix 7, Figures 17 and 18). This interaction indicates that participants were most accurate in recognizing probe words when the story was matched to their gender (i.e., females reading feminine stories; males reading masculine stories), written in 2nd person, and after a short time shift.

CHAPTER 6

SUMMARY OF EXPERIMENT 1

The results of Experiment 1 replicated the anticipated patterns for temporal information that have been observed in past studies (Zwaan, 1996). That is, readers took longer to respond to a probe word after a long time shift sentence than they did after a short time shift sentence. Participants also had slower reading times for longer time shift sentences relative to short time shift sentences. In the current research, the long time shift was indicated by "a day later" and the short shift "a moment later." The purpose of using similar time shifts within Experiment 1 was to assess the degree to which readers demonstrated situation model updating to the stories, and that served as a proxy for reader engagement. This was important to examine because if the classic temporal updating effects had not been present in the Experiment 1 data, then that might indicate that readers were not processing the stories correctly, and thus, any subsequent findings could be called into question.

Of greater interest were the patterns observed with stories matched to the reader's gender and the notion of narrative perspective. The story match by perspective by time shift interaction for probe accuracy revealed that readers recognized probe words best when the story matched their gender, was written in 2nd person, and the probe came after a short time shift. The latter portion of the interaction, quickest responding to probes after "a moment later," is a classic effect (Anderson et al., 1983; Zwaan, 1996). The observed story match by time shift interaction for reading time implies greater temporal updating effects (i.e., a larger reading time difference for short vs. long time shifts) when the story

matched the reader's gender (i.e., males read a masculine-typed story; females read a feminine-typed story).

A three-way story match by perspective by time shift interaction was predicted for the dependent measures, particularly reading time, which is the dependent measure that most consistently shows temporal updating effects (Radvansky & Copeland, 2010). This particular interaction posits that the largest time shift effects would be demonstrated for the gender matched 2nd person narratives. The reason this was predicted was because, for these stories, people should best identify with the story and character. However, this interaction was not observed for the primary dependent measure, reading time data, which means that the notion of gender matching for narratives was not completely supported by the Experiment 1 data. A potential advantage to gender matched stories speaks to the theme of identification which may be necessary to engage readers (Van Der Wege, 2007). Van Der Wege's findings supported the idea that perspective taking was easier for readers when the protagonist's gender matched the reader's. The Experiment 1 stories had been developed with this consideration in mind.

Other related research (Mar & Oatley, 2008) may help explain why the story match by perspective by time shift interaction was not observed for all of the dependent measures. In a more applied domain, Mar and Oatley (2008) contend that personal reenactment of story scenes are facilitated by actual personal experience. In some cases, possibly, the Experiment 1 stories may have been viewed as satire of male and female college students. For instance, the masculine story 4 "Growing a moustache" or feminine story 6 "Spreading gossip" could have been viewed as entertaining tales, but not perceived as true life stories. This could explain why participants may have not adopted

the protagonist's point of view consistently. The participants in this study, while possibly being somewhat familiar with these themes, may not have had these experiences because they do not engage in these activities themselves.

Thus, the observed patterns may suggest that readers actively enjoyed the stories overall, but may have sometimes had difficulty picturing themselves as the protagonist. Based on the reading time pattern that showed a clear time shift for matched stories, but not unmatched stories, it appears that readers were able to picture a character when it was a theme related to them. However, a lack of a difference for the 3rd person versus the 2nd person suggests that readers may have had difficulty picturing themselves as the protagonist (which should increase the effect for the 2nd person). Thus, it seems that people could engage in themes they were more familiar with (i.e., gender matched), but had difficulty connecting on a personal level with the protagonist (i.e., no narrative perspective by time shift reading time interaction). Despite the pretesting of the Experiment 1 narratives by a similar subject pool sample prior to Experiment 1, it may have been the case that the stories did not truly reflect their experience. For example, while social acceptability was examined to ensure that the stories themed for each gender were similar on that dimension, it is possible that having some stories with lower social acceptability made it more difficult for readers to imagine themselves as the protagonist (in the 2nd person perspective). This idea was explored further in Experiment 2.

CHAPTER 7

OVERVIEW OF EXPERIMENT 2

Because the predicted pattern of results was not observed for all dependent measures in Experiment 1, Experiment 2 focused on the content of the experimental stories and, as a comparison, also explored participants' response to the Copeland and Houska (2010) stories in further depth because the purpose of this investigation was to more closely examine reader reactions to story content. The Copeland and Houska (2010) stories were used here because those stories led to a clear effect of narrative perspective, whereas the stories from Experiment 1 did not show a clear effect of perspective. In Experiment 2, participants rated the current narratives and those of past research, using a Likert-type scale, on the (1) degree of their feelings of similarity with the protagonist, based on past experience, (2) overall interest in the story, and (3) ease of imaginability as the story protagonist (i.e., how easily they could imagine themselves as the protagonist).

From the outset, the Experiment 1 stories were developed to be clearly gender themed, and in this process, some events may have become more exaggerated than events that typically occur in the average person's life. The belief was that the strong gender match would lead to more reader engagement, and would be a strong determinant of whether readers would adopt a 2nd person perspective. It is possible that a variable deeper than simple gender match with the protagonist, such as identification, might explain the fact that people did not more strongly engage with the stories written in the 2nd person perspective in Experiment 1. Identification with the protagonist, through similar past experience, may be necessary for readers to picture themselves as protagonist.

Similarity in terms of shared characteristics or engagement might trigger a default processing mode in readers. While a gender match might be necessary, it may not be sufficient for engagement. For example, while male readers may be more likely to identify with a male protagonist, if that male protagonist acts in an extreme manner, then male protagonists who are more conservative in their daily lives may not identify. It is possible that readers may adopt a 3rd person perspective rather than a 2nd if they have difficulty picturing themselves as the protagonist. Readers in Experiment 1 may have been able to picture another member of their gender partaking in activities described in the stories, but when it came to a suggestion that they themselves were the main character (i.e., the 2nd person perspective), this weakened their likelihood of situation model usage. Thus, the overall findings of Experiment 1 suggest that more commonplace events and mundane protagonist actions, such as those in the narratives used by Copeland and Houska (2010), may be necessary to drive the story match and narrative perspective effects.

The anticipated patterns of ratings for Experiment 2 were as follows. Participants were expected to assign higher similarity ratings for the Copeland and Houska (2010) narratives relative to the Experiment 1 stories. Participants were expected to have more likely experienced the events in the Copeland and Houska (2010) narratives than those in Experiment 1. Second, it was predicted that there would be greater interest ratings for the Experiment 1 narratives relative to the Copeland and Houska (2010) narratives given the story content, particularly for those that are gender matched. Participants are likely to be more interested in stories that deviate from their daily normal lives. This finding would suggest that readers were more engaged in the Experiment 1 stories. Third, participants

were hypothesized to more easily picture themselves as story protagonists for the Copeland and Houska (2010) stories relative to the Experiment 1 stories. This pattern of results would show that the unexpected pattern of data in Experiment 1 (i.e., a lack of a three way interaction), was because of an identification-enjoyment trade-off.

Lastly, the findings from Experiment 2 were directly applied to the development of the Experiment 3 story. Specifically, based on the anticipated pattern of results for Experiment 2, namely that participants would more likely identify with the Copeland and Houska (2010) narratives, the narrative to be used in Experiment 3 was written to include these characteristics. To ensure that participants would be likely to identify with this story, it was included with the other stories in the ratings task in Experiment 2. More detail about this story is presented in the Methods section of Experiment 2 and in the description of Experiment 3.

CHAPTER 8

EXPERIMENT 2 METHODS

Participants

A sample of 40 participants (20 women and 20 men) aged 18-30 years was obtained from the University of Nevada, Las Vegas psychology subject pool. Participants were awarded class credit for their participation. The only restriction for participation in this task was that participants needed to be able to speak and read English fluently. None of these individuals had participated in any aspect of Experiment 1.

Materials

The 12 narratives from Experiment 1, the 20 narratives used by Copeland and Houska (2010), and the narrative that was intended to be used in Experiment 3 were used in Experiment 2. Because reading times, probe words, and comprehension questions were not necessary for Experiment 2, they were not included and the stories were presented in paper form. For consistency, and to truly determine whether participants could identify with this perspective, all stories were presented in the 2nd person perspective. While the stories from Experiment 1 were 26 sentences long and featured stereotypical male and female content (see Appendix 2, Table 4), the 20 stories used by Copeland and Houska (2010) were shorter, varying in length between 10 and 12 sentences, and featured more gender neutral themes such as writing a paper or deciding what to watch on television (see Appendix 9, Table 11).

The narrative used in Experiment 3 was 35 sentences long and featured three characteristics believed to immerse readers in the story more than was observed in Experiment 1. In particular, the story described a mundane activity (i.e., waiting in line at

the ATM machine) with an incidental mention of the health topic: skin cancer. The story was also chosen because it was not ostensibly about skin cancer, but real-life activities to which participants in Las Vegas could relate (e.g., a hot summer day, a mention of Las Vegas in the story, being concerned about one's appearance). Moreover, the protagonist was never named in the story, but subtle mentions of gender (e.g., bra strap, "when you're a woman") were included in the story. For these reasons, it was believed that this story would interest the target population, female college students in the southwestern United States (see Appendix 9, Table 12 for the story). A more detailed description of the story is included in the method section for Experiment 3 in Chapter 12.

Procedure

All stories were printed on paper, placed into plastic covers, and were arranged in a binder in a random order (all participants saw the stories in the same random order). Participants were presented the binder containing the 32 short stories, a pen, and a rating sheet. The rating sheet included 3 questions to be answered on a 7 point Likert-type scale (1 = Not at all, 4 = Somewhat, 7 = Very much). These questions were adapted from Komeda and Kusumi (2006) and were intended to ascertain (1) the degree of identification with the protagonist through past experience, (2) the level of interest in the story, and (3) how well the participants could picture themselves as the protagonist (see Appendix 9, Table 13).

CHAPTER 9

EXPERIMENT 2 FINDINGS

The analyses included an investigation of participants' past experience with story events, interest in the story themes, and ease of imaginability as the story protagonist. Thirty-three stories were rated on the 3 dimensions of interest using a 7 point Likert-type scale. All dependent measures were analyzed using independent samples t-tests, or repeated measures analysis of variance (ANOVA). Pairwise comparisons were conducted using the Bonferroni adjustment for multiple comparisons. For all analyses, all statistical results are included in tables, and the significant results and analyses of importance are highlighted in the text.

Results

See Appendix 10 (Table 14) for a complete report of the mean story ratings and standard errors for past experience, interest, and imaginability between males and females. See Appendix 10 (Table 15) for a comparison of the mean story ratings and standard errors for the Copeland and Houska (2010) stories, Experiment 1 masculine and Experiment 1 feminine stories, and the Experiment 3 story.

Copeland and Houska (2010) Stories

Males and females did not differ significantly in their past experience with story events (Males M = 3.74, SE = 0.16; Females M = 3.87, SE = 0.19), t (38) = .056, $p > .05$. Similarly, males and females did not vary in their interest in the story themes (Males M = 3.59, SE = 0.18; Females M = 3.81, SE = 0.23), t (38) = .056, $p > .05$. They also did not differ in their ability to imagine themselves as the story protagonist (Males M = 4.75, SE = 0.18; Females M = 4.99, SE = 0.22), t (38) = .056, $p > .05$.

Experiment 1 Masculine Stories

Males rated the Experiment 1 masculine stories as closer to their past experience (Males M = 3.09, SE = 0.24) than did females (Females M = 1.64, SE = 0.13), t (38) = 5.28, $p < .05$. In addition, males were more interested in the masculine stories (Males M = 4.08, SE = 0.22) than were females (Females M = 2.89, SE = 0.19), t (38) = 4.08, $p < .05$. Lastly, males were better able to imagine themselves as the story protagonist for the masculine stories (Males M = 4.17, SE = 0.26) relative to females (Females M = 2.24, SE = 0.19), t (38) = 5.97, $p < .05$.

Experiment 1 Feminine Stories

Females rated the Experiment 1 feminine stories as closer to their past experience (Females M = 2.93, SE = 0.25) than did males (Males M = 1.85, SE = 0.20), t (38) = 3.30, $p < .05$. In addition, females were more interested in the feminine stories (Females M = 4.37, SE = 0.36) than were males (Males M = 2.64, SE = 0.26), t (38) = 3.88, $p < .05$. Lastly, females were better able to imagine themselves as the story protagonist for the feminine stories (Females M = 4.04, SE = 0.37) relative to males (Males M = 2.09, SE = 0.24), t (38) = 4.37, $p < .05$.

Experiment 3 Story

Females and males did not differ in their past experience with story events (Females M = 2.45, SE = .41; Males M = 2.40, SE = .39), t (38) = .09, $p > .05$. With regard to interest in the story theme, females were more interested (Females M = 5.05, SE = .39) than were males (Males M = 4.10, SE = .41), although this trend was approaching statistical significance (t (38) = 1.69, p = .10). Female participants were

better able to imagine themselves as the protagonist of the Experiment 3 story (M = 4.90, SE = .38) than were male participants (M = 3.45, SE = .44), t (38) = 2.49, p < .05.

Story Ratings: Males

For males, differences exist among the four story types in terms of past experience with story events, F (3,57) = 19.05, p < .01. η_p^2 = .50. Bonferroni tests revealed that males rated the Copeland and Houska (2010) stories (M = 3.74, SE = .16) significantly higher than the Experiment 1 feminine stories (M = 1.86, SE = .20) with regard to past experience with story events, (Mean Difference = 1.88, Bonferroni < .01). The Copeland and Houska (2010) stories were also closer to participants' past experience than was the Experiment 3 narrative (M = 2.40, SE = .39), (Mean Difference = 1.34, Bonferroni < .01). Also, male participants rated the Experiment 1 masculine stories (M = 3.09, SE = .24) higher for past experience than they did the Experiment 1 feminine (M = 1.86, SE = .20), (Mean Difference = 1.24, Bonferroni < .01). Although only approaching statistical significance, males rated the Copeland and Houska (2010) stories as closer to their past experience compared to the Experiment 1 stories (Mean Difference = .64, Bonferroni = .08).

For males, differences exist among the four story types in terms of rated interest in the story themes, F (3,57) = 11.24, p < .01. η_p^2 = .37. Bonferroni tests showed that males were more interested in the Experiment 3 story (M = 4.10, SE =.41) than the Experiment 1 feminine stories, (Mean Difference = 1.46, Bonferroni < .01). Males were also significantly more interested in the Experiment 1 masculine stories (M = 4.08, SE = .22) compared to the Experiment 1 feminine stories, (Mean Difference = 1.43, Bonferroni < .01). Lastly, males were significantly more interested in the story themes of the

Copeland and Houska (2010) stories (M = 3.59, SE = .18) than the Experiment 1 feminine stories (M = 2.64, SE = .26), (Mean Difference = .95, Bonferroni < .01).

Male participants were able to imagine themselves as the story protagonist to differing degrees among the four story types, F (3,57) = 23.06, p < .01. η_p^2 = .55. They were better able to imagine themselves as the main character of the Copeland and Houska (2010) stories (M = 4.75, SE = .18) compared to the Experiment 1 feminine stories (M = 2.09, SE = .24), (Mean Difference = 2.65, Bonferroni < .01. Males were also much better at imagining themselves as the protagonist for the Experiment 1 masculine stories (M = 4.17, SE = .26) relative to the Experiment 1 feminine stories (Mean Difference = 2.08, Bonferroni < .01). They were also significantly more likely to imagine themselves as the main character of the Experiment 3 narrative (M = 3.45, SE =.44) compared to the Experiment 1 feminine stories (Mean Difference = 1.36, Bonferroni < .05). The Copeland and Houska stories were rated higher in imaginability relative to the Experiment 3 narrative (Mean Difference = 1.30, Bonferroni < .05). Lastly, male participants were better able to adopt the role of the protagonist for the Copeland and Houska (2010) stories than they were able for the Experiment 1 masculine stories (Mean Difference = .58, Bonferroni < .05).

Story Ratings: Females

For females, differences exist among the four story types in terms of past experience with story events, F (3,57) = 14.73, p < .05. η_p^2 = .44. Bonferroni tests showed that females rated the events in the Copeland and Houska (2010) stories (M = 3.87, SE = .19) closer to their past experience than the Experiment 1 masculine stories (M = 1.64, SE = .13), (Mean Difference = 2.24, Bonferroni < .01). The Copeland and Houska (2010)

stories were also rated significantly higher for past experience than the Experiment 3 (M = 2.45, SE = .41), (Mean Difference = 1.42, Bonferroni < .05), and Experiment 1 feminine stories (M = 2.93, SE = .25), (Mean Difference = .95, Bonferroni < .05), Females also rated the Experiment 3 story higher in personal experience than they did the Experiment 1 masculine stories, (Mean Difference = 1.29, Bonferroni < .01).

For females, differences exist among the four story types in terms of rated interest in the story themes, F (3,57) = 11.41, p < .01. η_p^2 = .38. Bonferroni tests showed that females were significantly more interested in the Experiment 3 story (M = 5.05, SE =.39) than the Experiment 1 masculine stories, (Mean Difference = 2.16, Bonferroni < .01). Females were also significantly more interested in the Experiment 1 feminine stories (M = 4.37, SE = .36) compared to the Experiment 1 masculine stories, (Mean Difference = 1.48, Bonferroni < .01). Also, females were significantly more interested in the Experiment 3 story than the Copeland and Houska stories, (Mean Difference = 1.24, Bonferroni < .05). Lastly, females were significantly more interested in the story themes of the Copeland and Houska (2010) stories (M = 3.81, SE = .24) than the Experiment 1 masculine stories (M = 2.89, SE = .19), (Mean Difference = .92, Bonferroni < .01).

Female participants were able to imagine themselves as the story protagonist to differing degrees among the four story types, F (3,57) = 23.41, p < .01. η_p^2 = .55. They were better able to imagine themselves as the main character of the Copeland and Houska (2010) stories (M = 4.99, SE = .22) compared to the Experiment 1 masculine stories (M = 2.24, SE = .19), (Mean Difference = 2.75, Bonferroni < .01).

Females were also much better at imagining themselves as the protagonist for the Experiment 3 story (*M* = 4.90, *SE* = .38) relative to the Experiment 1 masculine stories (Mean Difference = 2.66, Bonferroni < .01). They were also significantly more likely to imagine themselves as the main character of the Experiment 1 feminine stories (*M* = 4.04, *SE* =.37) compared to the Experiment 1 masculine stories (Mean Difference = 1.79, Bonferroni < .01). Lastly, female participants were better able to adopt the role of the protagonist for the Copeland and Houska (2010) stories than they were able for the Experiment 1feminine stories, although this trend was approaching significance (Mean Difference = .96, Bonferroni = .095).

CHAPTER 10

SUMMARY OF EXPERIMENT 2

The findings of Experiment 2 followed the anticipated patterns. Males rated the Experiment 1 masculine stories higher in past experience, interest, and imaginability than did females. Similarly, females rated the Experiment 1 feminine stories higher in past experience, interest, and imaginability than did males. For both of the gender neutral story sets (Copeland & Houska, 2010) and the Experiment 3 story, there were no differences in past experience or interest between males and females. However, the latter comparison (interest in story theme) was approaching significance with females being more interested in the Experiment 3 narrative than male participants. Lastly, female participants were significantly more able to imagine themselves as the main character of the Experiment 3 narrative then were males. Taken together, these comparisons demonstrate that participants responded to the highly gender-typed stories as expected. When the strong gender themes were not present in the stories, both males and females were able to engage with the stories. With a female protagonist in the Experiment 3story, the target group, female participants, was able to visualize themselves in the story.

As for the comparisons among the four story types, predictions were confirmed for male participants. Males rated the Experiment 1 masculine stories higher in past experience, interest and imaginability than they did the Experiment 1 feminine stories. Males also rated the Copeland and Houska (2010) stories higher for past experience, interest, and imaginability compared to the Experiment 1 feminine stories. These two patterns were expected because of the highly gender-typed narratives. Stories written in the “typical day” theme also confirmed expectations. The Copeland and Houska stories

were also more in line with past experience. Additionally, the Copeland and Houska (2010) stories elicited high imaginability ratings. Because the protagonist actions were not outlandish or implausible, and story events were typical activities in the Copeland and Houska stories, it makes sense that male readers would have similar past experiences, find them more interesting, and be able to visualize themselves as the main character.

The comparisons in Experiment 2 illustrate the potential for male participants to engage with a story about a female protagonist and visualize themselves as that main character. First, males were more interested in the Experiment 3 narrative relative to the Experiment 1 feminine stories. This finding suggests that a story with a female main character can hold the interest of male readers if the theme is not overly feminine. The results also showed that male readers could visualize themselves as the protagonist of the Experiment 3 narrative better than they could for the Experiment 1 narratives. The Experiment 3 narrative was written in the "typical day" theme in the style of the Copeland and Houska (2010) stories, and so these findings for the male readers validated the use of the Experiment 3 story.

As for female participants, the findings also were consistent with predictions. The Copeland and Houska (2010) stories were greater in past experience relative to the Experiment 1 masculine and feminine stories, and the Experiment 3 story. Because the Experiment 1 stories were developed with reader engagement in mind, and less on plausibility, it would then follow that the more commonplace events of the Copeland and Houska stories be rated higher in past experience. In addition, the Copeland and Houska (2010) stories were higher in interest and imaginability for the females than the Experiment 1 masculine stories. This pattern demonstrates that female participants,

because of the similarity of their past experience with the "typical day" themed stories, can imagine themselves as the main character and have more interest in those types of stories than the highly gender-typed masculine stories.

The Experiment 3 story, with a female protagonist, was rated more interesting than the Copeland and Houska (2010) stories, and the Experiment 1 masculine stories. This finding makes sense in that the Experiment 1 masculine stories were written highly gender-typed to help the gender-matched group identify with the protagonist. Female participants also rated the Experiment 3 narrative as higher in past experience and imaginability than the Experiment 1 masculine stories. This pattern was expected because the Experiment 3 narrative was written to be closer to a "typical day" theme and it featured a female protagonist.

Taken in sum, these findings offer some insight as to why the narrative perspective effects were not demonstrated in Experiment 1. Reader interest alone appears insufficient to trigger situation model construction and updating. Instead, it seems that a reader's sense of identification with the protagonist may serve as a greater predictor. Moreover, the notion of a protagonist-participant gender match, in and of itself, may not lead to identification. It appears that story events have a considerable impact on how a protagonist is perceived by the reader. If there is a suggestion that participants are the protagonist (i.e, a 2nd person perspective), readers might need to have past experience that mirrors the story events, but most of all, be able to imagine themselves as the main character.

The story ratings revealed that participants were better able to imagine themselves as the protagonist in the Copeland and Houska (2010) stories. These stories recounted

what can be viewed as relatively innocuous, neutral, daily life events when compared to the interesting, but sometimes outlandish, heavily gender-themed stories in Experiment 1. The Experiment 3 story was selected because of the familiar life event to which many college students are accustomed (i.e., waiting in an automated bank teller line). The ratings of Experiment 2 reveal that both female and male participants can readily imagine themselves as the story protagonist. Also, female participants rated this story as most interesting of all the stories they read. These ratings imply the Experiment 3 narrative was amply engaging, but more importantly, participants were able to imagine themselves as the main character. It is unclear whether interest, identification, and ease of imaginability lead to attitude change or a behavioral response; Experiment 3 explores this idea further.

CHAPTER 11

OVERVIEW OF EXPERIMENT 3

The purpose of Experiment 3 was to apply the cognitive findings on the processing of narrative perspective to information seeking behavior in a social context. Procedurally, Experiment 3 was patterned after Experiment 1. Participants read a narrative by themselves in a cubicle. Unlike Experiment 1, however, participants only read one narrative, and the focus was not on processing (i.e., no probe words) but attitudes and behavior. Thus, a series of self-report measures were added to the procedure before the narrative, including the Bem Sex Role inventory (Bem, 1978), Reactance scale (Hong & Faedda, 1996), attitudes toward sunscreen, and health filler items. After reading the narrative participants were asked to complete the Transportation scale (Green & Brock, 2000) as well as items related to behavioral intentions, affect, and attitudes. Finally, a behavioral indicator was included at the end of the experiment.

Both the pamphlets and coupon were used as behavioral indicators and served as the primary dependent measures, in addition to self-report attitude and intention items. Behavioral intentions were directly measured by the number of informative melanoma, skin cancer, and sunscreen pamphlets and sunscreen coupons taken by participants. Three reasons exist for the behavioral indicator. First, future behavior is difficult for participants to estimate, and so it is also difficult for researchers to evaluate those intentions in a one session laboratory experiment. Moreover, a longitudinal study is impractical given the constraints of the psychology department subject pool. Second, the threat of social desirability is present in all self-report data (see Crowne & Marlowe, 1960; Paulhus, 1991a). Participants may be motivated to engage in impression management when

responding to scale items in an effort to create a positive image of themselves (Paulhus, 1991b). The behavioral indicator may work around this idea because participants may not have detected that the behavioral indicator ostensibly at the end of the experiment is actually part of the experiment (plus no one else was present watching how many items were taken by the participant). Third, although classic theorizing would suggest that attitudes are an antecedent to behavior (e.g., Fishbein & Ajzen, 1975), other research has established the challenges in connecting one's intentions with actual behavior (e.g., Greenwald, 1989). A disconnect can occur between attitudes and behavior when the behavior is interrupted by social forces. In this scenario, behavior is a result of other forces such as social norms, not simply one's attitude toward the behavior (Fishbein & Yzer, 2003). Therefore, the behavioral indicator used in Experiment 3 provides a more valid measure of actual behavior than hypothetical future behavior assessed by self-report survey responses.

There were three main predictions for the behavioral indicator data. First, because the story used in Experiment 3 scored relatively high on imaginability in the ratings that were collected in Experiment 2, a main effect of narrative perspective was hypothesized. It was anticipated, based on the suggestions from past research on narrative perspective (Copeland & Houska, 2010; Graesser et al., 1997; 2002) that participants would be most immersed in the 2nd person story. Thus, it was expected that participants would take a greater number of pamphlets and coupons after reading a story written in a 2nd person perspective relative to a 3rd person story. Second, a main effect of gender was expected based on the implications of research on gender match (Van Der Wege, 2007), as well as the gender match effects observed in Experiment 1. Specifically, it was possible that

female participants would take more pamphlets and coupons than male participants. This pattern was possible because male participants may identify less with female protagonists, based on past research (Oatley, 1996). Lastly, a gender by narrative perspective interaction was possible. On the one hand, a gender match with females and a mismatch with males may lead to a larger effect of narrative perspective for females. However, on the other hand, based on the ratings for this story from Experiment 2 relative to the stories from Experiment 1, both females and males may be able to imagine themselves as the protagonist, and thus, may both show similar effects (i.e., there would be no interaction).

A parallel set of three predictions were made for the self-report data. It was hypothesized that participants would report greater behavioral intentions toward sunscreen usage, more negative affect toward skin cancer and related conditions, more negative attitudes toward being prevented from applying sunscreen, and more positive attitudes toward wearing sunscreen after reading a story written in a 2nd person perspective relative to a 3rd person story. A main effect of gender was also predicted for the self-report data. It was possible that female participants would indicate greater behavioral intentions toward sunscreen usage, more negative affect toward skin cancer and related conditions, more negative attitudes toward being prevented from applying sunscreen, and more positive attitudes toward wearing sunscreen than would males. However, if males could identify with the protagonist, then the gender effect would not be demonstrated. A gender by narrative perspective interaction was also feasible for the self-report data, based on the gender effects observed in Experiment 1. However, if males

are able to identify with the protagonist, then both genders would show similar effects in the self-report measures.

It was also possible that the self-report data be contaminated by impression management and demand characteristics. Although the self-report measures of interest are embedded within a number of filler health items, it was possible that participants would attempt to give off a positive self-image and impression despite their responses being anonymous. Because most of the items before and after the narrative deal with health behaviors, participants may realize that they are supposed to partake in them if they are in fact "healthy" people. This tendency could cause ceiling effects in the data. Participants may also conform to demand characteristics in that they may over-report future intentions to use sunscreen, report greater fear toward skin cancer, and express greater uneasiness melanoma than they actually feel. This type of responding could occur when participants want to be "good participants" and seemingly help the experimenter support his hypothesis.

To counteract the possibility of impression management and demand characteristics contaminating the self-report data, a behavioral indicator was included at the end of the experiment. At the conclusion of the self-report items, the computer screen displayed a message that the experiment was complete and that participants could take any resources they wanted from the cubicle upon their leaving the laboratory. Because the behavioral indicator should appear to participants as separate from the actual study (i.e., not an actual part of the experiment), it is hypothesized that clearer effects will be demonstrated for the pamphlets and coupons than the self-report items measuring intentions, affect, and attitude measures.

CHAPTER 12

EXPERIMENT 3 METHODS

Participants

A sample of 60 participants (30 women and 30 men) aged 18-30 years was obtained from the University of Nevada, Las Vegas psychology subject pool. Participants were awarded class credit for their participation. The only restriction for participation in this study was that participants needed to be able to speak and read English fluently. None of these people participated in Experiments 1 or 2, nor did they participate in the rating tasks reported in Experiment 1.

Materials

For the purposes of data trimming, the 60 item Bem Sex Role Inventory (BSRI) (Bem, 1978) was used to investigate gender-typed behavior. Although the measure is nearly 30 years old, researchers note that traditional gender role expectations often hold to this day (Auster & Ohm, 2000). In fact, Harris (1994) found that all masculine traits and 16 of the feminine traits still met the original Bem inclusion criteria. Thus, in Experiment 3, male participants with high femininity scores and female participants with high masculinity scores (greater than 3.29 standard deviations above the mean) would be excluded from further analysis. Despite the possibility of female participants reporting greater masculinity scores (see Twenge, 1997), it was expected that the outlier cut off would prevent the inclusion of participants who would be unlikely to identify with a protagonist that is subtly gender typed. See Appendix 10, Table 15 for the BSRI items and rating scales.

Similarly, the Hong Psychological Reactance Scale (HPRS) (Hong & Faedda, 1996) was used as a trait measure of reactance and to rule out participants with highly reactant tendencies. Participants with high reactance scores (greater than 3.29 standard deviations above the mean) would be excluded from further analysis. One reason behind including this scale was to discourage participant bias, namely responding contrary to their own feelings and attitudes (Goodwin, 2008). Another reason for the HPRS was to control for the possibility of participants with a disposition that may reject the message altogether before evaluating it (Shohan, Trost, & Rohrbaugh, 2004). See Appendix 10, Table 16 for a list of the HPRS items and corresponding scale.

Permission was obtained by Daryl Grant to use a narrative from her eBook *Skin Cancer Advice* (Grant, n.d.), and this original story was adapted for use in Experiment 3. Unlike the Experiment 1 stories, this story was longer (35 sentences), and did not include probes or time shift sentences. It did, however, include one comprehension question used for data trimming and to disguise the purpose of the experiment. The story was chosen based on the findings of Experiment 2; participants would be more likely to relate to common story events than entertaining albeit somewhat outlandish ones. The story described a woman in a backless dress waiting in line to use the automatic bank teller machine. She was approached by a stranger about her visible mode and that she should have it checked for melanoma (see Appendix 9, Table 12). This story was also selected because it was gender-typed (feminine) and addressed a health issue relevant to the college sample in the southwest United States: skin cancer. Two versions of the story were created, a 2nd person narrative using “you,” and a 3rd person story using “she," but no character name was mentioned. Thus, four groups of participants existed from which

to make comparisons (males reading the 2nd person version, males reading the 3rd person version, females reading the 2nd person version, and females reading the 3rd person version).

Green and Brock's (2000) transportation scale was included for exploratory analyses subsequent to Experiment 3. The 12 items of this scale were created originally in the development of the Transportation Imagery Model. Thus, a number of the items are of particular consequence for future studies. For instance, Items 1,3, and 12 concern imaginability, Items 2, 4, 5, and 9 address the reader's focus during the narrative, and reader interest is assessed in Items 6, 8, and 10. A story of Experiment 3's length has yet to be used in a study concerning the Transportation Imagery Model, and so the ratings obtained will help guide future research. See Appendix 10, Table 18 for the complete transportation scale.

Eighteen self-report items were randomly interspersed within health filler items (see Appendix 10, Table 19). Six items examined behavioral intentions pertaining to general usage of sunscreen, frequency of use, reapplication practices, use of sunscreen during daily activities and during the summer, and changing one's usage. Items 7 - 10 were included to investigate participants' affective response to skin cancer, melanoma, sunburn, and prematurely aged skin. Again, these items were presented randomly in the context of other filler health conditions (e.g., obesity, caffeine dependence). Lastly, eight attitude items were presented to determine participants' reactions and attitudes toward applying sunscreen, failing to apply sunscreen, forgetting sunscreen and not being able to protect oneself, and if the store was out of sunscreen. Essentially, four questions were asked twice, but on two separate scales. The notion of varied scales was patterned after

previous research (Millar & Houska, 2007), and this variety functioned to maintain the alertness of participants.

Five pamphlets and a free sunscreen coupon were developed from resources from the American Cancer Society, Skin Cancer Foundation, and Nevada Cancer Society(see Appendix 11, Figures 19-24) and served as the behavioral indicators. The pamphlets were nearly 1 page of text and included headlines such as "Melanoma", "What's new in Melanoma research", "How can I learn more?", "How the Skin Cancer Foundation put high SPF protection on the map", and "Am I at risk?". These handouts were chosen because they included up-to-date information on melanoma research, treatment, and protective behaviors. The sunscreen coupon was nearly business card size and stated "a special coupon for you-- good for 1 free sunscreen sample".

Procedure

Participants completed the pre-narrative measures, read the narrative, and finished post-narrative items while seated by themselves in their own cubicle. To the left of the computer was a stack of pamphlets fanned out so participants could see all the titles. Before each participant began the task, the experimenter made sure that there were five pamphlets available. On top of this stack was a coupon with an e-mail address for a free sample of sunscreen. All aspects of the experiment (pre-narrative measures, the narrative, and post-narrative items) were presented on a personal computer via the stimulus presentation software E-Prime. The text was white font presented upon a black background. All self-report measures were presented with a rating scale underneath, and participants advanced to the next question or statement using the number key corresponding to their response. The story was presented sentence by sentence, and

participants advanced to the next sentence using the space bar. Thus, the reading was self-paced. The reading task concluded with one comprehension question (i.e., "Was the big mole cancerous?") At the end of the experiment, a final screen stated that the experiment was concluded and that they were free to take any of the resources in the cubicle should they want any. Finally, after the participant exited the room the experimenter counted the number of pamphlets and coupons remaining to determine how many were taken by that participant.

CHAPTER 13

EXPERIMENT 3 FINDINGS

No outliers (scores 3.29 standard deviations above the mean) were observed for either the BSRI or HPRS, and so no participants were ruled out of the subsequent analyses. However, 3 participants with inadequate reading comprehension scores (i.e., missed the sole comprehension question at the end of the narrative) were replaced. The reason for their elimination from further analyses is that if those individuals could not accurately answer a basic comprehension question, then they were likely not attending very closely to the content of the story.

The analyses included an investigation of narrative perspective and participant-protagonist gender match. The experiment was a 2 (narrative perspective: 2^{nd}, 3^{rd}) x 2 (participant-protagonist gender match: matched, unmatched) between-subjects design. The primary dependent measure was the behavioral indicators (total number of pamphlets, and sunscreen coupons taken). A secondary dependent measure consisted of the set of self-report items (mean behavioral intentions, affect, and attitudes). Dependent measures were analyzed using a 2 x 2 between- subjects analysis of variance (ANOVA) to compare mean differences, and a logistic regression to predict the probability that a participant would take any combination of pamphlets or sunscreen coupons.

Logistic regression techniques are used to predict group membership from multiple discrete/categorical independent variables with no covariates (Tabachnick & Fidell, 2001). Thus, a logistic regression analysis was employed to predict the probability that a participant would take any combination of pamphlets or coupons. The predictor variables in the model were narrative perspective and gender.

Results

Behavioral Indicators

A report of means and standard errors for the behavioral indicator data can be found in Appendix 12 (Table 20). A main effect of narrative perspective was observed, $F(1,56) = 6.12$, $p < .05$, $\eta_p^2 = .10$. Participants, regardless of gender, took more pamphlets and coupons, on average, when the story was written in 2nd person ($M = 1.17$, $SE = .29$) than 3rd person ($M = .17$, $SE = .29$) (See Appendix 13, Figure 25). A main effect of gender was not observed for the behavioral indicator. Overall, female participants did not take significantly more melanoma and skin cancer pamphlets and sunscreen coupons than males (Females: $M = .80$, $SE = .29$; Males: $M = .53$, $SE = .29$), $F(1,56) = .44$, $p > .05$. Finally, a gender by narrative perspective interaction was not present in the data, $F(1,56) = .03$, $p > .05$.

With regard to the logistic regression, a test of the full model with both predictors (narrative perspective, gender) against a constant-only model was statistically reliable, $\chi^2(2, N = 60) = 9.83$, $p < .001$. This indicates that the predictors, as a set, reliably distinguished between those who took any combination of pamphlets and coupons and those who did not. The model (including both narrative perspective and gender as predictors) was able to correctly classify 47% of those who took any combination of pamphlets or coupons and 78% of those who did not, for an overall success rate of 68.3%.

Table 21 (Appendix 12) shows the logistic regression coefficient, standard error, Wald test, observed probability value, and odds ratio (exponentiated coefficient), for each of the predictors. According to the Wald criterion, only narrative perspective

reliably predicted who would take any combination of pamphlets and coupons (Wald = 7.84), $p < .01$.The odds ratio for narrative perspective indicates that when holding all other variables constant, participants given a 2nd person narrative were 6.3 times more likely to take any combination of pamphlets or coupons than were participants given a 3rd person narrative. This confirms the finding that narrative perspective is the only reliable predictor of whether would take any combination of pamphlets or coupons.

A comparison of the number of participants and percentage of the sample who did take a combination of pamphlets and coupons and those who did not by narrative condition was conducted using univariate analysis. The data indicated that participants receiving a 2nd person story were significantly more likely to take any combination of pamphlets or coupons (50%, $n = 15$) than were those with a 3rd person story (13.3%, $n = 4$), $\chi^2(1, N = 60) = 9.78$, $p < .01$.

Self-report Items

A report of all means and standard errors, main effects, and interactions for the behavioral intentions, affect, and attitude data can be found in Appendix 13 (Tables 22-24, respectively).

Transportation Ratings

The overall mean transportation rating for the sample was 35.03 ($SE = .63$). Females were not significantly more transported by the narrative ($M = 35.40$, $SE = .91$) than were males ($M = 34.67$, $SE = .87$), $F(1, 58) = 0.34$, $p > .05$.

CHAPTER 14

SUMMARY OF EXPERIMENT 3

Experiment 3 was conducted to explore the previous cognitive findings in a more social context. In doing so, this experiment examined narrative perspective further, taking into consideration the impact of imaginability on perspective taking while reading. It was predicted that the degree to which participants identified with the story protagonist would produce attitude change and a behavioral response. Specifically, it was believed that a match between the female story protagonist and female participants would trigger the most imaginability and would cause the 2nd person perspective to be more efficacious (i.e., more positive attitudes toward sunscreen, greater fear of melanoma and skin cancer, and greater behavioral intentions and response) than the 3rd person version of the story.

In contrast, the mismatch of a female story protagonist and male participants could have made males less able to imagine themselves as the main character of the story in 2nd person. This pattern might be the case if the stories are extremely feminine in content and nature (see Experiment 1). However, if the stories are not overtly feminine or gender stereotypical, actions experienced in one's typical day may make the story events easily picturable. This appears to be the case in Experiment 3. Given the male participants' imaginability ratings of the Experiment 3 narrative (in Experiment 2), it was not surprising that male participants were also were able to imagine themselves as the protagonist. Taken together, Experiment 3 demonstrated that both male and female participants could imagine themselves as the main character of the story. The second person perspective was sufficient to trigger perspective taking when elements of the story were easily imaginable.

Research on the Transportation Imagery Model (Green & Brock, 2000) has previously demonstrated that readers are more likely to follow a story if the events are plausible and easy to picture. Details about the female protagonist, namely her thoughts and appearance (e.g., *you* wore a backless dress), were present in the Experiment 3 narrative but did not appear to obscure the otherwise common story events of the story (e.g., waiting in an automatic teller line, a stranger making remarks, seeing a doctor). It is likely that both male and female participants could easily picture themselves as the protagonist due to this theme of an average day in the life of a college student.

The observed main effect for narrative perspective (i.e., participants taking more pamphlets and coupons) makes sense from a perspective taking account, and perhaps also from a notion of personal risk. The 2nd person perspective may have triggered a focus on the self, and given the story content, participants may have felt at risk for skin cancer. Thompson and Haddock (2008) argued that people with a sense of vulnerability, or personal risk, were most apt to change their attitudes and behaviors. In Experiment 3, it could be surmised that participants took action in the context of a 2nd person narrative.

While the lack of effects for the self-report data was not anticipated, it was not completely unexpected. This pattern of results brings to mind two possibilities. First, it is possible that participants engaged in hypothesis guessing. That is, participants may have responded more positively toward sunscreen, reported that they are more fearful of skin cancer, and overestimated their future intentions to presumably support the experimenter's hypothesis. This may have inflated the overall attitudes, affect, and intention for both the 2nd person and 3rd person perspectives such that no differences would exist between the conditions. It is also reasonable to expect that freshman and

sophomore participants from the subject pool would engage in self-presentation strategies no matter what version of the story they received. Because of these possibilities which could have contaminated the self-report data, the following prompt was included at what appeared to be the end of the experiment: "Thank you for completing this experiment. If you would like to take a coupon for a free sample of sunscreen or any literature on sun protection, please help yourself to the resources in your cubicle. You are welcome to take as many as you want." Analyses of this behavioral indicator, based on the total number of pamphlets and coupons taken (or any combination thereof), showed the predicted effect.

In sum, the results from Experiment 3 may also imply that melanoma and other forms of skin cancer are gender-neutral topics. Both men and women can be prone to skin cancer if they are not careful. Perhaps with the 2nd person perspective, male participants were still able to reenact the broader themes described in the story based on their personal experience. This tendency would be consistent with the Fiction as Cognitive and Emotional Simulation Model (Mar & Oatley, 2008) despite some story clues being inconsistent with their gender. For instance, the protagonist wore a “sleeveless, backless dress,” (her) bra strap rubs against her mole, and (she) is mentioned as a “little girl,” “woman,” and “daughter.” The findings suggest that even with those gender-inconsistent clues, male participants disregarded those details and still could imagine themselves as the protagonist and experienced a situation in the safe confines of their imagination.

The benefit of the 2nd person perspective relative to 3rd person may also have to do with the degree to which the "you" message creates an affective response in readers. Kopfman et al. (1998) found that statistical evidence encouraged greater cognitive responding, whereas narrative presentation stimulated more affective responses. This

finding suggests that statistical evidence triggers a systematic processing mode in which readers evaluate and analyze evidence carefully, and a heuristic mode for narratives. In other words, narratives are not subjected to the same rigorous criticism as other forms of evidence presentation. Instead, readers use their affect as information to inform their attitudes (Albarracin & Kumkale, 2003). For example, a 2nd person narrative that causes a high level of fear may be counterproductive. Readers could picture themselves as the protagonist in a vivid, distressing health narrative, and those emotions of fear and anxiety could overwhelm them. Although not measured in Experiment 2, one might argue that the narrative recounted mundane, everyday activities, and a proactive outlook by the protagonist-- not one of crippling fear. Had the protagonist been more distressed or experienced a grimmer prognosis, perhaps the 3rd person perspective (i.e., one that implies a division between the reader and protagonist) might have been more effective than the 2nd person perspective.

The 3rd person perspective implies a separation between the narrator and the protagonist (Graesser et al., 1997). In the 3rd person perspective in Experiment 3, a narrator retold an account of what happened to a female protagonist using "she." Female participants took considerably fewer pamphlets and sunscreen coupons in the 3rd person condition relative to the 2nd person condition. Not a single male participant took a pamphlet or a sunscreen coupon after reading a narrative in which the protagonist was described as "she." Such a strong pattern of results might suggest not only a separation between narrator and protagonist, but an even greater rift between the reader and the story itself. In the 2nd person perspective, though, the same narrative can be seen as a non-threatening and plausible, and could engage all readers. The pronoun "you" then,

may be used with some caution, given story topics; particularly, caution should be taken to ensure that the theme of the story does not exceed the ability of readers to imagine themselves as the protagonist (Experiments 1 and 2), infringe upon personal freedoms, and cause readers reactance (Brehm, 1966; Brehm & Brehm, 1981), which could lead to boomerang effects (Clee & Wicklund, 1980). Keeping those limitations in mind, the 2nd person perspective may be effective in causing participants to effectively picture themselves in the story.

CHAPTER 15

CONCLUSIONS AND RECCOMENDATIONS

Summary

In a pilot study, a series of short masculine and feminine narratives were compared for masculinity/femininity, social acceptability, and clarity/writing quality. It was anticipated that their additional length, as compared to previous research in this area, (Copeland & Houska, 2010), entertaining content (relative to past research), and gender-matched themes for half of the stories (Oatley, 1996), would cause readers to become even more immersed in the narratives. Based on these ideas, Experiment 1investigated whether reader interest would augment situation model updating effects. To be precise, reader interest was predicted to be produced by not only entertaining story content, but through the manipulation of narrative perspective and gender of the protagonist.

Experiment 1 used the effects of time shifts (i.e., temporal updating) on reading times and memory as the dependent variables to indicate the level of engagement for readers. One focus in Experiment 1 was on the influence of narrative perspective. In particular, the experiment tested whether short stories written in the 2nd person perspective would engage readers to a greater degree, relative to those written in the 3rd person. Experiment 1 also investigated gender, and the notion of participant-protagonist gender match. It was hypothesized that participants would be most able to imagine themselves as the main character of a story when a participant-protagonist gender match existed. Conversely, participants should be less able to imagine themselves in a non-matched story. In addition, it was also thought that this idea of gender-match would be more important for the 2nd person perspective than the 3rd person perspective. For

example, when considering the non-matched stories, in the 3rd person perspective the reader has to imagine someone else who happens to be the opposite gender, which is not necessarily awkward; however, in the 2nd person perspective the reader has to imagine him or herself as being the opposite gender, which could be awkward.

The findings of Experiment 1 were supportive of some predictions. First, the basic temporal updating effects (Zwaan, 1996) were observed, with longer time shifts leading to slower reading times and slower reaction times to probes; however, lower accuracy for probes following long time shifts was not observed. These findings are consistent with situation model theory and imply that it is more difficult for readers to access information that is part of a previous situation model, particularly after they have just constructed a new one. The extra cognitive effort it takes a reader to do this for phrases such as "a day later" essentially signal the reader to construct a new situation model, whereas "a moment later" implies the event is contained within the same situation mode.

More importantly, Experiment 1 provided some support for the notion of a 2nd person processing advantage; namely increased situation model updating for this perspective. Unfortunately, not all of the dependent variables showed this, only one dependent variable showed the expected pattern. In particular, the primary dependent measure of reading times did not follow expectations. However, the interaction for probe accuracy does suggest that participants were becoming immersed in the story, and attending to the stories enough to determine whether a probe word was in fact present in the story. Although it was not statistically significant, participants demonstrated quicker reading times for stories written in 2nd person relative to 3rd person. Because the differences in reading times were approaching statistical significance, there may have

been other intervening factors obscuring the reading time effect. For instance, the plausibility of the narratives may have contributed to the reading time pattern. Participants who could relate to the narratives may have been more apt to demonstrate this effect, whereas those who could not relate probably did not vary in their processing of the 2nd and 3rd person narratives. It should be noted that one of the dependent variables, probe accuracy, showed the predicted three-way interaction for narrative perspective, time shift, and gender match. For this measure, accuracy was the best for probes following short time shifts in stories that were gender-matched and in the 2nd person perspective. However, the remaining conditions did not exactly fall into line with the expected outcome pattern.

In summary, Experiment 1 indicated that when readers were faced with an entertaining, plausible narrative, they did not show clear benefits (i.e., show stronger situation model effects) when the pronoun "you" was used. Past research in this area that have shown 2nd person perspective effects (Copeland & Houska, 2010) utilized less entertaining, but more common, activities such as waiting in line for the automatic teller machine or writing a term paper. Seemingly, readers may need scenarios they have experienced themselves to create mental representations and expend the effort to revise them in the face of incoming information. These data motivated a direct comparison of the current stories and those used in previous research (Copeland & Houska, 2010).

To further explore the results of the Experiment 1 data, in Experiment 2 participants rated the stories used in Experiment 1 and those used in past research (i.e., Copeland & Houska, 2010). These ratings indicated a clear difference to the common, more mundane stories used by Copeland and Houska (2010). That is, participants could

better identify with the stories used in past research than they could with the more entertaining, but novel stories in Experiment 1. Because participants could draw on their past experiences and relate to events of the short narratives, it is not surprising that they were also best able to imagine themselves as the protagonist in the Copeland and Houska (2010) stories. Thus, the Experiment 2 ratings, combined with the findings from Experiment 1 and those from Copeland and Houska (2010), suggest that interest is not the most important factor for engagement; rather, it appears that other factors, such as the ability to imagine oneself as the protagonist, possible through common past experiences, is more important.

The purpose of Experiment 3 was to apply the findings of the previous experiments and construct a health narrative intended to influence participants' attitudes, affect, behavioral intentions, and behavior itself. Thus, in addition to selecting a health topic that would be relevant to participants (i.e., melanoma and the importance of sunscreen usage), the actions and behavior of the protagonist were not exaggerated in an attempt to create an entertaining and engaging narrative. Instead, a story was chosen that would likely correspond with the idea of an "average day" theme. The protagonist was not extraordinary and she did not partake in activities to which participants could not relate. The protagonist was simply waiting in line at the automatic teller machine when a stranger approached and suggested seeing a doctor. Even though Experiment 2 indicated that the past experience ratings of this narrative were not the highest, the imaginability ratings were quite high, especially for females. It is likely that participants had neither experienced a diagnosis of melanoma nor had undergone treatment, but the imaginability

ratings suggest that participants could see themselves as the protagonist because the story events and character actions were believable.

The results from Experiment 3 supported the importance of imaginability as an important factor in leading to reader engagement for the 2nd person perspective. While self-report measures did not show an effect, both female and male participants were clearly more likely to take action when reading the 2nd person perspective version of the story than the 3rd person version. This finding strongly suggests that while gender-matching may help reader engagement for the 2nd person, it is not sufficient to lead to engagement. Readers must be able to imagine themselves as the protagonist to truly see engagement for the 2nd person perspective.

Taken together, the data from all three experiments suggest that the 2nd person narrative must contain common story events, plausible protagonist actions, and be safe enough in content for readers to imagine themselves as the main character. The pronoun "you" may not be as reactance arousing as first believed. The males' imaginability ratings from Experiment 2 suggest that they were still able to imagine themselves as the story protagonist despite the main character being female; however, not to the degree of the Copeland and Houska (2010) stories or the Experiment 1 masculine stories. A subtle insinuation that a man is a woman (and wears a backless dress and a bra) did not arouse reactance or disengagement in male participants. Then again, no participants were extremely high in masculinity as measured by the BSRI. It is also unclear whether other health narrative written in the 2nd person perspective, such as curbing binge drinking, quitting smoking, or partaking in daily cardiovascular exercise would cause reactance,

based on the nature of the actions. Questions such as these should be explored in future research.

Limitations and Future Directions

One of the limitations of Experiment 1 may lie in the instructions given to participants before they read a series of short stories. The instructions were practical and consistent with past research (Copeland & Houska, 2010). They asked participants to read the stories at a comfortable pace, but instructed them to hold their right hand on the mouse to respond to probes and left hand on the keyboard to advance the story. It is possible that without overt prompting that some participants did not engage in the story as much as they could have. Green and Brock (2000) included a "theater condition" to facilitate their participants' transportation. Participants were instructed to use their imagination, think about the setting, how the characters are feeling and how they might feel in the situation. Although their studies were paper-based, Green and Brock (2000) included reminder pages so that participants would immerse themselves in the action of the story. They reminded participants that their task while reading the stories was to engage in those activities and picture themselves in the story. Furthermore, their instructions prompted participants to become immersed in the story by taking the protagonist's actual name (e.g., "You are now Joan Mason!").

Despite the varied research questions and purpose of the work, the Green and Brock instructions procedure may be worth adopting in future studies of the 2nd person perspective. It may be that participants could benefit from the extra prompting in light of the compulsory subject pool participation without incentives. If the Green and Brock instructions were employed in a future study, such overt prompting may help the

participants better picture themselves as the protagonist in 2nd person, and cause an even greater separation among the narrator, protagonist, and reader in 3rd person.

One concern with that technique, however, is that it may not be externally valid. For example, when most people read, they are not given in depth instructions such as those. Instead, they simply read that text just like they would read any other text. Also, the results from Copeland and Houska's (2010) study and Experiment 3 showed that 2nd person perspective effects can be observed without introducing special reading instructions. However, it would be interesting to determine whether special instructions would be more likely to elicit the effect.

Another observation of note is the observed transportation ratings for the Experiment 3 narrative. Using the same transportation scale as Green and Brock (2000), as well as others in the narrative persuasion area, Experiment 3 participants reported transportation ratings quite lower than those of Green and Brock (2000). Green and Brock's participants showed transportation ratings ranging from 58.97 to 72.44 for the 12 item scale while Experiment 3 participants averaged nearly 35. The subject matter of the Green and Brock narratives varied from murder mysteries, tales of kidnappings, and included detectives as protagonists. The length of these stories was also much longer than the Experiment 3 narrative. Green and Brock's stories ranged from 3 to 10 pages whereas the Experiment 3 story was relatively much shorter - only 35 sentences. It is unclear whether the lower transportation ratings had to do more with the sobering subject matter in the Experiment 3 narrative or simply the shorter length. The latter possibility seems likely as the imaginability ratings for the Experiment 3 narrative were rather high for females, and higher than anticipated for male participants.

Future study may include fewer filler items and self-report measures to accommodate a longer, more absorbing story of the "typical day" theme for health applications. Or perhaps, the existing stories used by Copeland and Houska (2010) could be lengthened further to encourage feelings of immersion into the stories. More engagement with the stories may help stimulate the 2nd person perspective effects predicted at the outset (i.e., more situation model updating relative to 3rd person). One drawback to this strategy, however, lies in fatigue effects; the other lies in fewer data points with which to make meaningful comparisons when fewer stories exist.

Green (2008) posited that the practice of tailoring messages to participants might include a salient characteristic such as gender. Gender appeared salient in the Experiment 1 masculine and feminine narratives. It was particularly difficult for males to picture themselves as the protagonist of feminine-typed stories, based on the Experiment 2 imaginability ratings. However, female participants did not show the corresponding pattern. Some of the extant research in the area (Mar & Oatley, 1998; Oatley, 1996) might also explain the difficulty in perspective-taking. Males may simply have difficulty taking the perspective of the opposite gender (Oatley, 1996) due to broader societal implications and socialization, and it might also be due to lack of past experience (Mar & Oatley, 1998); however, it should be noted that in Experiment 3 males were able to imagine themselves even though the protagonist was female.

It is unclear whether situational or dispositional reactance may be the cause of males being unable to adopt female perspectives. Experiment 3 provided some beginning insight on this proposition. Preliminarily speaking, males did not disengage or become reactant when the pronoun "you" implied that they were a female protagonist. Future

research could explore the nature of state and trait reactance while reading using some of the online measures of reading used in Experiment 1 (i.e., reading time, probe reaction time). It is likely that the innocuous Experiment 3 narrative did not arouse reactance in males given the acceptable subject matter, however other health decisions intertwined with social values, norms, and impressions (e.g., binge drinking) may be more appropriate to investigate reactance. At present, "you" can be used in non-threatening stories, such as the skin cancer narrative in Experiment 3. Future research should investigate not only the 2nd person perspective, but also the conditions in which reactance occurs in readers.

When a story match by perspective by time shift interaction was hypothesized in Experiment 1, it was expected that the largest time shift effects would be demonstrated for the gender matched 2nd person stories. Shifting pronouns from he to she and creating gender-typed stories were expected to foster a sense of identification with the protagonist in readers. It seems that a much larger sense of identification with the protagonist was demonstrated in Experiment 3. Male participants to some extent still engaged with the narrative in 2nd person. However, as Van Der Wege (2007) demonstrated, perspective taking was easier for readers when the stories were gender matched. Hence, female participants in the Experiment 3 took pamphlets in both the 2nd person and 3rd person conditions.

Another possibility was that participants' sense of gender identity was not as extreme as it could be. Future studies could employ other measures of gender identity than the BSRI or simply include participants high in masculinity or high femininity. These outliers in traditional gender orientation may provide further insight on perspective

taking (and potentially reactance) for the non-matched gender typed stories. In another vein, ethnic identity (see Phinney, 1992) may similarly affect narrative processing. For instance, participants with a high ethnic identity may be able to identify with a character of the same ethnic background and may be less able to relate to a character who does not share their ethnic background. Future research could address this possibility, and the effect of including the 2nd person perspective to an ethnically matched story.

In the beginning, this research project investigated the role of story interest as a determinant of immersion into short stories with cognitive measures and behavioral indicators. A number of researchers have suggested identification with a protagonist as possible through common experiences or shared characteristics. Identification with a fictional main character, among a diverse sample of participants, appears a challenge indeed. However, imaginability appears the greatest determinant of cognitive processing tasks such as those investigated in this research. It does not seem as though past experience alone promotes imaginability, but plausible story events and relatable main characters.

Conclusions

When a story featured innocuous protagonist actions in a common setting, readers appeared most able to relate to the main character. When the story was tailored to the readers in this way, the data lent strong support for the 2nd person processing advantage. It is believed that the notion of imaginability, or how well people can imagine themselves as the protagonist, drives situation model updating and perhaps even behavioral responses. Preliminarily, these early data suggest that neither past experience nor interest appear adequate for situation model construction or updating, despite past research

suggesting the prominent role of immersion or absorption in a story. That is to say, readers can become interested in a story, become lost in a novel, and transported to a different time and space even though they never experienced story events in their own lives. This phenomenon may only occur if readers can imagine themselves standing in the shoes of a protagonist. In application, the Experiment 3 data revealed that participants who received the 2nd person story sought out the most pamphlets and sunscreen coupons. This practical finding is encouraging and demonstrates the utility of applying a situation model perspective to message processing theories and may shed light on existing theories of narrative-based persuasion in social psychology.

APPENDIX 1

HYPOTHESIZED READING TIME OUTCOMES

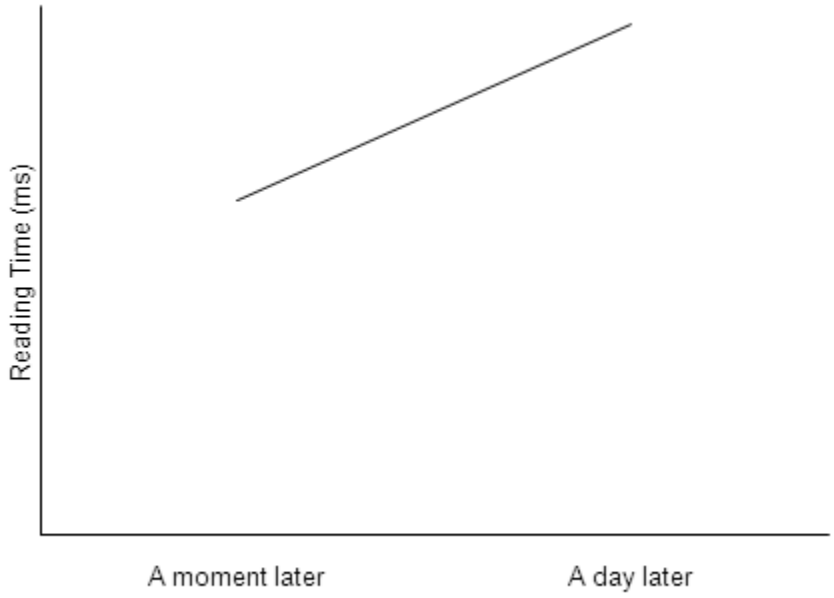

Figure 1. *Hypothesized main effect of time shift. Reading time in milliseconds.*

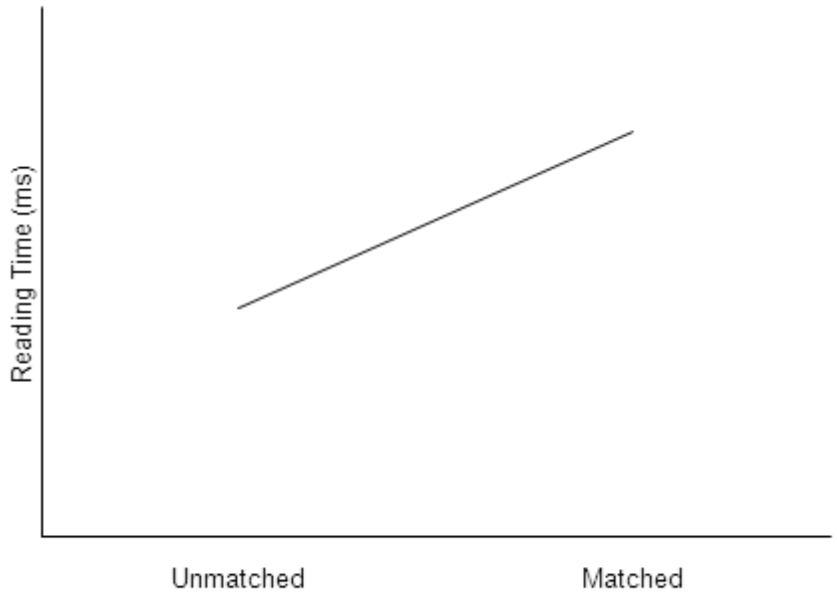

Figure 2. *Hypothesized main effect of participant-protagonist gender match. Reading time in milliseconds.*

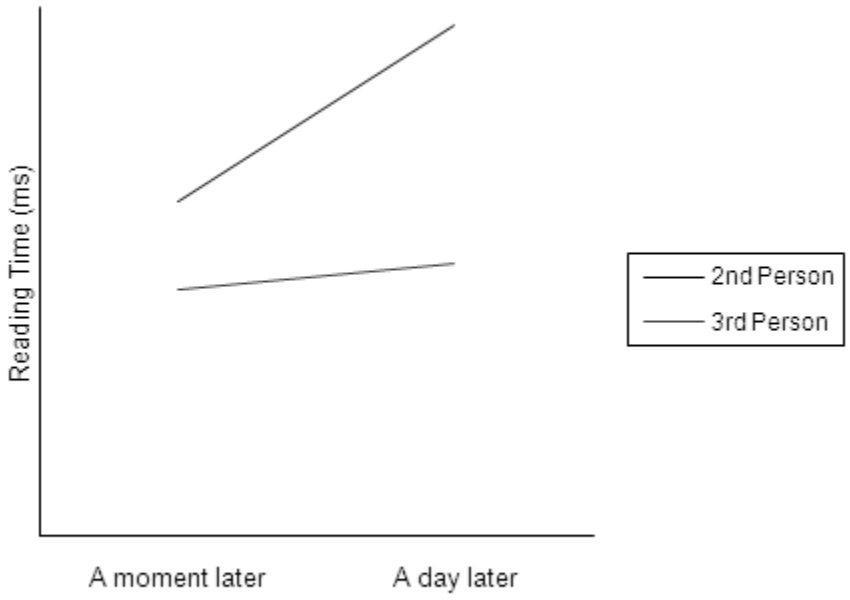

Figure 3. *Hypothesized Narrative Perspective by Time Shift Interaction. Reading time in milliseconds.*

APPENDIX 2

EXPERIMENT 1 STORY DEVELOPMENT

Table 1. *Example story*

“Playing Football With The Guys”

1 (You/Bob) had always enjoyed the sport of football.

2 Watching football on television was one thing, playing it with your friends was another.

3 (You/Bob) and (your/his) friends played a game of tackle football every Friday afternoon in the Fall.

4 There weren't as many people around the grass area then, but fewer spectators made the game less exciting.

5 Fortunately, a group of attractive sorority girls had begun to watch the last two weeks.

6 (You/He) enjoyed playing for an audience whether (you/he) (were/was) the quarterback or a receiver.

7 Lately, however, (you/Bob) had been dropping passes.

8 A pair of gloves went into (your/his) backpack.

9 A (moment/day) later, (you/Bob) walked to the grass.

Probe Word: BACKPACK

10 (Your/Bob's) friends were already there stretching and tossing around the football.

11 (You/he) greeted (your/his) teammates with fist bumps and handshakes.

12 (You/He) reached down to touch (your/his) toes, did a few twists of (your/his) torso, and ran in place.

13 Unfortunately, that may have not been enough of a warm up for (your/his) tired, tight legs.

14 The other team was on offense first last week, so (your/Bob's) team got the ball first.

Probe Word: WRISTS

15 Both teams huddled up and got ready to start the game.

16 The quarterback planned to look for (you/Bob) on the right side of the field.

17 The other team didn't expect a pass play to start off the game, and was positioned for a run.

18 (Your/Bob's) team lined up and the quarterback barked out the play.

19 The center snapped the ball.

20 (You/Bob) jogged halfway down the field and suddenly cut to the right.

21 The defender couldn't keep up with (your/his) change of pace and so (you/he) clapped twice.

22 The quarterback heard (your/Bob's) claps and fired the ball right into (your/his) gloves for an easy touchdown.

23 (You/Bob) ran toward the end zone with the football in hand.

24 A (day/moment) later, (your/Bob's) hamstring felt tight.

Probe Word: FOOTBALL

25 (You/He) didn't want to get (your/his) leg looked at by a doctor, or take some time off football.

26 Besides loving the game of football, (you/Bob) also loved the good-looking spectators watching (you/him) play.

Comprehension Question: Did (you/Bob) make an interception?

Table 2. *Pilot Study Questions*

1) On a scale of 1 to 7, please rate the story theme

> 1 to 7 scale (1 = extremely MASCULINE, 7 = extremely FEMININE)

2.) After reading the actions of the main character, please think about how those behaviors would be viewed by society at large. Please rate on a scale of 1 to 7 how socially acceptable the actions of the main character were.

> 1 to 7 scale (1 = not at all acceptable in society, 4= some people would accept it, some wouldn't, 7 = extremely acceptable in society)

3.) Please rate the clarity of the story. That is, do the events of the story make sense? Or, are there unclear sentences that do not make sense?

> 1 to 7 scale (1 = not at all clear, 4 = somewhat clear, 7 = extremely clear)

Table 3. *Pilot Study Ratings. On a 7 point scale.*

Story Title	Story Theme	Social Acceptability	Clarity/ Quality of Writing
Shooting Range	1.76 (0.14)	5.14 (0.20)	5.79 (0.28)
Movie Night	6.75 (0.08)	6.62 (0.12)	5.62 (0.28)
Golf	1.76 (0.15)	5.76 (0.24)	5.55 (0.30)
Sewing Class	6.29 (0.17)	6.46 (0.16)	3.57 (0.40)
Boxing	1.86 (0.16)	6.00 (0.19)	5.50 (0.31)
Spa Day	6.50 (0.15)	6.36 (0.17)	5.82 (0.29)
Sports Trivia	2.07 (0.19)	4.79 (0.25)	4.19 (0.39)
Boy Trouble	6.31 (0.19)	6.35 (0.21)	4.04 (0.44)
Moustache	1.31 (0.09)	5.65 (0.24)	5.27 (0.21)
Dance Team	6.69 (0.11)	6.42 (0.18)	3.65 (0.39)
Bachelor Party	1.38 (0.16)	4.69 (0.22)	5.90 (0.30)
Doll Collector	6.68 (0.11)	5.88 (0.22)	3.32 (0.44)
Locker Room Pranks	1.64 (0.26)	5.32 (0.21)	3.80 (0.40)
Baking and Feelings	6.24 (0.19)	5.64 (0.22)	3.84 (0.40)
Classic Cars	2.36 (0.20)	6.32 (0.17)	4.04 (0.41)
Ladies Night	6.72 (0.12)	3.76 (0.19)	5.63 (0.26)
Power Tools	1.64 (0.13)	6.16 (0.17)	5.50 (0.25)
Makeup Artist	6.52 (0.17)	6.64 (0.15)	5.63 (0.29)
Hot Wings	2.00 (0.24)	5.88 (0.25)	3.96 (0.43)

Table 3. (continued)

Story Title	Story Theme	Social Acceptability	Clarity/ Quality of Writing
Going Shopping	6.60 (0.12)	5.24 (0.28)	4.00 (0.44)
Playing Football	1.48 (0.11)	6.12 (0.25)	4.90 (0.29)
Blind Date	6.40 (0.18)	3.12 (0.22)	5.33 (0.25)
Gone Fishing	1.95 (0.20)	5.25 (0.32)	3.85 (0.47)
Spreading Gossip	6.24 (0.19)	3.20 (0.32)	4.57 (0.29)

Note. Means are presented with standard errors in parentheses.

"Story Theme" refers to participant ratings on the 1 - 7 Likert-type scale with 1 = extremely masculine, 7 = extremely feminine, "Social Acceptability" refers to the ratings of main character's actions (1 = not at all acceptable in society, 4= some people would accept it, some wouldn't, 7 = extremely acceptable in society), "Clarity/ Quality of Writing" indicates writing quality, or story clarity (1 = not at all clear, 4 = somewhat clear, 7 = extremely clear).

Table 4. *Experimental Stories used in Experiment 1*

Story 1 (masculine): “Playing Football With The Guys”

1 (You/Bob) had always enjoyed the sport of football.

2 Watching football on television was one thing, playing it with your friends was another.

3 (You/Bob) and (your/his) friends played a game of tackle football every Friday afternoon in the Fall.

4 There weren't as many people around the grass area then, but fewer spectators made the game less exciting.

5 Fortunately, a group of attractive sorority girls had begun to watch the last two weeks.

6 (You/He) enjoyed playing for an audience whether (you/he) (were/was) the quarterback or a receiver.

7 Lately, however, (you/Bob) had been dropping passes.

8 A pair of gloves went into (your/his) backpack.

9 A (moment/day) later, (you/Bob) walked to the grass.

Probe Word: BACKPACK

10 (Your/Bob's) friends were already there stretching and tossing around the football.

11 (You/he) greeted (your/his) teammates with fist bumps and handshakes.

12 (You/He) reached down to touch (your/his) toes, did a few twists of (your/his) torso, and ran in place.

13 Unfortunately, that may have not been enough of a warm up for (your/his) tired, tight legs.

14 The other team was on offense first last week, so (your/Bob's) team got the ball first.

Probe Word: WRISTS

15 Both teams huddled up and got ready to start the game.

16 The quarterback planned to look for (you/Bob) on the right side of the field.

17 The other team didn't expect a pass play to start off the game, and was positioned for a run.

18 (Your/Bob's)team lined up and the quarterback barked out the play.

19 The center snapped the ball.

20 (You/Bob) jogged halfway down the field and suddenly cut to the right.

21 The defender couldn't keep up with (your/his) change of pace and so (you/he) clapped twice.

22 The quarterback heard (your/Bob's) claps and fired the ball right into (your/his) gloves for an easy touchdown.

23 (You/Bob) ran toward the end zone with the football in hand.

24 A (day/moment) later, (your/Bob's) hamstring felt tight.

Probe Word: FOOTBALL

25 (You/He) didn't want to get (your/his) leg looked at by a doctor, or take some time off football.

26 Besides loving the game of football, (you/Bob) also loved the good-looking spectators watching (you/him) play.

Comprehension Question: Did (you/Bob) make an interception?

Story 2 (masculine): “An Afternoon at the Shooting Range”

1 (You/Frank) has always loved guns since that first BB gun back in elementary school.

2 It was a cold Sunday morning, and (you/he) woke up before the alarm sounded.

3 Still yawning, (you/he) walked toward the bathroom.

4 While walking toward the toilet (you/Frank) saw his Guns and Ammo magazine.

5 The magazine featured many nice guns, but they all were out of (your/his) price range.

6 (You/Frank) had just one trusty .40 caliber Springfield with a couple extra clips.

7 Flipping through the magazine, (you/he) noticed a brochure for a local shooting range.

8 (You/Frank) put aside the shooting range brochure.

9 A (moment/day) later, (you/he) made a phone call

Probe Word: BROCHURE

10 An older man with a Southern accent answered the phone.

11 (You/Frank) asked him whether the range is open on a Sunday.

12 The man said that they are open until 5pm.

13 Once (you/Frank) made it to the range, the man with the Southern accent greeted him warmly.

14 The man said that his name is Bill and that he is the owner.

Probe Word: DOOR

15 (You/Frank) introduced himself to Bill.

16 Bill then asked (you/Frank) what type of ammunition (you/he) (were/was) using these days.

17 (You/He) replied “40 caliber.”

18 Bill got up from his stool and handed (you/Frank) two boxes of ammunition-- almost 100 rounds!

19 (You/Frank) shook his hand firmly and walked back to the shooting stalls.

20 (You/He) grabbed the ear plugs out of (your/his) pants pocket.

21 One by one (you/Frank) positioned them into his ears.

22 Before (you/Frank) knew it, (you/he) went through two boxes of ammo and (were/was) surrounded by empty cartridges.

23 (You/Frank) gazed at an empty brass shell casing.

24 A (day/moment) later, (you/he) wanted more rounds.

Probe Word: CASING

25 Every time (you/Frank) (go/goes) shooting (you/he) loses sense of space and time.

26 (You/Frank) always said, "Shooting rounds is the ultimate form of stress relief."

Comprehension Question: (Do/Does) (you/Frank) own a 12 gauge shotgun?

Story 3 (masculine): “Golf (a.k.a. "avoiding the wife")”

1 (You/Mark) had been told that a good way to escape from the wife is an afternoon at the golf course.

2 An old public course was just a few miles from the sports bar (you/he) always went to.

3 (You/Mark) had passed by there lots of times while out riding (your/his) motorcycle, but never played that course.

4 (You/Mark) wasn't very good at golf, but (you/he) was getting better on the driving range.

5 It had been a while since (you/Mark) had broken the head off a club.

6 (You/He) still had a lot to lot to learn, but lessons with a golf pro tended to be expensive.

7 All of the online discussion boards and websites showed lessons at about $50 an hour.

8 (You/Mark) jotted some numbers on his notepad.

9 A (day/moment) later, (you/he) left for the course.

Probe Word: NOTEPAD

10 (Your/Mark’s) grandfather told him that old courses like these are the best to get experience.

11 More importantly, golf courses are one of the only places to get away from girlfriends and wives for a few hours.

12 The old course was public, but (you/Mark) had never seen a woman on the course--except for the girl driving the snack cart.

13 When (you/Mark) entered the pro shop, Earl-- the golf pro--approached (you/him) and asked if (you/he) would like a lesson.

14 (You/Mark) explained that he just wanted to buy a bucket of golf balls, but he asked Earl how much lessons cost anyway.

Probe Word: COURT

15 Earl said "$50 an hour or three hours for $120."

16 (You/Mark) remarked that the three hour deal is a good one.

17 Earl nodded, and asked (you/Mark) if (you/he) wanted to reserve three lessons.

18 (You/Mark) mentioned that (you/he) might take him up on his offer next time.

19 As (you/Mark) left the pro shop, (you/he) noticed no one on the driving range.

20 (You/He) hadn't been hitting balls solidly, so the extra privacy should have helped (you/him) concentrate.

21 Fortunately it was a small bucket; (your/Mark's) swing was flat and (you/he) (were/was) often hitting the ground behind the ball.

22 (You/Mark) took off (your/his) glove and shoved (your/his) 9 iron back into (your/his) bag.

23 (You/Mark) carried (your/his) bucket toward the shop.

24 A (moment/day) later, (you/he) went out the door

Probe Word: BUCKET

25 (You/Mark) felt a little dehydrated, but (you/he) decided to play some more golf.

26 After all, a bad day on the course is much better than a good day with the wife.

Comprehension Question: Was the golf pro named Earl?

Story 4 (masculine): “Growing a Moustache”

1 (You/Brock) and (your/his) friends were sitting around the living room one day planning a Halloween party.

2 The most important thing was to invite some ladies, but (you/Brock) also needed ideas for costumes.

3 Different guys would toss out ideas, but so far they all were worthless.

4 Just then a friend, Bo, grabbed (you/Brock) by the waist and put (you/him) over his shoulder.

5 (You/Brock) (were/was)set down on (your/his) feet, but then (your/his) other friends joined in.

6 The group held (you/Brock) while Bo pulled the back of (your/Brock's) briefs with all of his might.

7 The group laughed as (you/Brock) emitted a high-pitched squeal.

8 (You/Brock) laughed it off and sat on the sofa.

9 A (day/moment) later, (you/he) had a good thought.

Probe Word: SOFA

10 (You/He) could dress as a movie star from the 1970s.

11 In fact, (you/he) could take (your/his) shirt down an extra button to show off (your/his) chest hair.

12 Plus, (you/he) could grow a sweet looking moustache!

13 These were really popular in the '70s - Tom Selleck and Burt Reynolds had impressive moustaches.

14 That was it, (you/Brock) (were/was) going to do it.

Probe Word: SIDEBURNS

15 (Your/Brock's) friends laughed at (your/his) idea but (you/he) (were/was) not deterred.

16 (You/Brock) had a month to grow a dark moustache with breadth and depth.

17 After a couple of days (you/he) saw the first hints of a sweet moustache.

18 It really started to fill in after a couple of weeks.

19 (You/Brock) became a bit more self-assured and confident as (your/his) upper lip grew some cover.

20 The day before the party (you/he) woke up and showered in the dorms.

21 As (you/Brock) looked at himself in the mirror, (you/he) felt a sense of quiet confidence.

22 It was the first time in a long while that (you/he) had felt that.

23 (You/Brock) smiled broadly and set down (your/his) razor.

24 A (moment/day)later, (you/he) left (your/his) dorm room.

Probe Word: RAZOR

25 (Your/His) shoulders were back and head held high.

26 (Your/Brock's) moustache looked good.

Comprehension Question: Did (you/Brock) grow a goatee?

Story 5 (masculine): “Bachelor Party”

1 As (you/he) mixed (your/his) drink, (you/he) reminisced with (your/his) good friend Chris.

2 Chris lived in (your/his) neighborhood and (you/he) had many Nintendo battles growing up.

3 Unfortunately, Chris was getting married to his longtime girlfriend, Maria.

4 As the best man, it was (your/Ike's) responsibility to plan out Chris's bachelor party.

5 Chris didn't frequent nightclubs or bars, and was concerned about what went on in those establishments.

6 (You/Ike) reassured him that what he sees in movies is over-exaggerated and that it's a safe, time-honored tradition.

7 It took Chris a while to agree to the boys’ night out, but as soon as (you/Ike) got a "yes" (you/he) (were/was)ready to go.

8 (You/Ike) shook his hand and set down (your/his) tumbler.

9 A (moment/day) later, (you/Ike) drove to a bar.

Probe Word: TUMBLER

10 First thing (you/Ike) saw upon entering was an attractive brunette tending the bar.

11 (His/Your) first instinct was to sneak in a quick beer, but (you/he) relented-- (you/he) (were/was) supposed to be checking out the place.

12 (You/Ike) then noticed an old friend from high school stumbling into the bar.

13 He remarked that he was surprised to see (you/Ike) in a place like this.

14 (You/Ike) explained that (you/he) (were/was) only trying to figure out whether Chris would like this place for his bachelor party.

Probe Word: WHISKEY

15 (Your/His) friend exclaimed that this was his favorite bar and that Chris should feel at home with the crowd.

16 "If the bouncers weren't too uptight, this bar might just work for the bachelor party," (you/Ike) remarked.

17 (You/He) walked toward the bar area to get a drink and take in some of the basketball game.

18 As you sat at the bar (you/Ike) munched on free peanuts out of a large snack bowl.

19 (You/He) watched a few minutes of the third quarter and noticed the people ordering drinks.

20 Best of all, none of the muscular guys who approached the bar bothered (you/him).

21There were a couple of old guys shooting the bull in the corner, but everyone else was normal.

22 (You/Ike) decided that, all in all, this would be a good place for Chris's bachelor party.

23 (You/He) stood up and pushed in the old barstool.

24 A (day/moment) later, (you/Ike) walked to (your/his) car.

Probe Word: BARSTOOL

25 Before driving away (you/he) sent Chris a text.

26 "Bachelor party is on. Meet at my place: 6pm"

Comprehension Question: Was there a brunette tending the bar?

Story 6 (masculine): “Power Tools”

1 (You/Pete) and (your/his) girlfriend just moved into a house together.

2 (You/He) had only been dating Darlene for a year, but this move made sense.

3 First, she had been pressuring (you/him) to make more of a commitment.

4 And second, it made more sense to pay for one house than to pay rent for two apartments.

5 (Your/Pete's) girlfriend said that she would decorate, but she expected (you/him) to do all of the repairs.

6 The first repair was to fix a baseboard that was loose.

7 It was sticking out from the wall and could be dangerous.

8 (You/Pete) squatted down and held a hammer tight.

9 A (day/moment) later, the cable guy phoned.

Probe Word: HAMMER

10 The guy said that they wouldn't be able to make it out today.

11 This was frustrating because (you/Pete) had planned to work around the house all day.

12 (You/He) went to the garage and got (your/his) toolbox.

13 The new drill that (your/his) dad bought (you/him) was pretty nice.

14 It had twenty-four different attachments and eight different speeds.

Probe Word: SUITCASE

15 (You/Pete) often remarked that it felt good to wield so much power in (your/his) hand.

16 In the kitchen (you/he) tightened some screws on the cabinets and installed some blinds with (your/his) trusty drill.

17 After an hour of work, (you/he) decided to take a short break.

18 (You/Pete) took a peek in the fridge and saw some steaks.

19 Even though Darlene was saving them for a party that weekend, (you/he) decided to light up the grill now.

20 It didn't take long to cook them, especially because (you/he) liked (your/his) steaks a little bloody.

21 After eating (you/Pete) grabbed a snack and moved into the living room.

22 There must be a basketball game on tv.

23 (You/He) sat on the couch and ate some popcorn.

24 A (moment/day) later, (you/Pete) heard some rain drops.

Probe Word: POPCORN

25 It seemed like (you/he) wouldn't be able to ride (your/his) motorcycle.

26 (You/Pete) decided to just take a nap on the couch instead.

Comprehension Question: Did (you/Pete) grill steak?

Story 1 (feminine): “Movie Night with the Girls”

1 (You/Lise) remembered what it was like to be a young teenage girl.

2 One of (your/her) favorite pastimes was getting all (her/your) girlfriends together.

3 Whether it was going out to the movies, or going for ice cream, (you/Lise) enjoyed it all.

4 (You/She) especially liked the sleepovers because (you/she) could cook and watch movies with (your/her) friends.

5 (Your/Lise's) mother was a private person, and always cautious about having people over at the house.

6 Eventually she gave in and let (you/Lise) throw a slumber party.

7 The one stipulation was that (your/Lise's) parents had to review (your/her) guest list.

8 (You/Lise) showed them the notebook with all the names.

9 A (moment/day) later, (you/she) called (your/her) good friends.

Probe Word: NOTEBOOK

10 (You/She) told them to bring some snacks and DVDs.

11 (You/Lise) would bake the cupcakes and cookies.

12 (You/She) knew that Sarah would want to watch Twilight.

13 Enough thinking about movies, (you/Lise) had work to do.

14 (You/She) had to vacuum, mop, and wash some blankets for the girls.

Probe Word: PAINTING

15 (You/Lise) began straightening up around the house.

16 Then (you/she) heard (your/her) cell phone.

17 It was a text message from Sarah.

18 Sarah and Miranda offered to help (you/Lise) take out the trash and clean.

19 The house wasn’t overly messy, so it didn't take too long to get it ready for company.

20 (You/Lise) sent them back a courteous reply.

21 “Help is always appreciated.”

22 (You/She) pondered over what else (your/her) friends could help with.

23 (You/Lise) took her push broom out of the closet.

24 A (moment/day) later, she heard a loud knock.

Probe Word: PUSH BROOM

25 Miranda was outside (your/Lise's) front door with a vase of magnolias.

26 “The irony!” (you/Lise) exclaimed, "Steel Magnolias is such a good movie."

Comprehension Question: Did Miranda text (you/Lise)?

Story 2 (feminine): “A Day of Pampering at the Spa”

1 What person doesn’t love a day of pampering?

2 (You/Brie) (were/was) no exception.

3 (You/She) liked getting massages, facials, manicures, and pedicures at least once a month.

4 Maybe that was some of the reason that (your/her) boyfriends called (you/her) “high maintenance.”

5 Nevertheless (you/Brie) enjoyed the opportunity to relax and beautify (yourself/herself).

6 (You/She) glanced down at (your/her) nails and noticed (your/her) French manicure lifting.

7 It was almost time to make another appointment at (your/her) favorite spa: Sheer Rejuvenation.

8 (You/Brie) flipped through (your/her) planner and took a look.

9 A (moment/day) later, (you/she) sent Jill a text.

Probe Word: PLANNER

10 “What time should I meet you at the spa on Friday?” Jill asked.

11 (You/Brie) replied, “1 pm.”

12 Jill was in for spa day.

13 Sheer Rejuvenation Salon was also known for their massages.

14 The long school week progressed, but (you/Brie) tried to think positively.

Probe Word: HAIRCUT

15 Before (you/she) knew it, it was Friday-- SPA DAY!

16 (You/Brie) grabbed (your/her) gym bag.

17 (You/She) packed a change of comfortable clothes and toiletries.

18 The receptionist greeted (you/Brie) at the salon.

19 (You/She) (were/was) told that Jill was already in back.

20 (You/Brie) just couldn't wait to lay on the massage table.

21 (You/She) finally got to rest (your/her) forehead on the padded face cradle.

22 Then the deep tissue massage began, and it felt great!

23 (Your/Brie's) head seemed to melt into the pillow.

24 A (moment/day) later, (you/she) felt so relaxed.

Probe Word: PILLOW

25 (Your/Her) spa days always follow the same order.

26 Massage first, then a facial, a manicure, and finally the pedicure.

Comprehension Question: Is "spa day" on Saturdays?

Story 3 (feminine): “Ladies Night Out”

1 Looking cute has its rewards.

2 A cute skirt and a smile go a long way in this big city.

3 (You/Kate) and (your/her) friends often cut lines and got in free at night clubs.

4 (You/Kate) liked to dance and there’s still no better place to get down than in Las Vegas night clubs.

5 Sometimes (you/she) (were/was) able to get into VIP areas if bouncers recognized (you/her).

6 Unfortunately (you/she) had to flirt with creepy guys to get free drinks.

7 Promoters promised free champagne and hosts bought (you/her) shots the last time she was out.

8 One VIP host gave (you/Kate) a club pass.

9 A (moment/day) later, (you/she) texted him “thank you.”

Probe Word: CLUB PASS

10 The VIP host texted (you/her) back.

11 The text explained that (you/she) didn’t have to wait in line if (you/she) made it to the club before 2 a.m.

12 (You/Kate) really wanted to try out this new club and so (you/she) sent a mass text message to (your/her) girls.

13(You/Kate) mentioned that they could bring as many guests as they wanted.

14 However, the VIP host repeated that (you/Kate) could only bring (your/her) hot looking girlfriends-- no guys.

Probe Word: E-MAIL

15 (Your/Kate's) group swelled to a grand number of nine hot girlfriends.

16 Again, (you/Kate) grabbed for (your/her) cell phone.

17 (You/She) sent a message to the VIP host: “meet me out in front.”

18 Each of (your/her) friends showed up because this is like the hottest club right now.

19 Once the party arrived, (you/Kate) was escorted into the club with (your/her) friends.

20 It was a crazy night - (you/Kate) and (your/her) friends enjoyed lots of free drinks by flirting with guys.

21 It was so crazy that (you/Kate) even started dancing on the bar.

22 (You/Kate) got an adrenaline rush from the cheering crowd.

23 Stepping down, the heel on (your/her) new shoes broke.

24 A (moment/day) later, (your/her) ankle felt sore.

Probe Word: NEW SHOES

25 (You/Kate) hoped it wasn't serious.

26 If it was, (you/she) wouldn't be able to go out clubbing again next week.

Comprehension Question: Did (you/Kate) dance on the bar?

Story 4 (feminine): “Makeup Artist”

1 (You/Jen) (have/has) always enjoyed doing (your/her) friends’ makeup.

2 (Your/Jen's) friends (have/has) noticed (your/her) knowledge about cosmetics after taking just a couple classes.

3 Some of them really liked how (you/she) did (your/her) own makeup and have asked for (your/her) help.

4 In addition to (your/Jen's) job on campus, (you/she) helped with makeup and made some extra cash.

5 (You/Jen) did (your/her) friends’ makeup at a rate much lower than the salons charge.

6 Last May, (your/her) best friend Samira was getting married.

7 (You/Jen) offered to do her hair and makeup for her to save money, and to gain experience.

8 (You/Jen) looked at which lipstick might work for her.

9 A (moment/day) later, (you/Jen) picked a color.

Probe Word: LIPSTICK

10 (You/she) also had lots of eye shadow, eye liner, eyebrow pencils, and foundation.

11 (You/Jen) could always match makeup to (your/her) friends’ looks.

12 Even though your friends have given (you/her) many compliments, (you/she) still felt nervous.

13 (You/Jen) had never done makeup for a big event like this.

14 (You/she) wanted to make (your/her) good friend look classy and stylish at the same time.

Probe Word: QUINCEANERA

15 (You/she) visualized what Samira would look like walking down the aisle.

16 The plan was a subtle brown lipstick for her cinnamon complexion.

17 (You/Jen) remembered (your/her) makeup teacher's expert opinion.

18 "Always line the lips with a pencil to prevent lipstick bleeding."

19 Under (your/her) breath, (you/she) reassured (yourself/herself) that (you/she) could do it.

20 (You/Jen) walked out of your apartment toward the parking lot with (your/her) belongings.

21 Before (you/she) knew it, (you/Jen) would be helping a friend on the biggest day of her life.

22 The makeup case went in (your/her) car trunk.

23 (You/she) draped (your/her) jacket across the back seat.

24 A (moment/day) later, it began to rain.

Probe Word: JACKET

25 At the time (you/she) thought it was a bad sign; weddings and rain do not mix very well.

26 Fortunately now Samira and Amir are happy newlyweds.

Comprehension Question: Was (your/her) friend named Samantha?

Story 5 (feminine): "Blind Date"

1 (You/Brooke) (were/was) in (your/her) third year of college when (your/her) life took an unexpected turn.

2 Things had gone pretty smoothly up until that point.

3 (You/Brooke) really liked (your/her) education classes.

4 The education professors were nice and always willing to help students.

5 It was a Monday morning, and (you/Brooke)had just gotten out of the shower and wrapped a towel around (yourself/herself).

6 As (you/she) walked to the sink (you/she) caught a glimpse of (your/her) hair in the mirror.

7 It was really long and it looked like there might be split ends.

8 (You/Brooke) reached in the top drawer for (your/her) hairbrush.

9 A (moment/day) later, (you/she) got a phone call.

Probe Word: HAIRBRUSH

10 It was (your/her) mom and she told (you/Brooke) that (your/her) father had lost his job.

11 Because of that, they wouldn't be able to pay (your/her) tuition anymore.

12 (You/Brooke) didn't know what to do, but a girlfriend had told (you/her) about an easy way to make some cash.

13 (Your/Her) friend worked for a dating service during the summer, but that wasn't for (you/Brooke).

14 Unfortunately, the only jobs that were hiring were not paying well at all.

Probe Word: COUNSELOR

15 In fact, the money was close to minimum wage - that definitely wouldn't cover tuition.

16 As sad as it seemed, (you/Brooke) thought about working with the dating service.

17 (You/She) (were/was) told that it would mainly consist of a lot of flirting while going out on dinner dates.

18 (You/Brooke) feared that the blind dates might be led on and want to go on more dates.

19 (You/She) rationalized to (yourself/herself) that (you/she) didn’t have to go on a second date.

20 Eventually (you/Brooke) met (your/her) friend at a coffee shop and asked her to arrange a blind date.

21 (Your/Her) friend smiled and said that she would do it.

22 The arrangements were made for that weekend.

23 (You/Brooke) sat in (your/her) chair and sipped (your/her) coffee.

24 A (moment/day) later, (you/Brooke) glanced at (your/her) watch.

Probe Word: COFFEE

25 (You/Brooke) could not believe that (you/she) (were/was) going to do this, but (you/she) needed the tuition money.

26 (You/Brooke) wondered who your first date would be.

Comprehension Question: Are (you/Brooke) an education major?

Story 6 (feminine): “Spreading Gossip”

1 (You/Anne) would never admit it, but deep down (you/she) (were/was) jealous of (your/her) classmate Crystal.

2 Crystal always did well in her classes without trying, and seemed to get all the attention.

3 It wasn't like Crystal flirted with the most popular boys-- they came to her.

4 All of Crystal's pictures on Facebook seemed to come out well too.

5 Every weekend, Crystal's Facebook wall was full of flirtatious comments and flattery.

6 All of this got old, especially when (you/Anne) and the rest of (your/her) friends had to try hard to be noticed.

7 To cope, (you/Anne) often cursed Crystal and wished she would gain 100 pounds and end up married to some ugly deadbeat.

8 (You/Anne) became fed up and grabbed some cookies.

9 A (moment/day) later, Crystal e-mailed (you/Anne).

Probe Word: COOKIES

10 As (you/Anne) munched on (your/her) snack, (you/she) clicked on the e-mail from Crystal.

11 The subject line read "It's my party and you're invited!"

12 (You/She) read that it would be a big party since Crystal's parents were away at Lake Tahoe.

13 (You/Anne) replied to Crystal's message and RSVP'ed for just (yourself/herself).

14 (You/She) thought that, if anything, (you/she) would be able to catch (your/her) friends up on the latest gossip.

Probe Word: LOS ANGELES

15 Or, if Crystal did anything embarrassing at the party (you/Anne) could hold it against her.

16 (You/Anne) finished the week of classes and actually came up with an evil plan.

17 That night (you/she) found a photo of Crystal from this past year.

18 (You/She) spent hours editing it on Photoshop so that it looked like Crystal was kissing one of the biggest nerds in school!

19 As soon as (you/Anne) finished, (you/she) posted the picture right away on Facebook.

20 (You/She) knew it wouldn't take long for people to see it.

21 Within just a couple minutes, (your/her) friend Penelope texted (you/Anne) to say that everyone she knew had seen the photo.

22 Penelope said that nobody wanted to go to a party being thrown by a loser like Crystal.

23 (You/Anne) laughed and tossed (your/her) phone on the dresser.

24 A (moment/day) later, (you/she) felt some regret.

Probe Word: DRESSER

25 Maybe (you/Anne) shouldn't have done such a mean thing to Crystal.

26 After all, Crystal might do something to get back at (you/her)!

Comprehension Question: Did (you/Anne) upload a fake photo to Facebook?

APPENDIX 3

OBSERVED READING TIME FIGURES

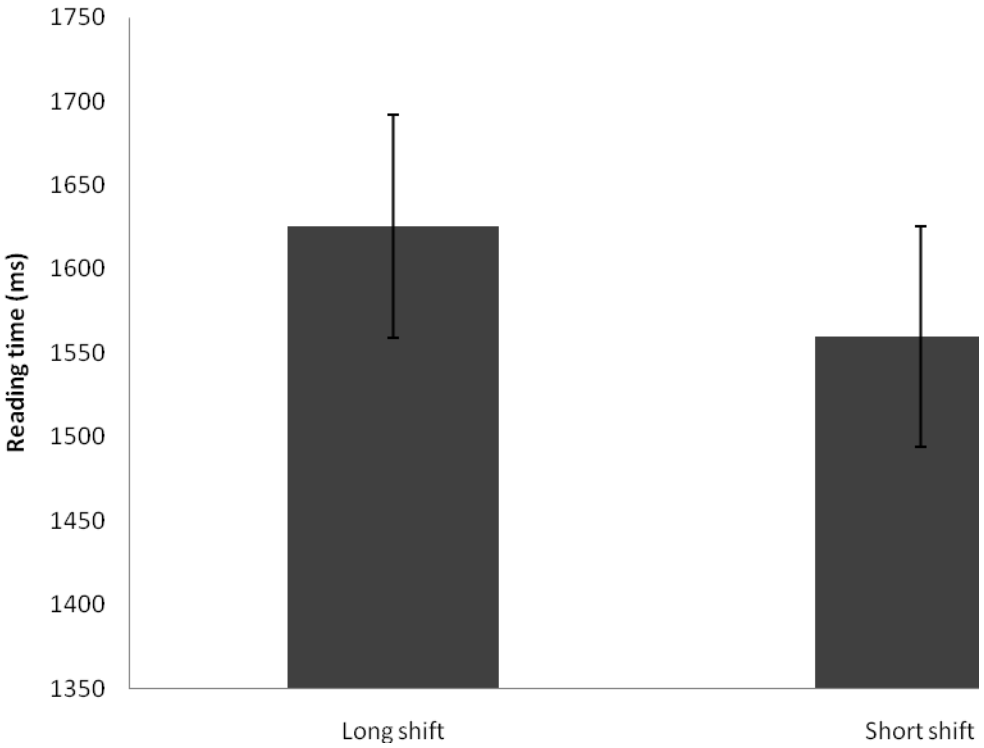

Figure 4. *Main effect of time shift from Experiment 1. Reading time in milliseconds.*

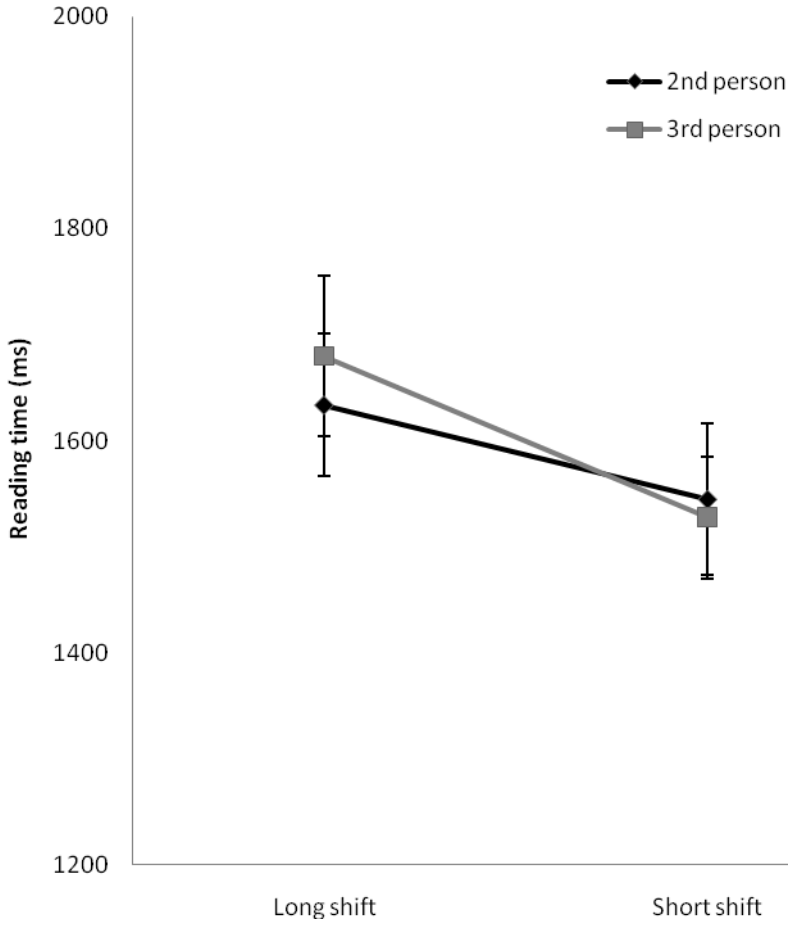

Figure 5. *Mean Reading time (in milliseconds) for matched stories from Experiment 1.*

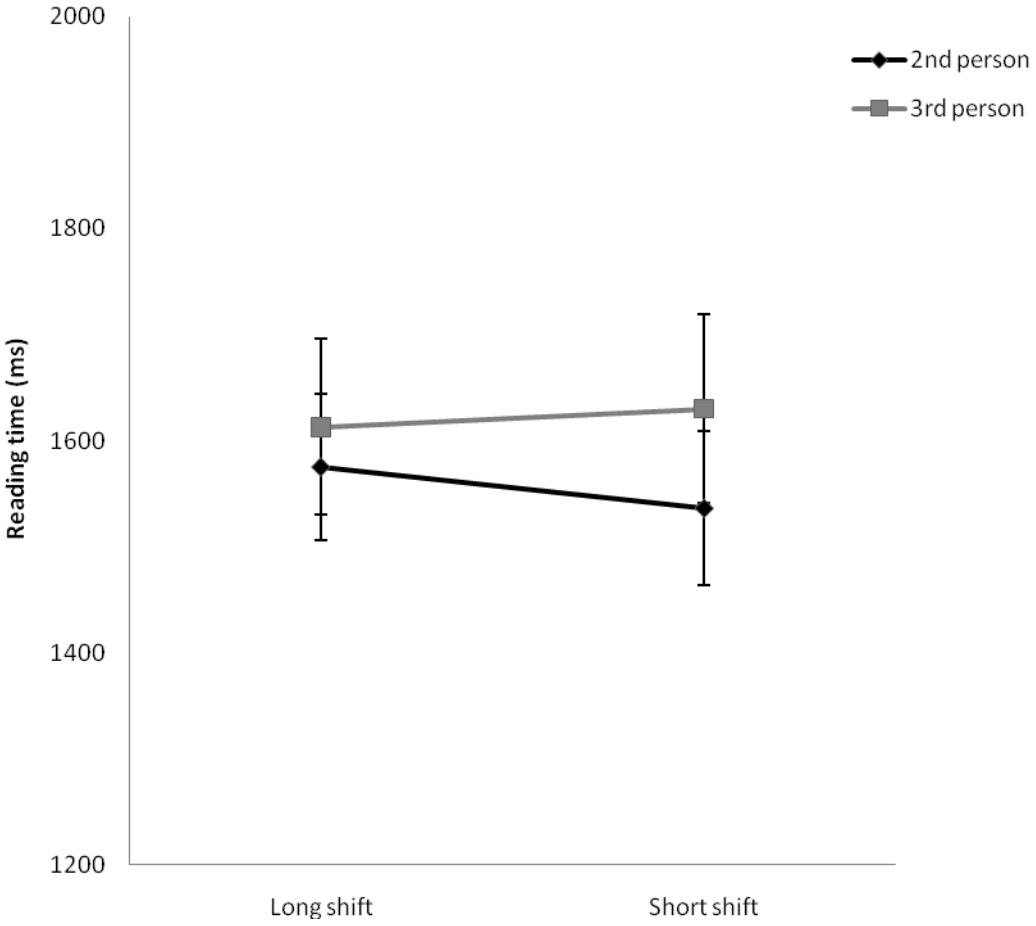

Figure 6. *Mean Reading time (in milliseconds) for unmatched stories from Experiment 1*

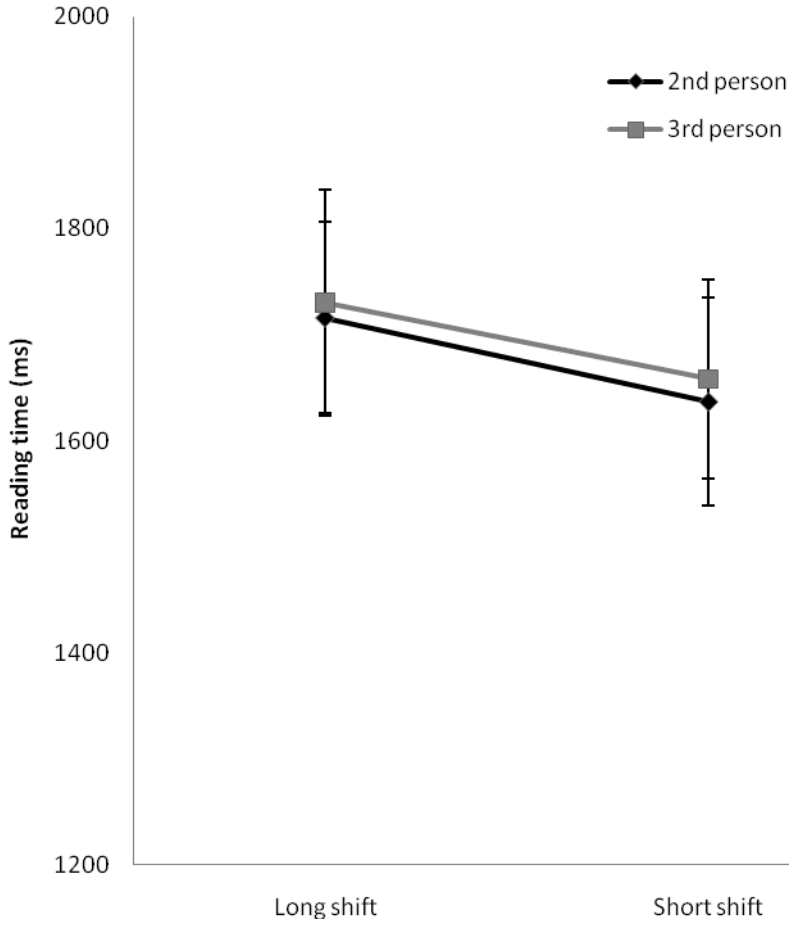

Figure 7. *Mean Reading time (in milliseconds) for female participants from Experiment 1*

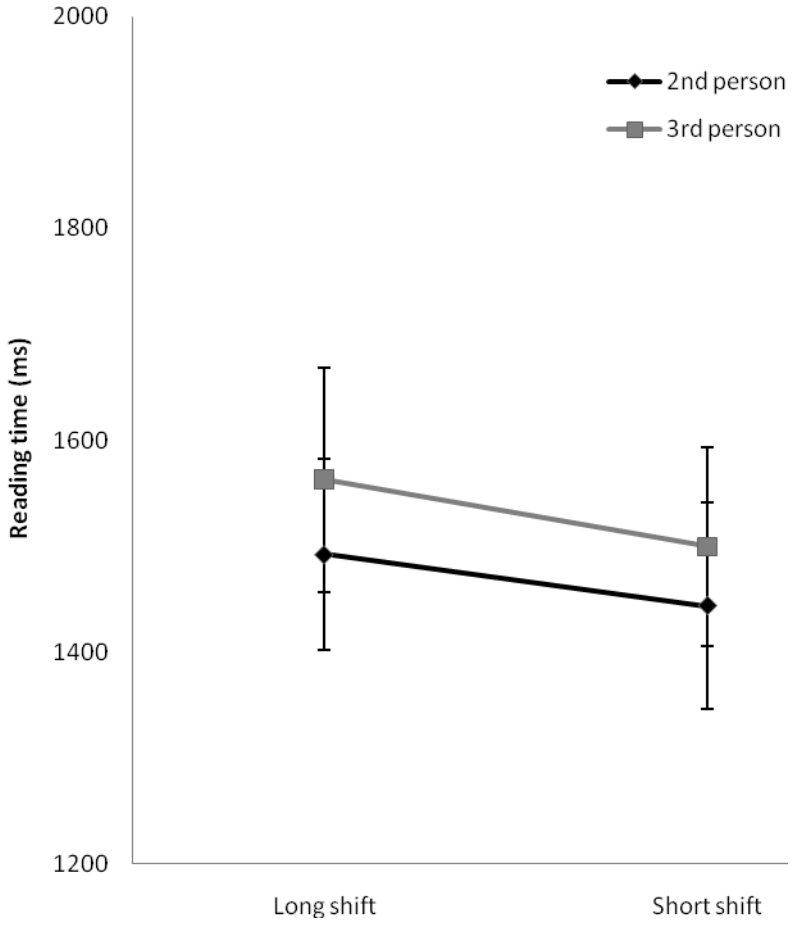

Figure 8. *Mean Reading time (in milliseconds) for male participants from Experiment 1*

APPENDIX 4

OBSERVED READING TIME TABLES

Table 5. *Main effects and interactions for reading time. F values represent calculated ANOVAs.*

Variable	*F*	Sig
Gender	2.05	$p > .05$
Story Match	0.09	$p > .05$
Perspective	1.99	$p > .05$
Time	6.79	.01
Story Match x Gender	0.21	$p > .05$
Story Match x Perspective	0.75	$p > .05$
Story Match x Time	4.63	.04
Perspective x Gender	0.65	$p > .05$
Perspective x Time	0.01	$p > .05$
Time x Gender	0.15	$p > .05$
Story Match x Perspective x Time	1.28	$p > .05$
Story Match x Perspective x Gender	0.89	$p > .05$
Story Match x Time x Gender	0.01	$p > .05$
Perspective x Time x Gender	0.05	$p > .05$
Story Match x Perspective x Time x Gender	0.01	$p > .05$

Table 6. *Means and standard errors for critical sentence reading times in milliseconds.*

	M	*SE*
Gender - Female	1685.41	91.71
Gender - Male	1499.62	91.71
Story match - Matched	1596.41	62.67
Story match - Unmatched	1588.62	69.42
Perspective - 2nd person	1572.38	64.28
Perspective - 3rd person	1612.65	68.45
Time - Long shift	1625.32	66.57
Time - Short shift	1559.71	65.55
Females, Matched story	1695.18	88.62
Females, Unmatched story	1675.64	98.18
Males, Matched story	1497.64	88.62
Males, Unmatched story	1501.61	98.18
Females, 2nd person	1676.73	90.90
Females, 3rd person	1694.09	96.81
Males, 2nd person	1468.04	90.90
Males, 3rd person	1531.20	96.81
Females, Long shift	1723.05	94.14
Females, Short shift	1647.77	92.71
Males, Long shift	1527.58	94.14
Males, Short shift	1471.66	92.71
Matched story, 2nd person	1589.05	66.67
Matched story, 3rd person	1603.77	63.37
Unmatched story, 2nd person	1555.72	66.34
Unmatched story, 3rd person	1621.53	79.47
Matched story, Long shift	1656.71	67.77
Matched story, Short shift	1536.11	60.39
Unmatched, Long shift	1593.92	69.86
Unmatched, Short shift	1583.32	75.23
2nd person, Long shift	1604.26	63.47
2nd person, Short shift	1540.50	69.25
3rd person, Long shift	1646.37	75.39
3rd person, Short shift	1578.92	66.40

Table 6. (continued)

	M	*SE*
Females, Matched story, 2nd person	1699.51	94.28
Females, Matched story, 3rd person	1690.84	89.63
Females, Unmatched story, 2nd person	1653.94	93.82
Females, Unmatched story, 3rd person	1697.34	112.38
Males, Matched story, 2nd person	1478.58	94.28
Males, Matched story, 3rd person	1516.69	89.63
Males, Unmatched story, 2nd person	1457.50	93.82
Males, Unmatched story, 3rd person	1545.71	112.38
Females, Matched story, Long shift	1769.79	95.84
Females, Matched story, Short shift	1620.56	85.40
Females, Unmatched story, Long shift	1676.30	98.80
Females, Unmatched story, Short shift	1674.97	106.40
Males, Matched story, Long shift	1543.62	95.84
Males, Matched story, Short shift	1451.66	85.40
Males, Unmatched story, Long shift	1511.55	98.80
Males, Unmatched story, Short shift	1491.67	106.40
Females, 2nd person, Long shift	1716.23	89.76
Females, 2nd person, Short shift	1637.22	97.94
Females, 3rd person, Long shift	1729.87	106.61
Females, 3rd person, Short shift	1658.31	93.91
Males, 2nd person, Long shift	1492.30	89.76
Males, 2nd person, Short shift	1443.79	97.94
Males, 3rd person, Long shift	1562.87	106.61
Males, 3rd person, Short shift	1499.53	93.91
Matched story, 2nd person, Long shift	1633.53	67.36
Matched story, 2nd person, Short shift	1544.57	71.39
Matched story, 3rd person, Long shift	1679.89	75.88
Matched story, 3rd person, Short shift	1527.65	57.49

Table 6. (continued)

	M	*SE*
Unmatched story, 2nd person, Long shift	1575.00	69.25
Unmatched story, 2nd person, Short shift	1536.44	72.35
Unmatched story, 3rd person, Long shift	1612.85	83.01
Unmatched story, 3rd person, Short shift	1630.20	89.39
Females, Matched story, 2nd person, Long shift	1761.25	95.26
Females, Matched story, 2nd person, Short shift	1637.78	100.97
Females, Matched story, 3rd person, Long shift	1778.34	107.32
Females, Matched story, 3rd person, Short shift	1603.35	81.30
Females, Unmatched story, 2nd person, Long shift	1671.21	97.94
Females, Unmatched story, 2nd person, Short shift	1636.67	102.32
Females, Unmatched story, 3rd person, Long shift	1681.39	117.39
Females, Unmatched story, 3rd person, Short shift	1713.28	126.41
Males, Matched story, 2nd person, Long shift	1505.81	95.26
Males, Matched story, 2nd person, Short shift	1451.36	100.97
Males, Matched story, 3rd person, Long shift	1581.44	107.32
Males, Matched story, 3rd person, Short shift	1451.95	81.30
Males, Unmatched story, 2nd person, Long shift	1478.79	97.94
Males, Unmatched story, 2nd person, Short shift	1436.21	102.32
Males, Unmatched story, 3rd person, Long shift	1544.31	117.39
Males, Unmatched story, 3rd person, Short shift	1547.12	126.41

APPENDIX 5

OBSERVED PROBE REACTION TIME FIGURES

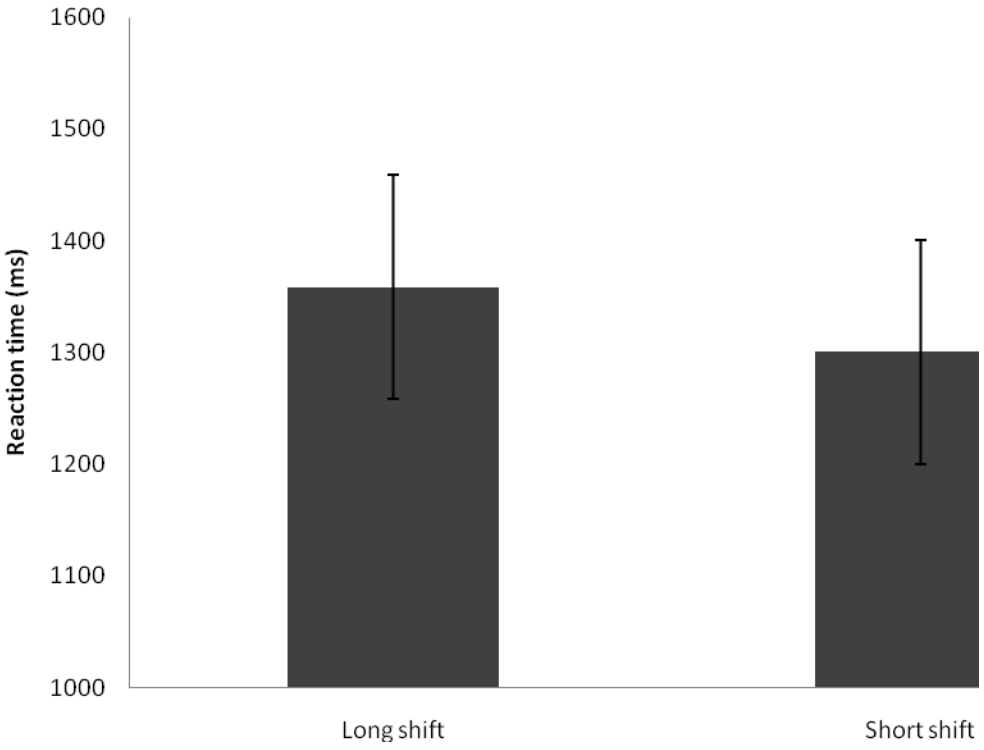

Figure 9. *Main effect of time shift from Experiment 1. Reaction time in milliseconds.*

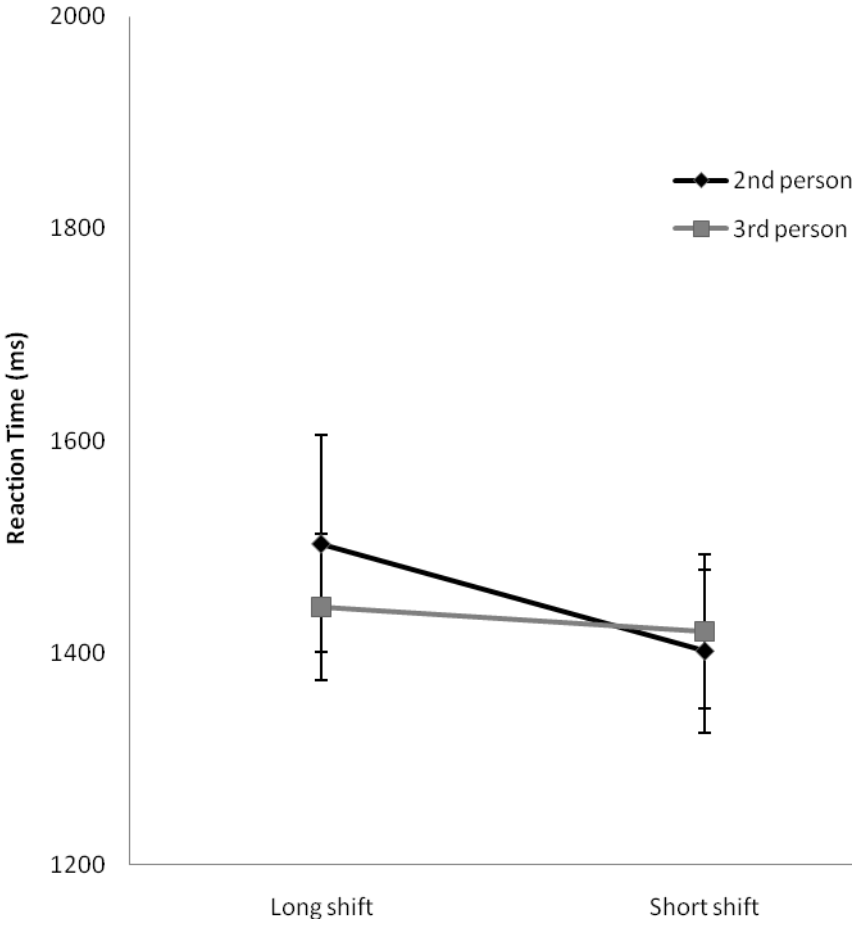

Figure 10. *Perspective and time effects for female participants from Experiment 1. Reaction time in milliseconds.*

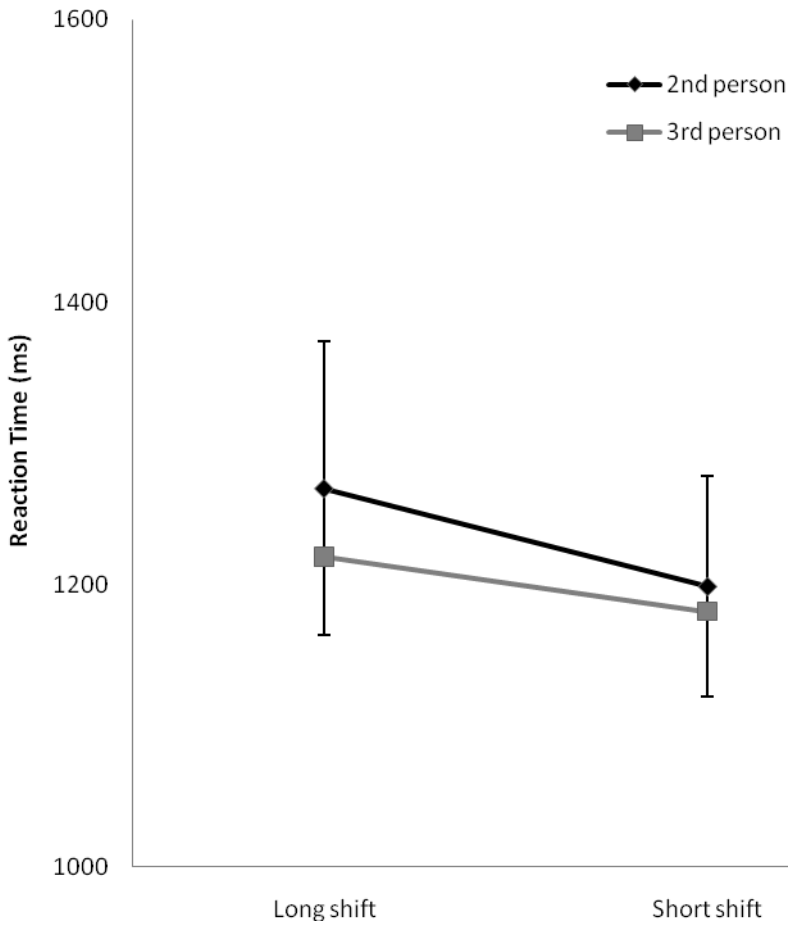

Figure 11. *Perspective and time effects for male participants from Experiment 1.Reaction time in milliseconds.*

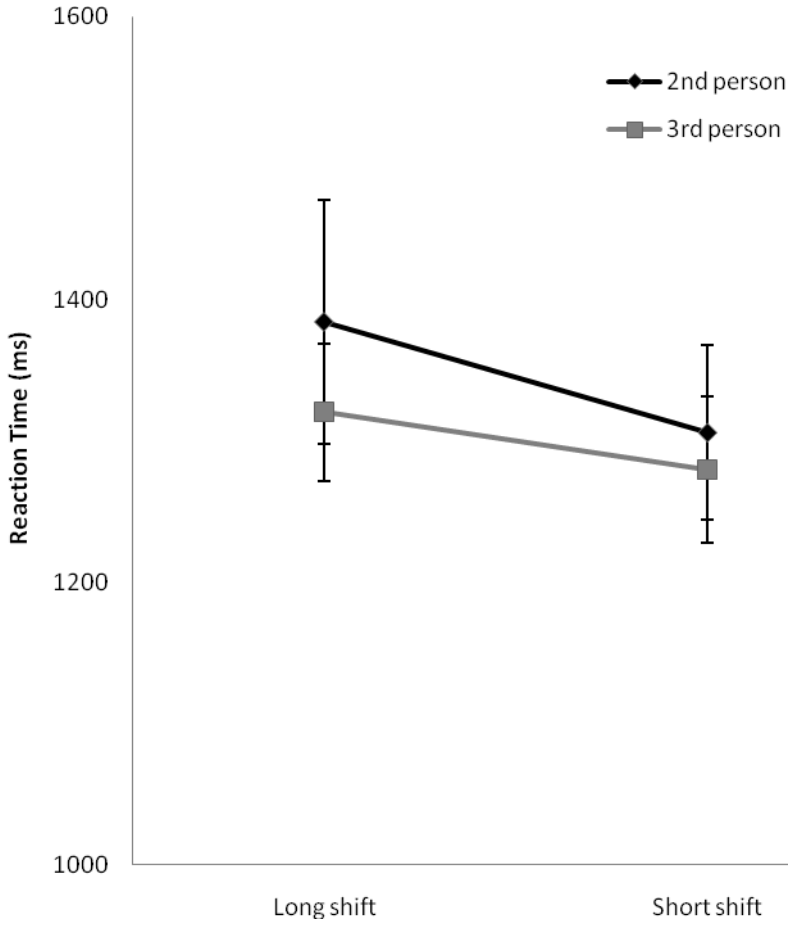

Figure 12. *Perspective and time effects for matched stories from Experiment 1. Reaction time in milliseconds.*

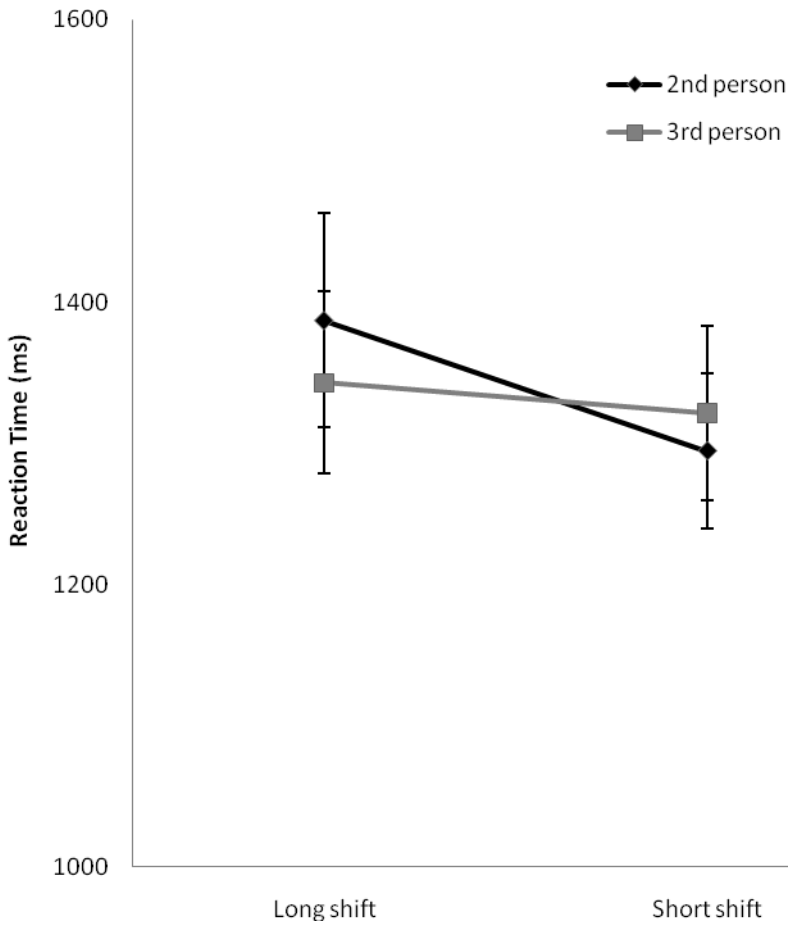

Figure 13. *Perspective and time effects for unmatched stories from Experiment 1. Reaction time in milliseconds.*

APPENDIX 6

OBSERVED PROBE REACTION TIME TABLES

Table 7. *Main effects and interactions for probe reaction time. F values represent calculated ANOVAs.*

Variable	*F*	Sig
Gender	4.42	.04
Story Match	0.22	*p* >.05
Perspective	0.78	*p* >.05
Time	6.26	.02
Story Match x Gender	0.03	*p* >.05
Story Match x Perspective	0.38	*p* >.05
Story Match x Time	0.01	*p* >.05
Perspective x Gender	0.04	*p* >.05
Perspective x Time	1.45	*p* >.05
Time x Gender	0.03	*p* >.05
Story Match x Perspective x Time	0.10	*p* >.05
Story Match x Perspective x Gender	0.60	*p* >.05
Story Match x Time x Gender	0.20	*p* >.05
Perspective x Time x Gender	0.28	*p* >.05
Story Match x Perspective x Time x Gender	0.66	*p* >.05

Table 8. *Means and standard errors for probe reaction time in milliseconds.*

	M	*SE*
Gender - Female	1441.98	75.04
Gender - Male	1216.97	76.28
Story match - Matched	1322.45	52.92
Story match - Unmatched	1336.49	58.02
Perspective - 2nd person	1342.90	61.71
Perspective - 3rd person	1316.04	48.79
Time - Long shift	1358.56	58.52
Time - Short shift	1300.39	50.69
Females, Matched story	1432.24	74.22
Females, Unmatched story	1451.72	81.37
Males, Matched story	1212.66	75.45
Males, Unmatched story	1221.26	82.72
Females, 2nd person	1452.25	86.55
Females, 3rd person	1431.71	68.43
Males, 2nd person	1233.55	87.98
Males, 3rd person	1200.38	69.56
Females, Long shift	1473.09	82.08
Females, Short shift	1410.86	71.10
Males, Long shift	1244.02	83.44
Males, Short shift	1189.91	72.27
Matched story, 2nd person	1345.00	67.56
Matched story, 3rd person	1299.89	44.77
Unmatched story, 2nd person	1340.79	63.52
Unmatched story, 3rd person	1332.19	59.52
Matched story, Long shift	1352.13	59.77
Matched story, Short shift	1292.76	52.57
Unmatched, Long shift	1364.98	65.67
Unmatched, Short shift	1308.01	53.04
2nd person, Long shift	1385.58	72.73
2nd person, Short shift	1300.22	54.97
3rd person, Long shift	1331.53	49.25
3rd person, Short shift	1300.56	51.87

Table 8. (continued)

	M	*SE*
Females, Matched story, 2nd person	1463.20	94.76
Females, Matched story, 3rd person	1401.27	62.80
Females, Unmatched story, 2nd person	1441.29	89.09
Females, Unmatched story, 3rd person	1462.15	83.48
Males, Matched story, 2nd person	1226.80	96.33
Males, Matched story, 3rd person	1198.52	63.84
Males, Unmatched story, 2nd person	1240.29	90.56
Males, Unmatched story, 3rd person	1202.23	84.86
Females, Matched story, Long shift	1469.98	83.83
Females, Matched story, Short shift	1395.09	73.73
Females, Unmatched story, Long shift	1476.80	92.10
Females, Unmatched story, Short shift	1426.64	74.39
Males, Matched story, Long shift	1234.88	85.22
Males, Matched story, Short shift	1190.44	74.95
Males, Unmatched story, Long shift	1253.15	93.63
Males, Unmatched story, Short shift	1189.38	75.62
Females, 2nd person, Long shift	1502.94	102.01
Females, 2nd person, Short shift	1401.56	77.10
Females, 3rd person, Long shift	1443.25	69.08
Females, 3rd person, Short shift	1420.17	72.75
Males, 2nd person, Long shift	1268.22	103.69
Males, 2nd person, Short shift	1198.88	78.38
Males, 3rd person, Long shift	1219.81	70.22
Males, 3rd person, Short shift	1180.94	73.95
Matched story, 2nd person, Long shift	1384.03	86.63
Matched story, 2nd person, Short shift	1305.97	61.89
Matched story, 3rd person, Long shift	1320.24	48.48
Matched story, 3rd person, Short shift	1279.55	51.44

Table 8. (continued)

	M	*SE*
Unmatched story, 2nd person, Long shift	1387.13	75.96
Unmatched story, 2nd person, Short shift	1294.46	54.88
Unmatched story, 3rd person, Long shift	1342.82	64.56
Unmatched story, 3rd person, Short shift	1321.56	61.77
Females, Matched story, 2nd person, Long shift	1504.47	121.50
Females, Matched story, 2nd person, Short shift	1421.94	86.81
Females, Matched story, 3rd person, Long shift	1434.30	68.00
Females, Matched story, 3rd person, Short shift	1368.24	72.15
Females, Unmatched story, 2nd person, Long shift	1501.42	106.54
Females, Unmatched story, 2nd person, Short shift	1381.17	76.98
Females, Unmatched story, 3rd person, Long shift	1452.19	90.56
Females, Unmatched story, 3rd person, Short shift	1472.11	86.63
Males, Matched story, 2nd person, Long shift	1263.60	123.51
Males, Matched story, 2nd person, Short shift	1190.01	88.25
Males, Matched story, 3rd person, Long shift	1206.17	69.12
Males, Matched story, 3rd person, Short shift	1190.87	73.34
Males, Unmatched story, 2nd person, Long shift	1272.84	108.30
Males, Unmatched story, 2nd person, Short shift	1207.74	78.25
Males, Unmatched story, 3rd person, Long shift	1233.46	92.05
Males, Unmatched story, 3rd person, Short shift	1171.01	88.06

Note. Reaction times in ms. *Matched* refers to the condition in which participants read a story with a protagonist of their own gender; *Unmatched* refers to the condition in which participants read a story with a protagonist of the opposite gender. *2nd person* refers to a story with the pronoun "you"; *3rd person* refers to a story with the pronoun "he/she." *Short* refers to a short time shift, "a moment later"; *Long* refers to a long time shift "a day later."

APPENDIX 7

OBSERVED PROBE RECOGNITION ACCURACY FIGURES

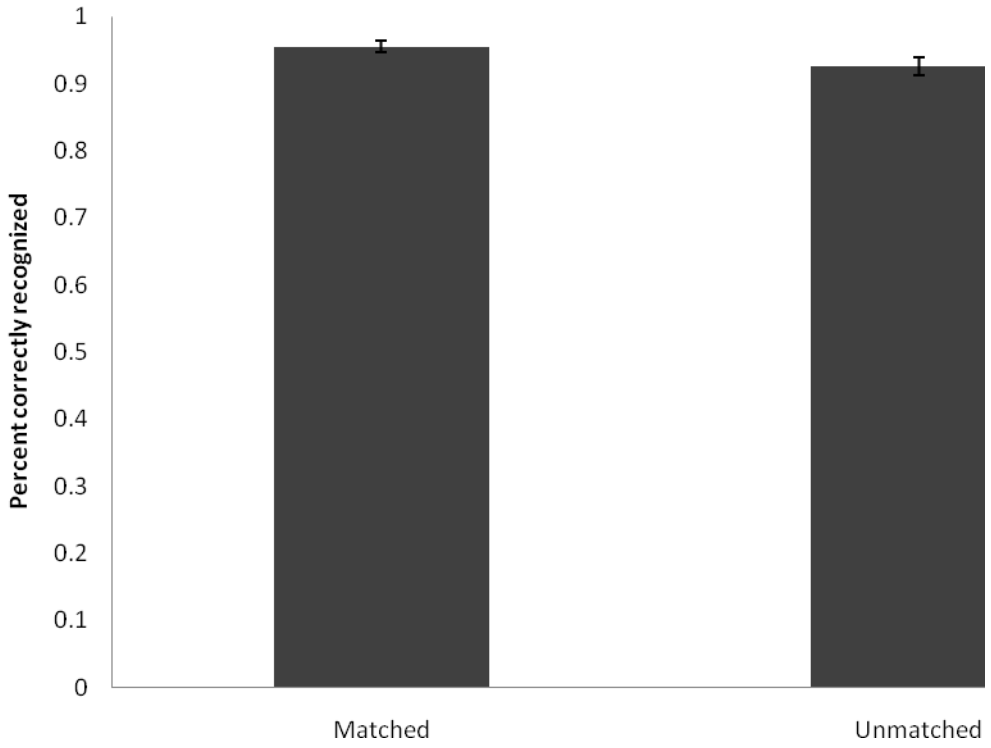

Figure 14. *Main effect of story match from Experiment 1. Percentage of probes correctly recognized.*

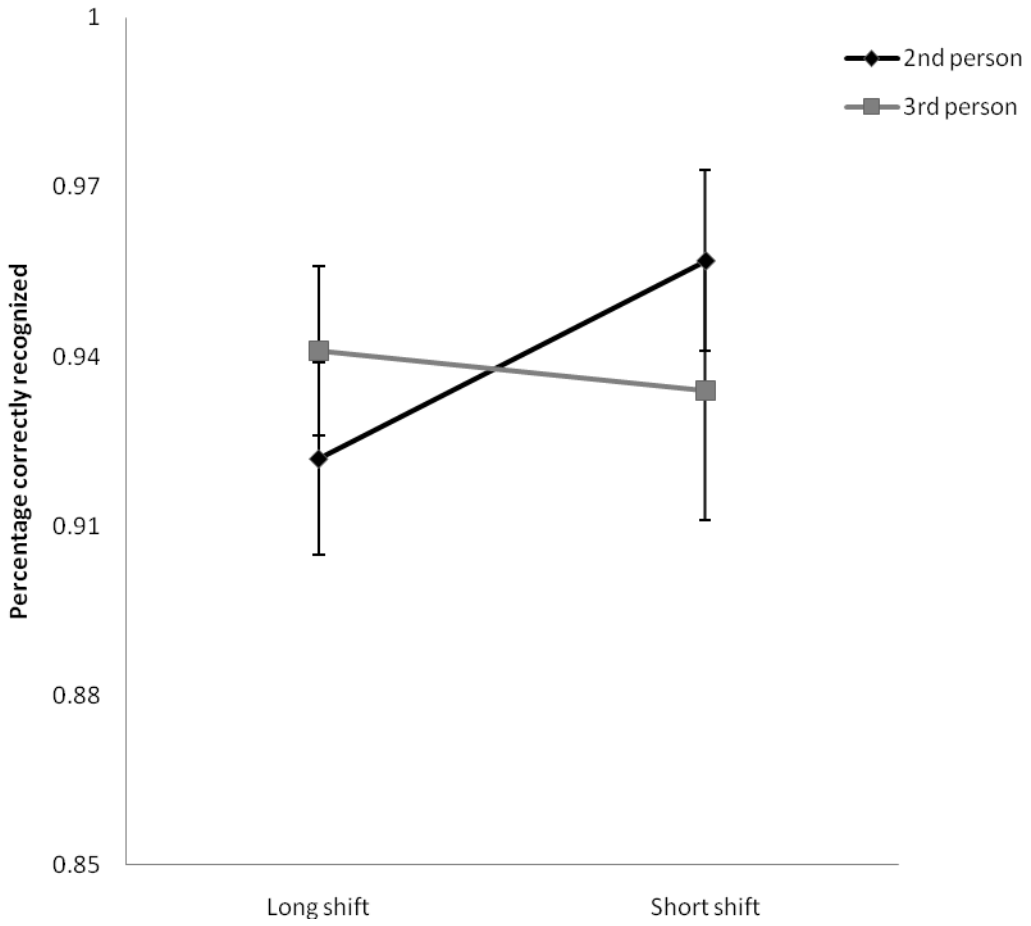

Figure 15. *Probe accuracy (percentage correctly recognized) for female participants from Experiment 1*

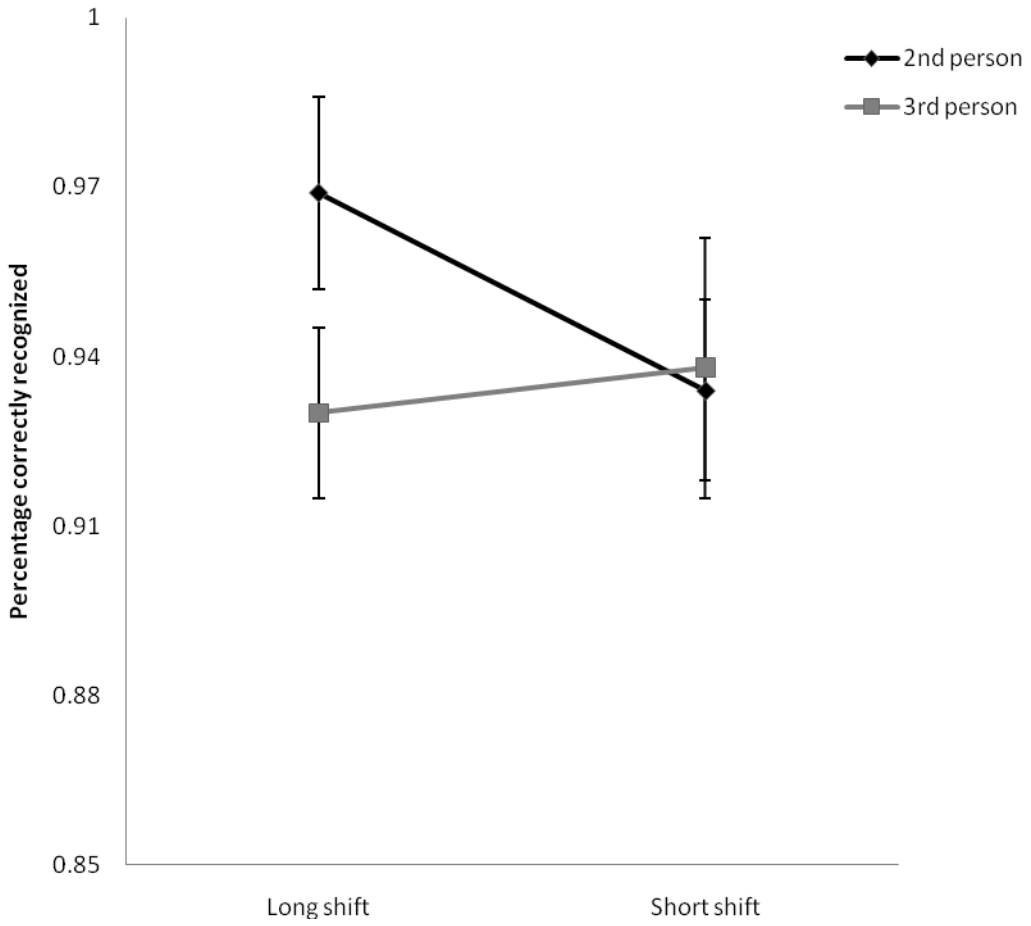

Figure 16. *Probe accuracy (percentage correctly recognized) for male participants from Experiment 1*

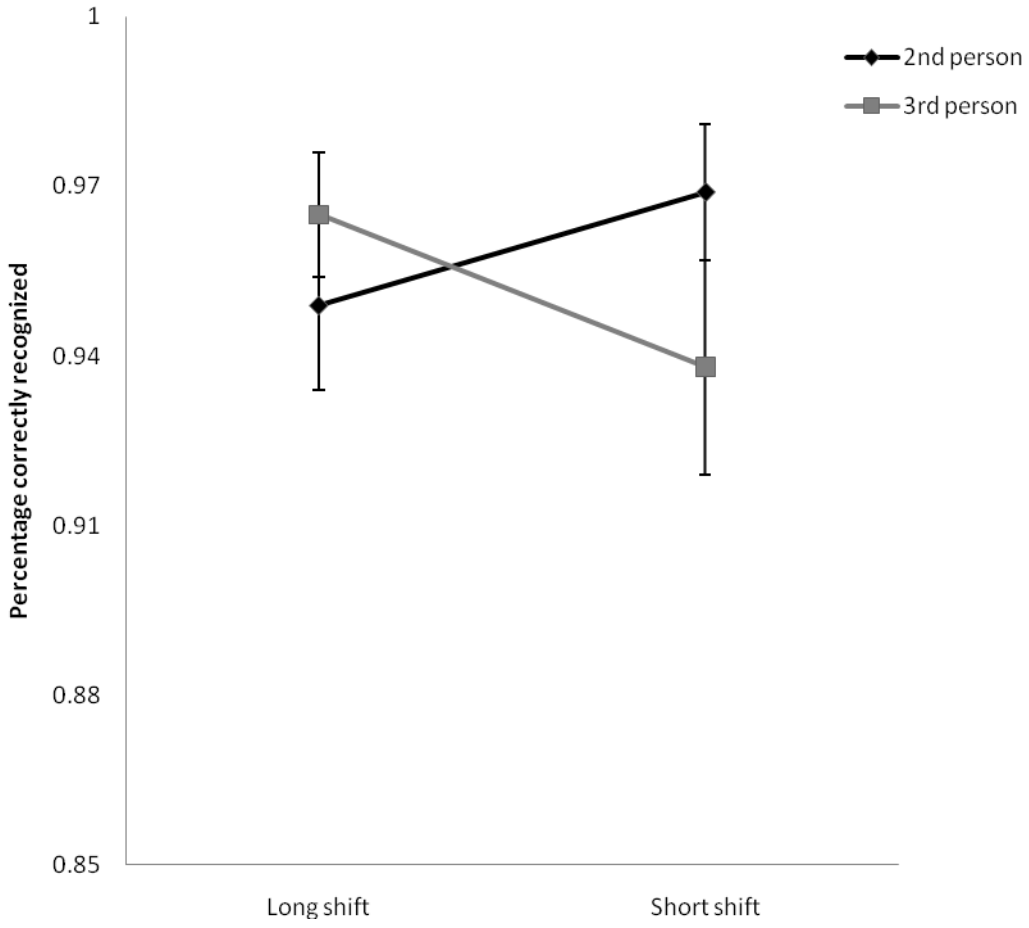

Figure 17. *Probe accuracy (percentage correctly recognized) for matched stories from Experiment 1*

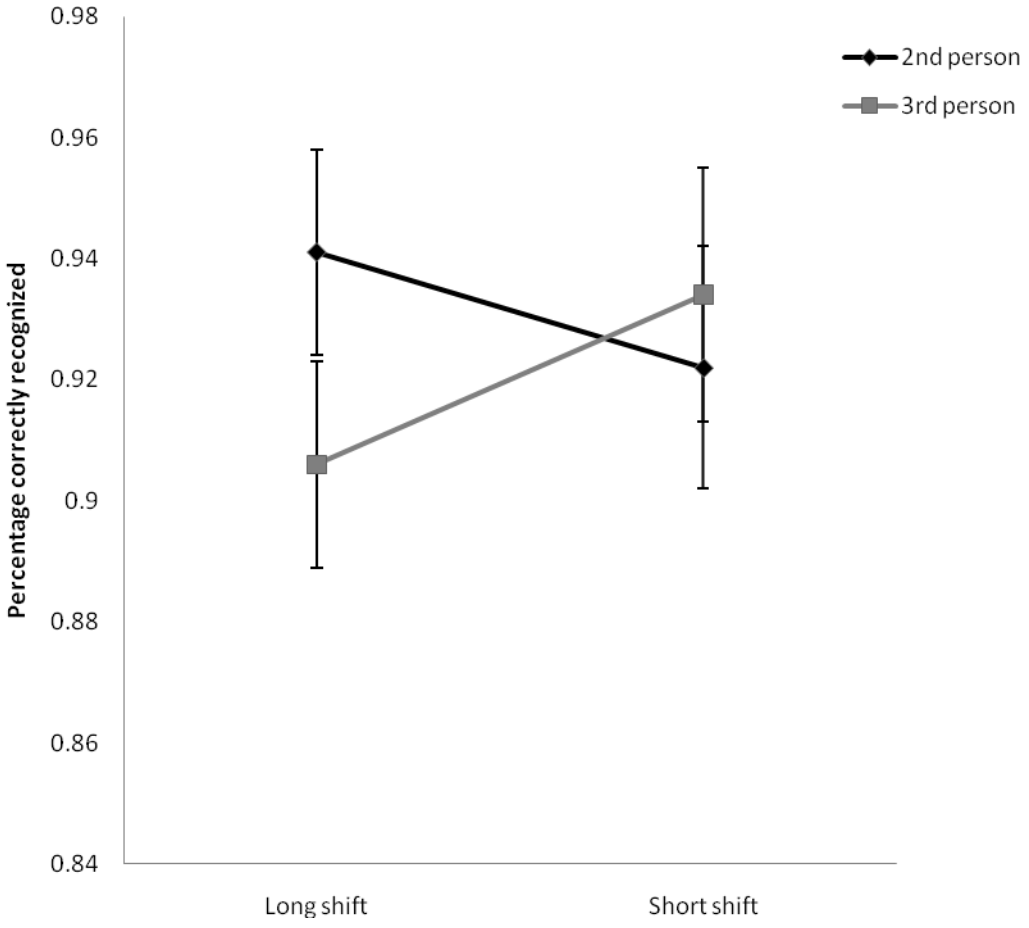

Figure 18. *Probe accuracy (percentage correctly recognized) for unmatched stories from Experiment 1*

APPENDIX 8

OBSERVED PROBE RECOGNITION ACCURACY TABLES

Table 9. *Main effects and interactions for probe recognition accuracy. F values represent calculated ANOVAs.*

Variable	*F*	Sig
Gender	0.05	$p > .05$
Story Match	6.62	.01
Perspective	0.92	$p > .05$
Time	0.01	$p > .05$
Story Match x Gender	1.06	$p > .05$
Story Match x Perspective	0.03	$p > .05$
Story Match x Time	0.17	$p > .05$
Perspective x Gender	0.59	$p > .05$
Perspective x Time	0.01	$p > .05$
Time x Gender	1.68	$p > .05$
Story Match x Perspective x Time	5.73	.02
Story Match x Perspective x Gender	0.89	$p > .05$
Story Match x Time x Gender	2.05	$p > .05$
Perspective x Time x Gender	4.49	.04
Story Match x Perspective x Time x Gender	0.99	$p > .05$

Table 10. *Means and standard errors for recognition scores (percentage correctly recognized)*

	M	*SE*
Gender - Female	0.94	0.01
Gender - Male	0.94	0.01
Story match - Matched	0.96	0.01
Story match - Unmatched	0.93	0.01
Perspective - 2nd person	0.95	0.01
Perspective - 3rd person	0.94	0.01
Time - Long shift	0.94	0.01
Time - Short shift	0.94	0.01
Females, Matched story	0.95	0.01
Females, Unmatched story	0.93	0.02
Males, Matched story	0.96	0.01
Males, Unmatched story	0.92	0.02
Females, 2nd person	0.94	0.01
Females, 3rd person	0.94	0.02
Males, 2nd person	0.95	0.01
Males, 3rd person	0.93	0.02
Females, Long shift	0.93	0.01
Females, Short shift	0.95	0.02
Males, Long shift	0.95	0.01
Males, Short shift	0.94	0.02
Matched story, 2nd person	0.96	0.01
Matched story, 3rd person	0.95	0.01
Unmatched story, 2nd person	0.93	0.02
Unmatched story, 3rd person	0.92	0.02
Matched story, Long shift	0.96	0.01
Matched story, Short shift	0.95	0.01
Unmatched, Long shift	0.92	0.01
Unmatched, Short shift	0.93	0.02
2nd person, Long shift	0.95	0.01
2nd person, Short shift	0.95	0.01

Table 10. (continued)

	M	*SE*
3rd person, Long shift	0.94	0.01
3rd person, Short shift	0.94	0.02
Females, Matched story, 2nd person	0.95	0.01
Females, Matched story, 3rd person	0.94	0.02
Females, Unmatched story, 2nd person	0.93	0.02
Females, Unmatched story, 3rd person	0.93	0.02
Males, Matched story, 2nd person	0.97	0.01
Males, Matched story, 3rd person	0.96	0.02
Males, Unmatched story, 2nd person	0.94	0.02
Males, Unmatched story, 3rd person	0.91	0.02
Females, Matched story, Long shift	0.95	0.01
Females, Matched story, Short shift	0.95	0.02
Females, Unmatched story, Long shift	0.91	0.02
Females, Unmatched story, Short shift	0.95	0.03
Males, Matched story, Long shift	0.97	0.01
Males, Matched story, Short shift	0.96	0.02
Males, Unmatched story, Long shift	0.93	0.02
Males, Unmatched story, Short shift	0.91	0.03
Females, 2nd person, Long shift	0.92	0.02
Females, 2nd person, Short shift	0.96	0.02
Females, 3rd person, Long shift	0.94	0.02
Females, 3rd person, Short shift	0.93	0.02
Males, 2nd person, Long shift	0.97	0.02
Males, 2nd person, Short shift	0.93	0.02
Males, 3rd person, Long shift	0.93	0.02
Males, 3rd person, Short shift	0.94	0.02
Matched story, 2nd person, Long shift	0.95	0.02
Matched story, 2nd person, Short shift	0.97	0.01
Matched story, 3rd person, Long shift	0.97	0.01
Matched story, 3rd person, Short shift	0.94	0.02

Table 10. (continued)

	M	*SE*
Unmatched story, 2nd person, Long shift	0.95	0.01
Unmatched story, 2nd person, Short shift	0.94	0.02
Unmatched story, 3rd person, Long shift	0.94	0.02
Unmatched story, 3rd person, Short shift	0.93	0.02
Females, Matched story, 2nd person, Long shift	0.94	0.02
Females, Matched story, 2nd person, Short shift	0.97	0.02
Females, Matched story, 3rd person, Long shift	0.96	0.02
Females, Matched story, 3rd person, Short shift	0.92	0.03
Females, Unmatched story, 2nd person, Long shift	0.91	0.02
Females, Unmatched story, 2nd person, Short shift	0.95	0.03
Females, Unmatched story, 3rd person, Long shift	0.92	0.02
Females, Unmatched story, 3rd person, Short shift	0.95	0.03
Males, Matched story, 2nd person, Long shift	0.96	0.02
Males, Matched story, 2nd person, Short shift	0.97	0.02
Males, Matched story, 3rd person, Long shift	0.97	0.02
Males, Matched story, 3rd person, Short shift	0.95	0.03
Males, Unmatched story, 2nd person, Long shift	0.98	0.02
Males, Unmatched story, 2nd person, Short shift	0.90	0.03
Males, Unmatched story, 3rd person, Long shift	0.89	0.02
Males, Unmatched story, 3rd person, Short shift	0.92	0.03

APPENDIX 9

EXPERIMENT 2 STORY INVESTIGATION

Table 11. *Stories from Copeland and Houska (2010)*

Story 1

1 You have to write a lengthy paper for class.

2 However, this past week, you had been experiencing a writer's block.

3 You had not written a page the whole week.

4 You ask your professor for some advice.

5 The professor suggested that you should try to write one page a day.

6 A day later, you were up late.

7 After getting something to drink, you sit down.

8 You turn on the computer and start typing.

9 A moment later, the telephone rings.

10 It was a friend of yours.

11 Your friend wanted to know what you were doing.

12 You decide to talk to your friend for a while.

Story 2

1 You were preparing to watch a sitcom on TV.

2 You had been in classes most of the day.

3 You felt that you deserved a break.

4 You sit on the couch and turn on the television.

5 You pick up the remote control to flip through the channels.

6 You skip past a couple of infomercials as you surf through the channels.

7 Finally, you find the station and start watching the sitcom.

8 A moment later, you hear a loud bang.

9 It was an enormous thunder shower.

10 You hope that the power does not go off.

Story 3

1 Your friend had taken up photography as a new hobby.

2 He asked if you would take a photography class with him.

3 It looked like an easy "A", so you agree.

4 Today, the two of you are in a park to take some pictures.

5 There were some squirrels that would make good subjects.

6 You pick up the camera.

7 You inch closer and start snapping photos.

8 A moment later, it started to rain.

9 The rain came pouring down.

10 It seemed to rain all the time this month.

11 You hope it stops soon.

Story 4

1 Today you were having a barbecue.

2 You had invited all of your friends to come.

3 Everyone who had been invited had said that they would come.

4 Fortunately, it was a sunny evening.

5 It seemed like the barbecue would be a big success.

6 At seven o'clock, the first guests were arriving.

7 You ask if anyone wants something to drink -- there's plenty of soda.

8 A moment later, you turn very pale.

9 You had completely forgotten to invite your neighbor.

10 He was definitely going to be upset about this.

11 You were thinking about going over and apologizing.

Story 5

1 You were feeling a bit frustrated today.

2 You had promised a friend to help come up with a topic for her blog on her website.

3 You had absolutely no idea what she should write about.

4 You decide to go see a movie to pass some time.

5 The reviews said that it was supposed to be really good.

6 At seven o'clock, the lights went off and you saw the previews.

7 A moment later, you think of something.

8 She should write a column of movie reviews.

9 You thought you should send her an email about it.

10 That night you sent her your idea.

Story 6

1 You are on your way to Atlanta.

2 Your friend had an extra ticket for a concert tomorrow night.

3 Another friend had cancelled at the last minute.

4 You decided to go because the ticket was free.

5 Your friend made sure he had some snacks in the car, as well as some CDs.

6 These would make the driving a bit more entertaining.

7 At four o'clock, you and your friend were driving up the highway.

8 A moment later, your friend grunts loudly.

9 He had forgotten to bring the tickets.

10 They were sitting on a table in his bedroom.

11 The two of you decide to forget the concert and to see the city anyway.

Story 7

1 You were taking a course in statistics.

2 You had heard that it was a difficult course.

3 But, being a psychology major, you had to take stats.

4 Today was the first day of the new semester.

5 You were listening to the professor on the first day.

6 You are bored as she goes over every detail on the syllabus.

7 It didn't look like the professor was going to let the class out early.

8 As the professor continued talking, you listen to the lecture.

9 A moment later, your eyes feel tired.

10 You realize that you have been daydreaming.

11 You check the clock to see how long until lunch.

Story 8

1 You are on an airplane taking a trip.

2 The airport had been uneventful - you made it through security in no time.

3 Thirty minutes after takeoff the plane reaches a cruising altitude.

4 The flight attendant is serving drinks and snacks.

5 You are really thirsty and need something to drink.

6 You ask the flight attendant for some water.

7 A moment later, you hear some great news.

8 Somebody said that the airline was offering a special promotion.

9 All passengers flying today would get a $300 voucher for a future ticket.

10 You cannot believe how lucky you are.

Story 9

1 You just won a contest -- a friend of yours had bought a raffle ticket.

2 The prize was a 5 day trip to Hawaii.

3 You pack some bags immediately.

4 It was so exciting that this trip was free!

5 On the plane you feel content as you sit in first class.

6 Because the flight is so long, there is a movie playing.

7 It is a decent movie, so you ask the flight attendant for some headphones.

8 A moment later, your head starts throbbing.

9 You are not sure why you don't feel well.

10 You hope that you're not sick the whole trip.

11 You start looking through your bag for some pain reliever.

Story 10

1 It was the last week of your vacation.

2 You are not looking forward to starting the semester.

3 Your classes this semester did not sound too interesting.

4 However, you were planning to enjoy every second at the beach today.

5 It was already very hot when you arrived at the beach.

6 But, it was somewhat quiet at the beach.

7 You walk along the white sand and look out at the ocean.

8 A moment later, you find a wallet.

9 There is a hundred dollars in it.

10 You wonder if you should try to find who lost it.

Story 11

1 You went to the bank this afternoon.

2 You needed to cash a check.

3 When you get to the bank, you stand at the end of the line.

4 As you wait, the line moves very slowly.

5 Finally you arrive at the teller.

6 You sign the check and hand it to her.

7 She opens a drawer and counts out your money.

8 A moment later, an old man sneezes.

9 You quickly walk away from him.

10 Hopefully you don't end up catching a cold.

Story 12

1 It was going to be a slow weekend for you.

2 Not many people would be around.

3 You decide to rent a movie.

4 There weren't any good movies playing at the theater.

5 You drive to the rental store and go inside.

6 After scanning the shelves, you pick one out.

7 Some friends had said it was good.

8 You go up to the counter to check-out the movie.

9 A moment later, a car alarm blares.

10 You quickly run outside.

11 There was a parked car with a dented door.

Story 13

1 You needed to pick up some food at the grocery store.

2 You decide to go to Wal-Mart.

3 When you get there, the parking lot is busy.

4 Luckily, within moments you find a good space and walk into the store.

5 Inside the store you get a cart and go past the greeter.

6 There were a lot of people in the store who were shopping.

7 A moment later, you hear a loud noise.

8 A woman nearby was on the floor screaming.

9 You notice that she is very pregnant.

10 She must be going into labor.

Story 14

1 You were going out to eat dinner with some friends.

2 It was a busy night -- all of the restaurants were crowded.

3 You end up at a sports bar.

4 After waiting a while, you finally get a table.

5 The server stops by right away to hear what everyone wants to drink.

6 As others are ordering you look around the restaurant.

7 All of the tv screens were showing football games.

8 A moment later, you smell something strange.

9 It smells like perfume or cologne.

10 It also smells like it is a cheap brand.

11 Someone near you must be wearing too much.

Story 15

1 Your mother just bought a computer.

2 She wants you to help her set it up.

3 Your mother asks if you can do it on Saturday.

4 You agree to help.

5 On Saturday you help open the boxes.

6 You unpack the monitor, keyboard, and other items.

7 After hooking up the computer, you plug in the printer.

8 A moment later, the doorbell sounded.

9 It was a young girl.

10 She was selling Girl Scout cookies.

11 She gave her sales pitch and described three different kinds of cookies.

Story 16

1 You and a friend go to the art museum.

2 There was an exhibition of impressionist paintings that your friend had to observe for a class.

3 You enter the museum and begin to look around.

4 The two of you spend about an hour staring at the pictures.

5 Some have very interesting color schemes that were used.

6 One was even painted by two different people - a couple.

7 You also see a new exhibit of modern sculptures.

8 A moment later, you have an idea.

9 You think about doing a painting.

10 All you would need is a canvas, brush, and some paint.

11 How hard could it be anyway, to make a painting?

Story 17

1 You were thinking about what you wanted to do one evening.

2 A friend suggested going to see a play on campus.

3 There was a performance of Shakespeare's "Merchant of Venice".

4 Because there was nothing else to do, you decide to go.

5 The line outside is pretty short.

6 As you get closer, you see that the price of admission was only two dollars.

7 You go to the window and buy some tickets.

8 A moment later, your friend trips and falls.

9 You help her sit up.

10 You also ask someone if they could get some water.

11 Apparently, she had been feeling light-headed all day.

Story 18

1 You were volunteering by helping people with their homes and yards.

2 At one house, the fence in the yard needed to be painted.

3 You retrieve some paint from a truck.

4 All of the paint was a shade of off-white.

5 It would only take a few hours to do the job.

6 You decide to get started, before it gets too hot.

7 You get a brush and start painting.

8 A moment later, you get a phone call.

9 You answer the phone to see who it is.

10 It was some guy saying that his grandchild was born.

11 He said that It was a girl named Jacqueline.

12 You quickly tell him that you think he called the wrong number.

Story 19

1 You are at the post office.

2 You need to drop off some mail.

3 You also need to get some stamps.

4 When you go inside you see that the line is long.

5 There are about fifteen people waiting.

6 Luckily you notice a vending machine that sells stamps.

7 You check and see that you have some coins with you.

8 You read the vending machine instructions and insert some quarters.

9 A moment later, someone calls your name.

10 It was someone from one of your classes.

11 You recognize the person's face, but don't know his name.

Story 20

1 Some friends had invited you to a small party.

2 You arrive around 8pm.

3 There are about twenty people there.

4 You go to get something to eat from the kitchen.

5 As you are in the kitchen, you see a large cockroach.

6 It is scurrying directly across the kitchen table.

7 A moment later you hear some music.

8 It is an annoying song.

9 It sounds very repetitive.

10 You look at the clock.

11 You wonder whether the clock was running fast.

Table 12. *Experiment 3 narrative*

1 It was a hot summer day and (you/she) (were/was) lined up at an ATM, wearing a sleeveless, backless sundress.

2 As you were waiting for (your/her) turn, a stranger who was in line behind (you/her) tapped you on the shoulder.

3 “You really should get that mole taken off," he said, pointing a mole that (you'd/she'd) had on (your/her) back since you were a little girl, “it looks like melanoma.”

4 (You/she) remembered thinking that it was a very inconsiderate thing to say to a complete stranger.

5 When you’re a woman, all your consciousness seems to center around your appearance.

6 (You/she) (weren’t/wasn't) even that worried.

7 (You/she) just thought it was a crazy stranger – there are plenty of those in Las Vegas.

8 (You/she) decided to totally put it out of (your/her) mind.

9 Spending the night at home usually does the trick when (you/she) (are/is) stressed or bothered by something.

10 But that night, (you/she) (were/was) lying on the sofa watching a movie.

11 In the movie, a character said, “Unless you do right by me, everything you touch will turn to dust” – or words to that effect, anyway.

12 And then (you/she) realized that (you/she) (weren’t/wasn't) ‘doing right’ by anyone by not having (your/her) mole checked out.

13 (You/she) (weren’t/wasn't) doing right by (your/her) family, who needed a healthy daughter, or by (your/her) boyfriend.

14 That line made you feel sick, because (you/she) wanted to ignore the whole thing.

15 The next time (you/she) went to your doctor for a checkup, (you/she) asked her for a referral to a dermatologist.

16 The dermatologist looked at (your/her) mole, and he did not agree with the crazy guy at the bank machine.

17 He thought it looked fine, even though it was big.

18 He said that that kind of mole had a well-defined border and was unlikely to turn cancerous.

19 (You/she) felt silly by then, but (you/she) told him (you/she) wanted it taken off anyway – it was big and ugly and (your/her) bra strap would rub against it.

20 But then he looked again and said that there were some other moles on (your/her) back – tiny ones – that he would like to take off, and he did.

21 And, incredibly, one of those little moles, that (you'd/she'd) barely noticed, did turn out to be stage one melanoma, and another one was melanoma in situ.

22 Even months after (you/she) had both moles taken care of, (you/she) had some mood swings.

23 One moment, (you/she) would feel so lucky that, with the help of the crazy man, (you'd/she'd) caught this at a stage when it was totally curable.

24 The next moment (you/she) hated the idea that something so deadly could have been growing in (your/her) body.

25 Looking back, (you/she) would say that the oddest part about this experience was that stranger at the ATM.

26 How did he know?

27 He wasn’t even looking at the right moles, but he knew (you/she) had melanoma.

28 And then, (you/she) somehow knew (you/she) had to listen to him – the whole thing was really strange.

29 If that hadn’t happened, (you/she) might have gone years before noticing anything strange about the other moles, and then (you/she) would have been in much worse shape.

30 So, of course, (you're/she's) grateful that (you/she) went in when (you/she) did.

31 And (you’ve/she's) been careful about (your/her) skin ever since; (you/she) (haven’t/hasn't) had a sunburn since this happened.

32 (You/She) always (use/s) sunscreen in the summer, and a moisturizer with sunscreen in it year-round.

33 The higher the SPF, the more (you/she) (are/is) protected from the sun, so (you/she) always (use/s) SPF 30 or greater.

34 Using sunscreen to avoid burning increases (your/her) chances of maintaining healthy, young looking skin.

35 Most of all, protecting (yourself/herself) from the sun is the surest way to prevent skin cancer.

Comprehension Question: "Was the big mole cancerous?"

Table 13. *Experiment 2 Rating Questions*

1.) How similar are your own past experiences to those presented here?

1 to 7 scale (1 = not at all similar, 7 = extremely similar)

2.) How interested were you in the theme of the story?

1 to 7 scale (1 = not at all similar, 7 = extremely similar)

3.) How well can you imagine yourself as the main character in the story?

1 to 7 scale (1 = not at all similar, 7 = extremely similar)

Table 14. *Means and standard errors for Experiment 2 story ratings. On a 7 point scale*

	M	*SE*
Females		
Past Experience Ratings		
Copeland & Houska (2010)	3.78	0.32
Experiment 1 Masculine	1.69	0.58
Experiment 1 Feminine	3.31	1.38
Experiment 3	1.88	0.48
Interest Ratings		
Copeland & Houska (2010)	3.68	0.36
Experiment 1 Masculine	2.86	1.03
Experiment 1 Feminine	4.45	1.80
Experiment 3	4.75	0.73
Imaginability Ratings		
Copeland & Houska (2010)	4.80	0.33
Experiment 1 Masculine	2.17	0.95
Experiment 1 Feminine	4.27	1.93
Experiment 3	4.75	1.67
Males		
Past Experience Ratings		
Copeland & Houska (2010)	3.50	0.19
Experiment 1 Masculine	2.97	1.04
Experiment 1 Feminine	1.61	0.70
Experiment 3	2.00	0.43
Interest Ratings		
Copeland & Houska (2010)	3.43	0.21
Experiment 1 Masculine	3.99	0.86
Experiment 1 Feminine	2.46	1.16
Experiment 3	4.08	0.48
Imaginability Ratings		
Copeland & Houska (2010)	4.38	0.21
Experiment 1 Masculine	3.89	1.12
Experiment 1 Feminine	2.02	1.16
Experiment 3	3.25	1.82

Table 14. (continued)

	M	*SE*
Overall		
Past Experience Ratings		
Copeland & Houska (2010)	3.62	0.17
Experiment 1 Masculine	2.46	0.24
Experiment 1 Feminine	2.29	0.29
Experiment 3	1.95	0.31
Interest Ratings		
Copeland & Houska (2010)	3.53	0.18
Experiment 1 Masculine	3.53	0.24
Experiment 1 Feminine	3.26	0.39
Experiment 3	4.35	0.41
Imaginability Ratings		
Copeland & Houska (2010)	4.56	0.18
Experiment 1 Masculine	3.20	0.30
Experiment 1 Feminine	2.92	0.41
Experiment 3	3.85	0.42

APPENDIX 10

SELF-REPORT MEASURES USED IN EXPERIMENT 3

Table 15. *Items of the Bem Sex Role Inventory*

Affectionate	Acts as a leader	Adaptable
Cheerful	Aggressive	Conceited
Childlike	Ambitious	Conscientious
Compassionate	Analytical	Conventional
Does not use harsh language	Assertive	Friendly
Eager to soothe hurt feelings	Athletic	Happy
Feminine	Competitive	Helpful
Flatterable	Defends own beliefs	Inefficient
Gentle	Dominant	Jealous
Gullible	Forceful	Likable
Loves Children	Has leadership abilities	Moody
Loyal	Independent	Reliable
Sensitive to the needs of others	Individualistic	Secretive
Shy	Makes decisions easily	Sincere
Soft Spoken	Masculine	Solemn
Sympathetic	Self-reliant	Tactful
Tender	Self-sufficient	Theatrical
Understanding	Strong personality	Truthful
Warm	Willing to take a stand	Unpredictable
Yielding	Willing to take risks	Unsystematic

Note. Items in the left column are feminine items, masculine items are in the middle column, and neutral items are contained in the right column. Participants were presented all 60 adjectives in random order, and responded to the question "To what extent does the following adjective describe you?" on a 7 point Likert-type scale (1 = not at all, 4 = somewhat, 7 = extremely).

Table 16. *Items of the Hong Psychological Reactance Scale*

1. I become frustrated when I am unable to make free and independent decisions.
2. I become angry when my freedom of choice is restricted.
3. It irritates me when someone points out things that are obvious to me.
4. Regulations trigger a sense of resistance in me.
5. I find contradicting others stimulating.
6. When something is prohibited, I usually think that's exactly what I am going to do.
7. I resist the attempts of others to influence me.
8. It makes me angry when another person is held up as a model for me to follow.
9. When someone forces me to do something, I feel like doing the opposite.
10. I consider advice from others to be an intrusion.
11. Advice and recommendations induce me to do just the opposite.

Note. Participants were presented all 11 items in random order, and indicated the degree to which the statement described them on a 5 point Likert-type scale (1 = strongly disagree, 5 = strongly agree).

Table 17. *Filler health items*

1. In general, would you say your health is [Excellent/Very Good/Good/ Fair/Poor]

2. I seem to get sick a little easier than other people. [Definitely True/Mostly True/ Don't Know/ Mostly False/ Definitely False]

3. I am as healthy as anybody I know. [Definitely True/ Mostly True/ Don't Know/ Mostly False/ Definitely False]

4. I expect my health to get worse. [Definitely True/Mostly True/Don't Know/ Mostly False/ Definitely False]

5. My health is excellent. [Definitely True/Mostly True/ Don't Know/ Mostly False/ Definitely False]

6. If I were spending a whole day in the sun (i.e., 10am - 4pm) I would plan to wear sunscreen. [Yes/ No]

7. If YOU did not wear sunscreen over the course of a full day outside (i.e., 10am- 4pm) indicate how risky it would be for you personally? [1.) Not at all risky/ 2.)/ 3.)/ 4.) Moderately risky/ 5.)/ 6.)/ 7.) Extremely risky]

8.Please describe your feelings toward the regular use of sunscreen:

[1) Never thought about using it/ 2) I don't need it/ 3) I am undecided on the use of sunscreen/ 4.) I'm currently wearing sunscreen/ 5.) I have been wearing sunscreen regularly]

9. I try to exercise every day: [Strongly Disagree/Disagree/ Neutral/ Agree/ Strongly Agree]

10. I sweat when I exercise. [Strongly Disagree/Disagree/Neutral/Agree/Strongly Agree]

Table 17 (continued)

11. There are nights when I just sit on the couch.[Strongly Disagree/Disagree/Neutral Agree/Strongly Agree]
12. I like to exercise with other people. [Strongly Disagree/Disagree/Neutral/Agree/ Strongly Agree]
13. I prefer to exercise in the morning, rather than the evening.[Strongly Disagree/ Disagree/Neutral/Agree/Strongly Agree]
14. I have a regular exercise partner. [Strongly Disagree/Disagree/Neutral/Agree/ Strongly Agree]

Note. Participants were presented all 14 items in random order, and indicated their agreement on the corresponding scale presented below the items. Items denoted by an asterisk (items 6,7, and 8) were used in exploratory analyses as possible covariates. Items 1 - 5 and 9 - 14 were filler items used to disguise the actual purpose of the study.

Table 18. *Items of the Transportation Scale*

1. While I was reading the narrative, I could easily picture the events in it taking place.

2. While I was reading the narrative, activity going on in the room around me was on my mind.

3. I could picture myself in the scene of the events described in the narrative.

4. I was mentally involved in the narrative while reading it.

5. After the narrative ended, I found it easy to put it out of my mind.

6. I wanted to learn how the narrative ended.

7. The narrative affected me emotionally.

8. I found myself thinking of ways the narrative could have turned out differently.

9. I found my mind wandering while reading the narrative.

10. The events in the narrative are relevant to my everyday life.

11. The events in the narrative have changed my life.

12. I had a vivid mental image of the main character.

Note. Items 2, 5, and 9 were reverse scored.. Participants were presented all 12 items in random order, and responded to the statements on a 5 point Likert-type scale (1 = not at all, 5 = very much).

Table 19. *Post-Narrative Self-Report Items*

Behavioral Intention Items

1. Do you plan to use sunscreen and prevent yourself from experiencing sunburns?

2. Do you NOT plan to use sunscreen and prevent yourself from experiencing sunburns?

3. Do you plan to change your sunscreen usage habits in the next 4 weeks?

4. How often do you intend to use sunscreen this summer?

5. How many times would you apply sunscreen over the course of a full day outside (i.e., 10am - 4pm)?

6. How often do you intend to use sunscreen during daily activities?

Affect Items

Please indicate your current feelings toward the following health condition:

7. skin cancer

8. melanoma

9. sunburn

10. prematurely aged skin

Attitude Items

11. How would you feel about applying sunscreen?

12. How would you feel about applying sunscreen?

13. How would you feel about failing to apply sunscreen?

14. How would you feel about failing to apply sunscreen?

15. How would you feel about forgetting your sunscreen at home?

16. How would you feel about forgetting your sunscreen at home?

Table 19. (continued)

17. How would you feel if the store was out of sunscreen?

18. How would you feel if the store was out of sunscreen?

Note. Participants were presented all items in random order within other health filler items. Items 1-3 were answered on a 5 point Likert-type scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree). Item #2 was reverse coded. Items 4 and 5 were answered on a 7 point Likert-type scale (1 = never, 7 = always). Item 6 was answered on a 7 point Likert-type scale (1 = Never, 2 = Once, 3= Twice, 4 = Three times, 5 = Four times, 6 = Five times). Items 7 - 10 were answered on a 7 point Likert-type scale (1= not at all fearful, 7 = extremely fearful). Items 11, 13, and 15 were answered on a 7 point Likert-type scale (1= not at all relieved, 7 = extremely relieved), Items 12, 14, and 16 were answered on a 7 point Likert-type scale (1= not at all unpleasant, 7 = extremely unpleasant), Item 17 was answered on a 7 point Likert-type scale (1 = not at all regretful, 7 = extremely regretful), and Item 18 was answered on a 7 point Likert-type scale (1 = not at all anxious, 7 = extremely anxious)

APPENDIX 11

BEHAVIORAL INDICATORS USED IN EXPERIMENT 3

Melanoma

Melanoma is one of the most serious and aggressive forms of skin cancer. Melanoma is a malignant tumor that originates in the cells of the skin that produce skin pigment (called melanocytes). The majority of melanomas are black or brown. However, some melanomas do not make pigment and are skin-colored, pink, red, purple, blue or white. Melanoma is most common in persons of Northern European ancestry, and far less common in Native Americans, Africans and Asians. Factors that may predispose to melanoma include: Excessive sun exposure (including tanning bed use), having numerous or large and irregular moles, having very fair skin that burns or blisters easily after sun exposure, especially when associated with natural red hair color. Genetic susceptibility also appears to strongly contribute to melanoma development. About one in ten patients who has melanoma also has other family members who have had melanoma.

The number of people who develop melanoma is increasing steadily. Currently in white Americans, there is a 1 in 64 chance of developing melanoma in one's lifetime. If melanoma is recognized and treated early, it is nearly 100 percent curable with surgery. If not detected in a timely fashion, melanoma can advance and spread to other parts of the body, where it becomes hard to treat and is frequently fatal. The American Cancer Society estimates that in 2007, there will be 59,940 new cases and 8,110 deaths from melanoma.

Treatment of melanoma traditionally has involved surgery-usually a wide excision of the skin around the melanoma. Risk for further spread of melanoma (metastasis) is determined by how deeply the melanoma invades into the skin, and whether it was bleeding (ulcerated): In addition, a procedure called a sentinel lymph node biopsy may be performed to evaluate whether melanoma has started spreading to lymph glands. If lymph gland involvement is detected, further surgical removal of lymph nodes in that area may be performed. The number of lymph glands involved with melanoma is a strong indicator that melanoma cells are already spreading in the body, and therefore can help establish the risk of dying from melanoma.

Using information about the extent of melanoma obtained from surgery, laboratory testing and from X-rays or scans (termed staging), melanoma physicians can estimate the risk that the melanoma will spread and be fatal. Using this information, there is frequently discussion of additional treatment ("adjuvant treatment") designed to decrease the risk of melanoma recurrence for patients who have already had surgical treatment.

If melanoma has already spread (or metastasized) to distant areas in the body, such as skin, liver, or lungs, other drug treatment options are available. These include immunotherapy (drugs that activate the immune system to fight the melanoma), chemotherapy (drugs that kill cancer cells) and signaling inhibitors (new drugs that block key pathways that cancers need to grow and divide). There may, at times, be a role for additional surgery or radiation treatments. One specific challenge is the high percentage of metastatic melanoma patients that develop brain involvement. Specific new treatment approaches have been developed to deal with this challenge, since most drugs do not adequately get into the brain.

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Figure 19. *Melanoma*

What's New in Melanoma Research?

Research into the causes, prevention, and treatment of melanoma is going on in many medical centers around the world.

Causes and prevention

Sunlight and UV radiation

Recent studies suggest there may be 2 ways that UV rays causes melanoma. The first way is linked to a lot of sun exposure and sunburns as a child or teenager. This early sun exposure starts a change in skin cells that may later turn into melanoma. Some doctors think this accounts for melanomas that start on the legs and trunk -- areas that aren't often exposed to the sun in adulthood.

The second link is to melanomas that start on the arms, neck, and face. These areas are often exposed to sun, particularly in men. Tanning booths may also help these kinds of melanomas develop.

Public education

Most skin cancer can be prevented. You can do this by avoiding too much sun exposure and protecting yourself and your children when you are in the sun. Don't forget that sunscreen should be used to protect skin from the sun's rays during normal activity. It should not be used to allow you to spend more time in the sun.

It is also important to find melanoma early, when it is most likely to be completely cured. Check your skin every month and be aware of the warning signs of melanoma.

DNA research

Scientists have made a lot of progress during the past few years in learning how UV light harms DNA. Changes in DNA can cause normal skin cells to become cancer. People who have a strong family history of melanoma should talk to a cancer genetic counselor or a doctor who knows about cancer genetics to discuss the benefits and possible drawbacks to genetic testing.

Treatment

Immune therapy

New ways of working with the immune system to fight cancer are being studied. Researchers are working on vaccines aimed at making a person immune to his or her melanoma cells. Another method is to train a person's immune cells to attack the melanoma cells.

Other forms of immunotherapy are also being studied. A recent small study showed that treating patients with immune system cells found in tumors could shrink melanoma tumors and possibly prolong life, too. Another study found that a type of white blood cell (T cells) that had their genes altered in the lab could cause tumors to shrink in a small number of patients. More studies of these treatments are being done.

Gene therapy

One of the most promising new ideas in treating melanoma involves adding certain genes to the cancer cells. There are different ways that adding these genes can help to fight the cancer. Clinical trials testing gene therapy are going on now.

American Cancer Society®

Figure 20. *What's New in Melanoma Research?*

How Can I Learn More?

From your American Cancer Society

The information listed here may also be helpful to you. These materials may be ordered from our toll-free number, 1-800-ACS-2345 (1-800-227-2345).

- A Parent's Guide to Skin Protection (also available in Spanish)
- After Diagnosis: A Guide for Patients and Families (also available in Spanish)
- Immunotherapy (http://www.cancer.org/docroot/ETO/eto_1_3_Immunotherapy.asp)
- Melanoma: Treatment Guidelines for Patients, Version IV (also available in Spanish) (http://www.cancer.org/docroot/CRI/content/CRI_2_4_7x_NCCN_Melanoma_Treatment_Guidelines_for_Patients.asp)
- Skin Cancer Prevention and Early Detection (http://www.cancer.org/docroot/PED/content/ped_7_1_Skin_Cancer_Detection_What_You_Can_Do.asp?sitearea=&level=)
- Why You Should Know About Melanoma (also available in Spanish) (http://www.cancer.org/docroot/CRI/content/CRI_2_4_7x_Why_You_Should_Know_About_Melanoma.asp?sitearea=PED)

National organizations and Web sites*

In addition to the American Cancer Society, other sources of patient information and support include:

American Academy of Dermatology
Toll-free number: 1-888-462-3376 (1-888-462-DERM)
Web site: www.aad.org

Environmental Protection Agency
Web site: www.epa.gov/ebtpages/humasunprotection.html

Melanoma Patients' Information Page
Web site: www.mpip.org

National Cancer Institute
Toll-free number: 1-800-422-6237 (1-800-4-CANCER)
Web site: www.cancer.gov

Skin Cancer Foundation
Toll-free number: 1-800-754-6490 (1-800-SKIN-490)
Web site: www.skincancer.org

**Inclusion on this list does not imply endorsement by the American Cancer Society.*

No matter who you are, we can help. Contact us anytime, day or night, for cancer-related information and support. Call us at **1-800-ACS-2345** (1-800-227-2345) or visit www.cancer.org.

Figure 21. *How Can I Learn More?*

How the Skin Cancer Foundation put High-SPF protection on the map

Remember that old advertisement where a puppy is tugging at a little girl's bathing suit bottom, revealing her distinct tan line? The ad, for "tanning lotion," belonged to a time when we all thought a suntan was fabulous to have. Guys ran around without shirts, thinking of that first summer sunburn as the launching pad for a handsome, "healthy" tan. Girls swabbed on baby oil or held metal reflectors under their chins to speed and deepen their tanning. They also used tanning lotions with a low sun protection factor (SPF) of say 2 to 4 which blocked just enough of the sun's ultraviolet rays (UVR) to enable them to build their tans without burning. Brown was beautiful. Today, we know there's no such thing as a "healthy" tan. Although advertising once conditioned us to see tanning as attractive, studies have proven that both sunburns and tanning assault the skin's DNA. As this knowledge has become accepted, so has the importance of high-SPF protection. While low-SPF formulas enhanced tanning, modern broad-spectrum sunscreens with high SPFs are designed to prevent tanning as well as burning. It has been a total revolution in the way sunscreens are used.

The Skin Cancer Foundation led this revolution. The original concept of SPF (which signifies how many times longer it takes for the sun to redden your skin when you're using a given sun protection product, versus how long it would take to redden without protection) was developed in 1962 by Swiss researcher Franz Greiter. However, it was the late 1970's when the Foundation's Photobiology Committee (a panel of experts on the damaging effects of UVR) established strict requirements for sun protection products, calling for (among other things) SPFs of 15+. "Those who use products offering 'minimal' or 'moderate' low-SPF protection may harm epidermal cells including the melanocytes and keratinocytes, increasing their risk of photoaging and both melanoma and nonmelanoma skin cancers," declared the Photobiology Committee's first chairman, Madhukar Pathak MB, PhD (who remained chairman until he passed away last year). "Everyone over six months old should use sunscreen with an SPF of at least 15."

This standard was an essential element in the Foundation's Seal of Recommendation program for sun protection products, created by the Photobiology Committee in 1979. "The terrific thing The Skin Cancer Foundation did was to begin certifying sunscreens for safety and effectiveness," says Calvin L. Day, Jr., MD, a private practitioner in San Antonio, TX, who worked closely with the Foundation in its early years. "Patients were getting horrific burns from the early tanning products; but with the Seal of Recommendation, you could just look at a product, see the Seal on it, and know you were getting good protection." (as long as you apply enough—about two ounces worth all over your body 20 minutes before you go in the sun. For safety, reapply 30 minutes later and every 1 1/2 hours after that, as well as immediately after swimming or sweating heavily.)

Thanks to the Photobiology Committee's efforts and the Seal's international impact, the concept of high-SPF protection has spread far and wide. SPF 15+ is now a universal standard for proper UV protection. It has been adapted for many other sun protection items beyond sunscreen, including clothing.

The ad with the little girl is now part of history. You can still find it in the manufacturer's website archives. However, the girl has no tan anymore. For years the company has conscientiously promoted sun protection and tanning avoidance, using high-SPF sunscreens that prominently bear the Seal of Recommendation.

Figure 22. *How the Skin Cancer Foundation Put High-SPF Protection on the Map*

Am I at Risk?

Everyone is at some risk for melanoma, but increased risk depends on several factors: sun exposure, number of moles on the skin, skin type and family history (genetics).

Sun exposure

- Both UVA and UVB rays are dangerous to the skin, and can induce skin cancer, including melanoma. Blistering sunburns in early childhood increase risk, but cumulative exposure also is a factor. People who live in locations that get more sunlight — like Florida, Hawaii, and Australia — get more skin cancer. Avoid using a tanning booth or tanning bed, since it increases your exposure to UV rays, increasing your risk of developing melanoma and other skin cancers.
- **Moles**

  There are two kinds of moles: normal moles — the small brown blemishes, growths, or "beauty marks" that appear in the first few decades of life in almost everyone — and atypical moles, also known as dysplastic nevi. Regardless of type, the more moles you have, the greater your risk for melanoma.

- **Skin Type**

  As with all skin cancers, people with fairer skin are at increased risk.

- **Family History**

  About one in every ten patients diagnosed with the disease has a family member with a history of melanoma. If your mother, father, siblings or children have had a melanoma, you are in a melanoma-prone family. Each person with a first-degree relative diagnosed with melanoma has a 50 percent greater chance of developing the disease than people who do not have a family history. If the cancer occurred in a grandmother, grandfather, aunt, uncle, niece or nephew, there is still an increase in risk, although it is not as great. *Read more on family history, below.*

- **Personal History**

  Once you have had melanoma, you run an increased chance of recurrence. Also, people who have or had basal cell carcinoma and squamous cell carcinoma are at increased risk for developing melanoma.

- **Weakened Immune System**

  Compromised immune systems as the result of chemotherapy, an organ transplant, excessive sun exposure, and diseases such as HIV/AIDS or lymphoma can increase your risk of melanoma.

If you are in any of these risk groups, you can protect yourself and your children by practicing safe sun habits, remembering to examine yourself regularly, watching for the warning signs and getting yearly exams by a dermatologist or other physician experienced in skin care.

SKIN CANCER FOUNDATION

Figure 23. *Am I at Risk?*

Figure 24. *Sunscreen Coupon*

APPENDIX 12

BEHAVIORAL OUTCOME TABLES

Table 20. *Means and standard errors for the behavioral indicator data. Means represent the number of coupons and pamphlets taken by a person.*

	M	*SE*
Gender - Female	0.80	0.29
Gender - Male	0.53	0.29
Perspective - 2nd person	1.17	0.29
Perspective - 3rd person	0.17	0.25
Female participants, 2nd person	1.27	0.40
Female participants, 3rd person	0.33	0.40
Male participants, 2nd person	1.07	0.40
Male participants, 3rd person	0.00	0.40

Table 21. *Logistic regression predicting decision to take pamphlets or coupons from narrative perspective and gender.*

Predictor	*B*	SE *B*	Wald χ^2	*p*	Odds Ratio (e*B*)
Narrative Perspective	1.84	.66	7.84	.005	6.32
Gender	-0.15	.62	0.06	.81	.86

APPENDIX 13

SELF-REPORT OUTCOME TABLES

Table 22. *Means and standard errors for the behavioral intention data. Means represent average of 6 summed items.*

	M	*SE*
Behavioral Intentions		
Gender - Female	33.63	1.50
Gender - Male	33.35	1.50
Perspective - 2nd person	33.93	1.50
Perspective - 3rd person	33.04	1.50
Female participants, 2nd person	34.42	2.33
Female participants, 3rd person	32.83	1.90
Male participants, 2nd person	33.44	1.90
Male participants, 3rd person	33.25	2.33

Note. Ratings from Items 1-6 of Table 19 (Appendix 10) were summed for a composite Behavioral Intention score. All main effects and interactions $p > .05$

Table 23. *Means and standard errors for the affect data. Means represent average of 4 summed items.*

	M	*SE*
Affect		
Gender - Female	18.08	1.14
Gender - Male	17.78	1.14
Perspective - 2nd person	18.28	1.14
Perspective - 3rd person	17.58	1.14
Female participants, 2nd person	18.33	1.76
Female participants, 3rd person	17.83	1.44
Male participants, 2nd person	18.22	1.44
Male participants, 3rd person	17.33	1.76

Note. Ratings from Items 7-10 of Table 19 (Appendix 10) were summed for a composite Affect score. All main effects and interactions $p > .05$

Table 24. *Means and standard errors for the attitude data. Means represent average of 8 summed items.*

	M	*SE*
Affect		
Gender - Female	33.63	1.50
Gender - Male	33.35	1.50
Perspective - 2nd person	33.93	1.50
Perspective - 3rd person	33.04	1.50
Female participants, 2nd person	34.42	2.33
Female participants, 3rd person	32.83	1.90
Male participants, 2nd person	33.44	1.90
Male participants, 3rd person	33.25	2.33

Note. Ratings from Items 11-18 of Table 19 (Appendix 10) were summed for a composite Attitude score. All main effects and interactions $p > .05$

APPENDIX 14

IRB APPROVAL FORMS

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Social/Behavioral IRB – Exempt Review
Approved as Exempt

DATE: December 19, 2008

TO: **Dr. David Copeland,** Psychology

FROM: Office for the Protection of Research Subjects

RE: Notification of IRB Action by Dr. Paul Jones, Co-Chair
Protocol Title: **Reactions to Stories**
OPRS# 0812-2942

This memorandum is notification that the project referenced above has been reviewed by the UNLV Social/Behavioral Institutional Review Board (IRB) as indicated in Federal regulatory statutes 45CFR46.

PLEASE NOTE:
Attached to this approval notice is the **official Informed Consent/Assent (IC/IA) Form** for this study. The IC/IA contains an official approval stamp. Only copies of this official IC/IA form may be used when obtaining consent. Please keep the original for your records.

The protocol has been reviewed and deemed exempt from IRB review. It is not in need of further review or approval by the IRB.

Any changes to the exempt protocol may cause this project to require a different level of IRB review. Should any changes need to be made, please submit a **Modification Form**.

If you have questions or require any assistance, please contact the Office for the Protection of Research Subjects at OPRSHumanSubjects@unlv.edu or call 895-2794.

Office for the Protection of Research Subjects
4505 Maryland Parkway • Box 451047 • Las Vegas, Nevada 89154-1047
(702) 895-2794 • FAX: (702) 895-0805

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INFORMED CONSENT

Department of Psychology

TITLE OF STUDY: Reactions to stories

INVESTIGATOR(S): David E. Copeland and Jeremy Ashton Houska

CONTACT PHONE NUMBER: 702-895-5213

Purpose of the Study
You are invited to participate in a research study. The main purpose of this study is to gain a better understanding of how students study, read, comprehend, and react to narratives.

Participants
You are being asked to participate in the study because you are a healthy adult over the age of 18 years and can fluently speak/understand English.

Procedures
If you volunteer to participate in this study, you will be asked to do the following: fill out a demographics sheet, read a series of short stories, rate their quality, and answer questions about what you read. This process should take approximately 45 to 60 minutes.

Benefits of Participation
Although there may be no direct benefits of this testing to you, most students find it interesting to see what real psychology experiments are like. You may ask questions at any time about any aspect of the procedure. Also, upon completion, you can inquire about the specific goals and expected results in this study. The results of this study will contribute to an understanding of the effective use of narratives in educational and health settings.

Risks of Participation
There are risks involved in all research studies. This study may include only minimal risks. This study involves the same amount of risk as working on a computer, watching television, or reading stories in your leisure time.

Cost /Compensation
There *will not* be financial cost to you to participate in this study. This one session study will take approximately 60 minutes of your time. You *will* be compensated for your time with 1 credit that can be applied to a psychology course.

Contact Information
If you have any questions or concerns about the study, you may contact Dr. David E. Copeland, Assistant Professor of Psychology at the University of Nevada Las Vegas at 702-895-5213. For questions regarding the rights of research subjects, any complaints or comments regarding the manner

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INFORMED CONSENT

Department of Psychology

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TITLE OF STUDY: Reactions to stories

INVESTIGATOR(S): David E. Copeland and Jeremy Ashton Houska

CONTACT PHONE NUMBER: 702-895-5213

in which the study is being conducted you may contact **the UNLV Office for the Protection of Research Subjects at 702-895-2794.**

Voluntary Participation
Your participation in this study is voluntary. You may refuse to participate in this study or in any part of this study. You may withdraw at any time without penalty or prejudice to your relations with the university. If you withdraw, you will still receive credit for participating. You are encouraged to ask questions about this study at the beginning or any time during the research study.

Confidentiality
All information gathered in this study will be kept completely confidential. No reference will be made in written or oral materials that could link you to this study – your responses will only be linked to a code number, not to your name. All records will be stored in a locked facility at UNLV for at least 3 years after completion of the study. After the storage time the information gathered will be added to an anonymous archive, for future references in continuing research projects on this topic.

Participant Consent:
I have read the above information and agree to participate in this study. I am at least 18 years of age. A copy of this form has been given to me.

Signature of Participant _____ Date _____

Participant Name (Please Print) _____

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