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INVESTIGATING THE EFFECTS AND PERSUASIVE MECHANISMS
OF EXPOSITORY AND NARRATIVE HPV VACCINE MESSAGES

DISSERTATION

A dissertation submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy in the
College of Communication and Information
at the University of Kentucky.

By

Adam J. Parrish

Lexington, Kentucky

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Dr. Elisia L. Cohen, Associate Professor of Communication

Lexington, Kentucky

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ABSTRACT OF DISSERTATION

INVESTIGATING THE EFFECTS AND PERSUASIVE MECHANISMS OF EXPOSITORY AND NARRATIVE HPV VACCINE MESSAGES

The purpose of this study is to examine the effects and persuasive mechanisms of expository and narrative HPV vaccine messages targeted toward young men. The researcher used the Centers for Disease Control and Prevention's HPV facts for men as a framework for the expository message condition. He also created two similar but distinct narratives that focused on HPV and men. The first narrative was informed by narrative persuasion studies in the social sciences and was labeled the academic narrative. The second narrative incorporated important elements of storytelling from literary theory and was labeled the classic narrative. A comparison condition, which presented a testimonial from a testicular cancer survivor, was also employed to compare against the effectiveness of the three experimental conditions. In the experiment, 258 men ages 18-26 were assigned randomly to the expository, academic narrative, classic narrative, or comparison conditions. Outcome measures related to the persuasive effects of the messages were attitudes toward talking to healthcare providers about the HPV vaccine and receptiveness to the HPV vaccine. Outcome measures related to the persuasive mechanisms of expository messages were argument strength, source credibility, and emotional arousal. Outcome measures related to the persuasive mechanisms of narrative messages were perceived realism, transportation, identification, and emotional arousal. Hypotheses predicted that argument strength and source credibility would predict changes in knowledge, attitudes, and vaccine receptiveness in the expository condition, whereas perceived realism, transportation, and identification would predict similar changes in the narrative conditions. An additional hypothesis predicted that emotional arousal would affect the persuasion process differently in the expository and narrative conditions. Results indicated that transportation, identification, and emotional arousal were stronger in the narrative conditions, but these variables did not predict persuasive outcomes. Conversely, perceived realism and source credibility had unexpected persuasive effects in both expository and narrative conditions. Implications of the findings and directions for future research are discussed.

KEYWORDS: persuasion, HPV, narrative, expository,
argument strength, perceived realism

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INVESTIGATING THE EFFECTS AND PERSUASIVE MECHANISMS
OF EXPOSITORY AND NARRATIVE HPV VACCINE MESSAGES

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DEDICATION

This dissertation is dedicated to The Redtown Boy,
Dr. Robert J. Parrish, a wonderful father, mentor, and friend.

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Although this dissertation is an individual work, it benefited greatly from the insights of my committee members. I would especially like to thank Nancy Harrington and Elisia Cohen for acting as co-chairs. Thank you to Scott Johnson and Amy Triana for their technological expertise and assistance. Thank you to the young men who participated in this study. Thank you to the Department of Communication and the University of Kentucky for challenging me for the past several years. These experiences contributed significantly to the success of this study.

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CHAPTER ONE

Statement of Problem and Rationale

Human Papillomavirus (HPV) is among the most prevalent of sexually transmitted infections in the world. According to the Centers for Disease Control and Prevention (CDC), most sexually active Americans will be infected with at least one of the more than 40 types of HPV during their lives (CDC, 2015). Although the majority of HPV infections are not life-threatening, some HPV types (e.g., 6, 11, 16, and 18) can lead to cervical cancer in women, penile cancers in men, and genital warts and cancers of the anus and oropharynx in both men and women. HPV is transmitted primarily through vaginal, anal, and oral sex, and it presents no symptoms, thus allowing for perpetuation of new infections. Women can be tested for changes in the cervix caused by HPV with a Papanicolaou test (i.e., Pap test), and HPV co-testing can confirm HPV infection. Although males can be HPV tested via anal Pap exams, no medical organizations have recommended routine HPV testing for men. Men who have sex with men (MSM), as well as men with compromised immune systems, are at higher risks of developing genital warts and anal cancers that might be associated with HPV. Condom use during all types of sex can decrease the likelihood of HPV infection. However, because HPV can be transmitted through areas other than the genitals, condom use is not 100% effective for preventing HPV infection.

The CDC recommends that males ages 9-21 receive the three-dose HPV4 or HPV9 vaccine. Further, the HPV vaccine is recommended for MSM and men with compromised immune systems up to the age of 26, and it is safe for all males up to the age of 26. Because the HPV vaccine cannot cure genital warts or HPV-associated cancers, men should be vaccinated before being exposed to others infected with HPV.

Whereas research indicates that vaccine initiation among adult women in the United States ranges from approximately 21% to 56%, vaccine initiation among adult males is much lower, ranging from less than 1% to 4% (Bernat, Gerend, Chevallier, Zimmerman, & Baurmeister, 2013). A meta-analysis of HPV vaccine acceptability among men revealed several barriers to vaccine initiation, including low levels of HPV-related knowledge and limited perceptions of risk (Newman, Logie, Doukas, & Asakura, 2013). The same study indicated that men would be more likely to accept the HPV vaccine if they understood the benefits of the vaccine and if it was recommended by a healthcare provider. Therefore, an opportunity exists for health communication scholars to develop novel interventions intended to increase HPV vaccine initiation among men. This study capitalizes on this opportunity by developing three persuasive message based interventions—expository, academic narrative, and classic narrative—and tests their effectiveness in affecting attitudes toward vaccination against a comparison condition.

Expository and Narrative Persuasion

Voluminous communication research has been published concerning the processing and outcomes of persuasive messages (Allen & Preiss, 1998; Bostrom, 1983; O’Keefe, 2015). Consequently, message designers have gained considerable knowledge of the ways in which communication sources, channels, and message elements interact to promote changes in attitudes, behavioral intention, and behavior. Specifically, in terms of mass media persuasion, theory and research have developed from a direct-effects model to more nuanced models that consider people’s cognitive and emotional processes, as well as the ways in which human interactions affect persuasion (Petty, Briñol, & Preister, 2009). Further, mass media researchers have been working to keep pace with rapid

changes in computer-mediated channels of persuasion such as Internet weblogs (blogs). However, the many theoretical and methodological approaches employed to study persuasive health messages via computer-mediated communication (CMC) limit the abilities of researchers to compare the overall effectiveness of various message design strategies in a meaningful way (Korda & Itani, 2013). Therefore, it seems important to compare directly two fundamental methods of persuasion (i.e., expository and narrative) within a single CMC environment.

In this study, the term “expository communication” is relatively straightforward and encompasses any form of descriptive, explanatory, or predictive message that can be analyzed for persuasiveness; this includes arguments developed to stand on their own or those culled from narratives (i.e., isolated from their context). Conversely, “narrative communication” is more difficult to define.

Indeed, in the social science literature, definitions of narrative range from the very basic, such as “a story” or “compelling stories” (Green, 2004; Green et al., 2008) to more descriptive and nuanced conceptualizations such as, “accounts of individual’s experiences conveyed in either first or third person” (Winterbottom, Bekker, Conner, & Mooney, 2008, p. 2008) or “a representation of a sequence of connected events and characters that has an identifiable structure, is bounded in space and time, and contains implicit or explicit messages about the topic being addressed” (Kreuter, Green, & Capella, 2007, p. 22). Further, when narratives are operationalized, they range from simple stories written by researchers themselves (Dillard, Fagerlin, Cin, Zikmund-Fisher, & Ubel, 2010) to professionally produced novels, television shows, and films (Green et al., 2008; Moyer-Gusé & Nabi, 2010). This broad variation in both conceptualization and

operationalization of narratives creates a dilemma for messages designers, especially if narrative persuasive attempts fail to achieve their intended effects. Did the narrative falter because it was simply a bad story? What exactly are the elements of good storytelling? Unfortunately, social science literature does not provide a systematic framework to follow. To discover how to construct narratives, message designers must turn to literary theory.

Propp's (1968) *Morphology of the Folktale* presents a structured approach to understanding narratives. His 31-item "functions of the dramatis personae" (i.e., persons of the drama) lays out in great detail the characters and events that occur in fictional narratives (Table 1.1). Despite being originally used as an analytical tool for literary scholars, it can provide the building blocks for message designers. Although an explication of each of the 31 items in Propp's morphology is beyond the scope of this study, a description of the major thematic elements is warranted.

Table 1.1: Propp's (1968) Morphology of the Folktale

1. One of the members of a family absents himself from home.
2. An interdiction is addressed to the hero.
3. The interdiction is violated.
4. The villain makes an attempt at reconnaissance.
5. The villain receives information about his victim.
6. The villain attempts to deceive the victim in order to take possession of him or his belongings.
7. The victim submits to deception and thereby unwittingly helps his enemy.
8. The villain causes harm or injury to a member of the family.
9. Misfortune or lack is made known: The hero is approached with a request or command; He is allowed to go.
10. The seeker agrees to or decides upon counteraction.
11. The hero leaves home.
12. The hero is tested, interrogated attacked, which prepares the way for receiving either a magical agent or a helper.
13. The hero reacts to the actions of the future donor.
14. The hero acquires the use of a magical agent.
15. The hero is transferred, delivered, or led to the whereabouts of an object of search.
16. The hero and the villain join in direct combat.
17. The hero is branded.
18. The villain is defeated.
19. The initial misfortune or lack is liquidated.
20. The hero returns.
21. The hero is pursued.
22. Rescue of the hero from pursuit.
23. The hero, unrecognized, arrives home or in another country.
24. A false hero presents unfounded claims.
25. A difficult task is proposed to the hero.
26. The task is resolved.
27. The hero is recognized.
28. The false hero or villain is exposed.
29. The hero is given a new appearance.
30. The villain is punished.
31. The hero is married and ascends the throne.

Propp, V. (1968). *Morphology of the folktale*. Austin, TX: University of Texas Press.

According to Propp (1968), narratives begin with a main character going on a journey. Second, the character is issued a command, warning, or quest to pursue. Third, a villain injures the character in some way. Fourth, the character acquires a magical gift, be it literal (e.g., a magic sword) or figurative (e.g., new capacities of strength or knowledge). Fifth, the character confronts the villain, often receiving some type of injury. Finally, the character defeats the villain and is celebrated.

Even this abridged presentation of Propp's (1968) morphology presents a strong narrative structure (these six elements of narrative are essentially the plots of *Star Wars*, *Harry Potter*, and *The Hunger Games*), which is why it was chosen to develop the classic narrative for this study. Unfortunately, this structure seems to be missing from narratives used as experimental stimuli in much academic research (i.e., academic narratives). For example, consider the following stories used in Gray's (2008) study of gain- and loss-framed messages (Table 1.2).

Table 1.2: Example of Academic Narrative

<p><u>Gain/Narrative</u></p> <p>Sam and Chris were once just like the many adults in the U.S. who don't exercise regularly. That is, they were until recently. The two friends won a trip to Acapulco for spring break through a contest at their college. About three months before the trip, Sam and Chris decided to try to get in shape by working out together regularly (running outside or on a treadmill for at least 20 minutes, three times weekly). They were worried that they didn't have time to work out and were concerned about staying motivated. Sam has a full-time job in addition to taking twelve hours each semester, and Chris takes 15 hours and has a part-time job, as well as an internship. Sam saved time by studying on the treadmill, and Chris stayed motivated by thinking about how great the new clothes purchased for the trip would look. They started to look and feel better, and get in shape and feel stronger. They were also surprised to find that they felt more confident and felt a sense of accomplishment in doing something good for their bodies. Sam and Chris felt great when they went to Mexico and had a wonderful time. They continued to exercise long after spring break, and felt good, inside and out.</p>
<p><u>Loss/Narrative</u></p> <p>Sam and Chris are like the many adults in the U.S. who don't exercise regularly. That is, they were until recently. The two friends won a trip to Acapulco for spring break through a contest at their college. About three months before the trip, Sam and Chris decided to try to get in shape by working out together regularly (running outside or on a treadmill for at least 20 minutes, three times weekly). They were worried that they didn't have time to work out and were concerned about staying motivated. Sam has a full-time job in addition to taking twelve hours each semester, and Chris takes 15 hours and has a part-time job, as well as an internship. Sam tried to save time by studying on the treadmill, and Chris tried to stay motivated by thinking about how tight and uncomfortable those new clothes purchased for the trip would be if the workouts ended. Sam and Chris, however, became overwhelmed with their studies and responsibilities and stopped working out. Both started to look and feel worse, and get out of shape and feel weaker. They were also surprised to find that they felt less confident and lost the sense of accomplishment in doing something good for their bodies. Sam and Chris did not feel energetic when they went to Mexico and had a disappointing time. Their lack of exercise continued long after spring break, and they felt poorly, inside and out.</p>

It would be difficult to argue that the loss-framed academic narrative conforms at all to Propp's structure (two heroes begin a journey and are quickly defeated). A case could be made that the gain-framed academic narrative takes the heroes on a journey from unhealthy to healthy by defeating the villains of time and motivation. However, both narratives are rather pallid and skeletal; they qualitatively lack the structure of a

good story. This point is made not to attack the author, but rather to highlight the challenges that message designers might face when constructing academic narratives. As Hinyard and Kreuter (2007) described in an extensive review of narrative persuasion and health communication, researchers are interested in a host of factors when studying narratives (e.g., first-person vs. third- person accounts, source and receiver similarity, story length, nonfiction vs. fiction, media channel, framing). When developing academic narratives, it seems researchers tend to focus on one or two of these independent variables rather than the elements that constitute effective storytelling. Of course, there are exceptions to this rule that are evident in the realm of entertainment-education (E-E).

E-E is the result of collaboration among communication scholars and entertainment professionals working to embed persuasive messages in popular television shows (Parrish, Vos, & Cohen, 2014). For example, E-E efforts have included pro-social messages about organ donation on the crime drama *Numb3rs* (Movius, Cody, Huang, Berkowitz, & Morgan, 2007), and cancer screening on *ER*, *Grey's Anatomy*, and *Desperate Housewives* (Hether, Huang, Beck, Murphy, & Valente, 2008; Murphy, Frank, Moran, & Patnow-Woodley, 2011). E-E professionals have access to material (e.g., money) and immaterial resources (e.g., collaborative creativity and celebrity) that most academic researchers do not. E-E allows researchers to take advantage of narratives with strong, classic structures and well-developed characters to create compelling and educational stories. However, some researchers have noted that existing narratives can occlude the persuasive processes that lead to positive outcomes. For example, Murphy et al. (2011) noted that they could not be sure if people had learned about non-Hodgkin's lymphoma because they loved the drama of *Desperate Housewives* and were engrossed in

the overall story, or if it was because they identified strongly with the character who was struggling with the disease. In sum it seems that E-E offers rich, structured storytelling, whereas academic narratives allow researchers to analyze persuasive processes efficiently. Perhaps there is a way to do both.

Even with few resources, researchers can use Propp's (1968) framework to develop classic narratives that creatively convey heroes, villains, quests, and rewards while still attending to important message elements that guide persuasion. When examining the effects of narratives on persuasive outcomes, it would be novel to explore how a narrative that is semi-structured and informed by social science (i.e., academic) performs compared to a narrative that is constructed using Propp's (1968) morphology (i.e., classic). An explanation of how these narratives vary in content will be detailed later. For now, it is important to explain the channel that will convey persuasive messages in this study.

Health Blogs

According to Fox and Duggan (2013), 72% of all adult computer users have searched the Internet for health information. Although most users are searching for treatment options for various health concerns, many others use the Internet to describe their interactions with illness, treatments, and the healthcare system overall (Scanfeld, Scanfeld, & Larson, 2010). Specifically, blogs are popular sources of information for consumers, with as many as 94 million blog readers in the United States alone (Miller & Pole, 2010). Blogs are websites "containing dated entries, or posts, presented in reverse chronological order" (Miller & Pole, 2010, p. 1514). Stavrositu and Kim (2014) identified two distinct forms of health blogs. The first, personal journal-type blogs, are

“centered around the blogger’s personal universe—personal thoughts, feelings, and experiences—relayed in narrative style” (Stavrositu & Kim, 2014, p. 2). The second type of health blog, a filter blog, uses expository communication to inform readers about health concerns that are not necessarily related to the blogger’s experiences. Researchers interested in blogs as a channel for health information have focused on blog content (Buis & Carpenter, 2009), source credibility (Hu & Sundar, 2009), and the effects of message type on behavioral intention (Lu, 2013).

For example, in a study concerning behavioral intention to start running, Lu (2013) found that expository messages were more persuasive than narratives when blog readers had similar perceptions about health as did the blogger. Conversely, Stavrositu and Kim (2015) found that narrative blog messages about skin cancer prevention increased behavioral intentions to engage in protective behaviors by reducing optimistic bias (i.e., feelings of invulnerability) via transportation into the narrative. Expository messages also increased behavioral intention in this study. However, the persuasive effects occurred via different mechanisms (e.g., injunctive norms). It seems that health blogs are a viable to channel to pursue in-depth examinations of the various persuasive mechanisms of expository and narrative messages.

Dissertation Overview

Given this review of expository and narrative message design, the goal of this dissertation is to examine the persuasive mechanisms and effects of expository and narrative HPV messages targeted toward young men via a health blog. This first chapter has provided an overview of the main issues considered in this dissertation: the health context of HPV vaccination in men, the persuasive strategies of expository and narrative

message design, and the message channel of a health blog. Chapter 2 goes into greater depth in a literature review of persuasive message design and effects. It discusses the features of expository and narrative persuasion, compares persuasive mechanisms from the elaboration likelihood model (ELM; e.g., argument strength and source credibility) to relevant persuasive mechanisms from narrative persuasion research (transportation, perceived realism, and identification), and examines the somewhat complex role of emotional arousal in the persuasion process. This chapter concludes by introducing the study's hypotheses and research question. To address these hypotheses and the research question, the study enrolled 258 male students in a post-test only experimental design to examine how the persuasive mechanisms of argument strength, source credibility, perceived realism, transportation, identification, and emotional arousal affected attitudes toward talking to a health provider about the HPV vaccine, attitudes toward the HPV vaccine itself, and overall receptiveness toward the HPV vaccine. Chapter 3 provides a detailed description of how persuasive health blog messages were developed for this study, formative research procedures and results, an explanation of the experimental study design, justifications for selected measures and relevant reliability statistics, and the analysis plan for study data. Chapter 4 presents results of ANOVA and regression analyses used to test the hypotheses, as well as the results related to the research question. Finally, Chapter 5 concludes the dissertation with a discussion of results, highlighting outcomes associated with hypothesized persuasive mechanisms and their effects on persuasive outcomes. Specifically, this chapter explains why certain mechanisms behaved as predicted (e.g., transportation and identification) and why others may have not (e.g., argument strength, perceived realism, and source credibility). This chapter also

details results relevant to emotion and the research question concerning differences between the academic and classic narratives. The dissertation concludes by addressing study limitations and directions for future research. With this preview in mind, it is now the time to set the theoretical foundation and justification for this study, beginning with an explanation of the persuasive mechanisms relevant to expository and narrative communication.

CHAPTER TWO

Literature Review

Overview of Persuasive Message Design and Effects

In order to understand the persuasive mechanisms of expository and narrative persuasive messages, this literature review begins by explaining fundamental features of expository and narrative persuasion. Next, the elaboration likelihood model (ELM) is introduced as the primary theory from which this study will determine the persuasive processes of expository communication. Theoretical constructs from narrative persuasion will be used to explore the persuasive effects of narratives and will be compared and contrasted with constructs from the ELM. Finally, the role of emotion in expository and narrative persuasion is explored.

Expository Persuasion

Features of expository communication. Hinyard and Kreuter (2006) noted that expository communication is relayed rationally and scientifically, drawing upon universal observable truths. Further, Slater and Rouner (2002) explained that expository communication is overtly persuasive and attempts to promote analysis from message receivers. In terms of theoretical message design, researchers who use expository communication seem to operate under the notion that human beings are rational actors who make decisions based upon the interaction of cognitive, emotional, and environmental variables (Larkey & Hill, 2012). From a cognitive/ psychological perspective, message design is frequently influenced by behavior change theories such as the theory of planned behavior (TPB; Ajzen, 1991), the extended parallel process model (EPPM; Witte, 1992), and diffusion of innovations (DOI; Rogers, 2003). When the TPB is employed, message designers attempt to increase positive attitudes, norms, and

perceived behavioral control toward a behavior, which will increase receivers' behavioral intention to change. The EPPM predicts that an emotional response of fear, in the form of a perceived threat, coupled with efficacy beliefs will motivate people to change their behaviors. In this case, message designers attempt to increase perceived severity of and susceptibility to a health problem, while also influencing people's perceptions that they can perform a desired behavior change and that making such a change will mitigate the threat to their health. From an environmental perspective, Rogers' (2003) DOI theory guides message designers to create messages that show how a new health behavior (i.e., an innovation) can be integrated into the everyday routines of message receivers. In this case, persuading audiences that a new behavior has relative advantage over a current behavior, is compatible with existing values, is no more complex than an existing behavior, and can be experimented with and observed before adoption promotes the adoption of the innovation resulting in lasting behavior change.

It should be noted that the forms of evidence (e.g., scientific facts, normative influences, exemplars, modeled behaviors) used in any of these models and theories can and do vary. However, each approach to message design using expository communication first considers the psychological, cognitive, emotional, and/or environmental variables that must be influenced to cause behavior change. Message designers operating from a narrative perspective take a very different approach. As will be explained in the next sections of this dissertation, whereas expository persuasion privileges science, narrative persuasion privileges spectacle.

Narrative Persuasion

Features of narrative communication. Hinyard and Kreuter (2006) noted that narrative communication is relayed to audiences dramatically, drawing upon shared history, experiences, and values as evidence. This does not mean that narratives do not contain verifiable and scientific information. Rather, it suggests that this type of information is relayed within a narrative context and through narrative conventions (e.g., characters, conflict, and resolution).

Narrative persuasive efforts attempt to move people out of their everyday experiences. In fact, Slater and Rouner (2002) suggested that if the persuasive intent of a narrative becomes too obvious, receivers may reject the narrative overall. This may be due to the motivations of audiences receiving narrative communication. As Appel and Richter (2010) noted, people who engage with narratives have expectations of being entertained, whereas people who encounter expository communication are not typically seeking entertainment.

Larkey and Hill (2012) explained the process of narrative persuasive message design succinctly. To begin, researchers recruit informants from a community about which a story is going to be told. These informants serve as role models for characters in the narrative, sharing their own stories about the health behavior that researchers want to write about. Researchers then develop characters and stories that are similar to the information gathered by informants, checking back with the informants to see if the characters, messages, and overall narrative ring true. Then message designers select a medium to convey the narrative and test it with focus groups from the overall population. The goal of the message designer is to create a compelling and persuasive story. To be

clear, message designers operating from a narrative perspective may draw upon psychological, cognitive, emotional, and environmental constructs discussed in the expository section of this study. However, those concerns are generally secondary to the concerns of creating a narrative environment that resonates with an audience. Now that the basic infrastructure of expository and narrative communication has been explained, it is necessary to delve deeper into the theoretical persuasive mechanisms of each form of communication. This endeavor will be necessarily narrowed by focusing on the ELM and comparable constructs from narrative persuasion research.

The Elaboration Likelihood Model (ELM)

The ELM proposes that persuasion occurs through one of two forms of processing (Petty & Cacioppo, 1986). The first form is the central route. Central route processing occurs when audiences carefully consider, or elaborate on, an argument based upon its merits and find the message to be convincing. When people process centrally, they are using significant cognitive effort to determine whether or not they agree with the position that is being advocated by a persuasive entity (Petty et al., 2009). Key to central processing are the constructs of motivation and ability. Motivation concerns the relative importance of a persuasive message to a recipient's life. For example, a young man would likely have low levels of motivation to process a message about regular Pap tests. However, he may have higher levels of motivation to process a message about self-examination for testicular cancer. Ability concerns the degree to which a recipient can understand or relate to a message based upon previous experience with the topic; it also is influenced by external distractions, which limit capacity to process messages. For example, a young man may have high levels of ability to process a message about Pap

tests if several women in his family have had cervical cancer, whereas another man whose female family members have not had cervical cancer may have low levels of ability to process the same message; regardless, if the environment is noisy or there are other sources competing for his attention, the young man's ability to process the message will be compromised. When both motivation and ability to process a message are high, message recipients attend to the merits of the argument, and when they agree with the argument, they are likely to incorporate the proposed attitude or belief into their cognitive structures. Petty et al. (2009) noted that attitudes formed from central-route processing are easily accessible, persistent over time, resistant to change, and indicative of changes in behavior.

According to the ELM, the second form of processing occurs via the peripheral route. Peripheral route processing occurs as a result of heuristic cues, or shortcuts to persuasion. As Petty et al. (2009) noted, some communication elements of messages (e.g., emotional language, message source) can trigger positive affective responses from audience members, making them agree with an advocated position. For example, if a message recipient does not believe that a message is personally relevant and he has limited experience with the persuasive topic, he may simply rely on the expertise of the message source to form an opinion. Attitudes formed via the peripheral route are not easily accessible, dissipate over time, are less resistant to change, and are less indicative of behavior change. Considering the findings of Newman et al. (2013), specifically that young men knew very little about HPV and did not perceive it as a risky infection, it is reasonable to assume that most young males will have low levels of familiarity with HPV messages and little motivation to process such messages. Therefore, it is important to

determine how central and peripheral route processing might be affected by expository and narrative persuasive attempts.

Application of the ELM and Transportation to Expository and Narrative

Persuasion

In expository persuasion, central route processing is activated when recipients are motivated and able to process a message. Petty et al. (2009) noted that motivation can be manipulated by making persuasive information more personally relevant to recipients. For example, a traditional HPV prevention message might be, “HPV can infect men’s genital areas, including the skin on and around the penis and anus.” To a young man who knows little information about HPV, this message may seem vague and irrelevant, prompting peripheral-route processing. However, as Petty et al. pointed out, by adding personal pronouns to a message such as, “HPV can affect *your* genital areas, including the skin on and around *your* penis and *your* anus,” the message can become more relevant and activate central-route processing and consideration of argument strength. Argument strength within the ELM framework concerns whether or not a message generates thoughts and attitudes in agreement with the overall argument being made. When motivation to process a message increases, so too does the relevance of argument strength. That is, when motivation to process a message is high, strong arguments will generate more positive evaluations of the overall message, whereas weak arguments will generate more negative evaluations of the overall message. Therefore, researchers could expect that arguments manipulated to be personally relevant will be evaluated as stronger and more persuasive than messages manipulated to address more general audiences.

Narrative persuasion is not concerned theoretically with central processing or argument strength. Green and Brock (2000) suggested that narrative persuasion occurs via transportation rather than elaboration. Instead of focusing upon specific message arguments in a story, audiences become immersed (or transported) into a story. The authors noted that when transported into a narrative, audiences can become less physically aware of their environments, feel less connected cognitively to events in their ordinary lives and more connected to those in the story, and experience emotions they might not have experienced if not engrossed in the narrative. Thus, transportation suggests that abandonment of reality (i.e., suspension of disbelief) encourages persuasion. Although, one could argue that this type of abandonment suggests peripheral processing of messages, narrative theorists maintain that narrative persuasion and elaboration are distinct from each other.

Green and Brock (2000) explained transportation as a “convergent” process, and elaboration as a “divergent” process (p. 702). When processing an expository message centrally, a recipient is diverging from the message itself to recall personal beliefs and experiences that would help evaluate the strength of the message. When processing a narrative, however, recipients converge on the story. The focus is on the setting, characters, and events as a whole. Rather than prompting central processing toward a message, transportation encourages a focus on the dramatic elements of a narrative, which can increase positive affective response toward a story, or at least decrease negative affective response. That is, if a person is truly transported into a story, he/she should not be evaluating individual messages for their strength or weakness. In fact, the intent of individual messages could only be understood within the context of the story.

For example, the iconic phrase “Do, or do not. There is no try” would hardly be perceived as a strong and persuasive argument if someone had no knowledge of *The Empire Strikes Back*. However, within the context of the story, the physically frail Jedi Master Yoda is imparting serious and persuasive wisdom to the physically strong but emotionally fragile young Skywalker. To an audience member transported into the narrative of *The Empire Strikes Back*, Yoda’s message may encompass much of the meaning of the film.

The most comparable variable to argument strength from a narrative perspective is likely perceived realism. As Cho, Shen, and Wilson (2014) explained, perceived realism is composed of five related but distinct elements: perceived plausibility, perceived typicality, perceived factuality, perceived narrative consistency, and perceived perceptual quality. *Perceived plausibility* concerns whether events taking place in a narrative could actually happen in the real world. For example, *Star Wars*, which portrays epic adventures in outer space, would likely be perceived as less plausible than would *Kramer vs. Kramer*, which relates the story of a contentious divorce. *Perceived typicality* is the degree to which a narrative exemplifies an audience member’s past and present experiences. Rather than merely emulating the real world, perceived typicality addresses whether or not a narrative is personally relevant to the audience. For example, *Kramer vs. Kramer* may be perceived as highly plausible to an audience member who has not experienced the effects of divorce, but it would likely be perceived as less typical. *Perceived factuality* concerns whether or not the events in a narrative are fact or fiction. For example, *Titanic* would likely be perceived as factual, but not typical. *Perceived narrative consistency* is related to Fisher’s (1985) notion of narrative coherence (i.e.,

whether or not a story makes sense logically). *Star Wars* may be perceived to be high in narrative consistency, if not in plausibility, typicality, or factuality. *Perceived perceptual quality* refers to the degree to which the overall narrative (especially audio and visual stimuli) feels real to an audience. With its innovative writing, good acting, dramatic music, and novel special effects, the world of *Star Wars* can feel real to an audience, even if they perceive the narrative to be implausible, atypical, and pure fiction. As Cho et al. discovered, each of these elements of narrative realism activates various elements of narrative persuasion, which lead to attitude change. Specifically, perceived plausibility predicts transportation; perceived typicality predicts identification, factuality predicts transportation and identification (but to a lesser extent than plausibility and typicality), and perceived narrative consistency and perceived perceptual quality predicts overall enjoyment of a narrative.

In sum, motivationally relevant expository messages promote central processing and evaluations of argument strength, such that strong arguments predict persuasion and weak arguments do not. Narrative persuasion occurs via transportation, not elaboration. Perceived realism promotes transportation and persuasive outcomes. Given this information, the following hypotheses are offered:

H1: Participants in the expository condition will rate argument strength higher than participants in the narrative conditions.

H2: Higher ratings of argument strength will predict persuasive outcomes in the expository condition but not the narrative conditions.

H3: Participants in the narrative conditions will experience higher levels of perceived realism than participants in the expository condition.

H4: Higher levels of perceived realism will predict persuasive outcomes in the narrative conditions but not in the expository condition.

H5: Participants in the narrative conditions will experience higher levels of transportation

than participants in the expository condition.

H6: Higher levels of transportation will predict persuasive outcomes in the narrative conditions but not in the expository condition.

Source Credibility and Identification

In expository persuasion, peripheral route processing is activated when recipients are not motivated or able to process a message. A frequent heuristic cue that audiences rely upon during peripheral processing is source credibility (Petty et al., 2009). Source credibility concerns the degree to which receivers perceive that the source of a message is a reliable authority (Petty & Cacioppo, 1986). Source credibility is frequently manipulated by having an expert source (i.e., high credibility) and a lay source (i.e., low credibility). Source credibility acts as a heuristic cue when people have little knowledge of, or no strongly developed attitudes toward, a given topic (i.e., low issue involvement). Low issue involvement decreases the motivation to process a message. Conversely, people who have more knowledge and strong attitudes about a topic are less likely to consider the source of a message when processing an argument because they are more highly motivated to attend to the message, which activates central route processing (Kumkale, Albarracín, & Seignourel, 2010). Therefore, researchers can expect that in conditions of low motivation and ability, message recipients will perceive messages coming from expert sources as more persuasive than messages coming from lay sources.

From a narrative perspective, source credibility can be juxtaposed with identification, which concerns feelings of cognitive and emotional empathy with characters in a story. Moyer-Gusé (2008) noted that identification comprises four dimensions. The first is *wishful identification*, which concerns the degree to which an audience member wants to be like a character in a narrative. The second dimension is *similarity*, which concerns perceptions of homophily to a character in a story. The third dimension is *parasocial interaction*, which concerns the feelings that an audience member is in a pseudo-interpersonal relationship with a fictional character. The fourth dimension is *liking*, which concerns the degree to which an audience member feels positively toward a character in the story.

The effects of identification on persuasive outcomes are complex. For example, in a study to test the effects of narrative and expository persuasion on knowledge, attitudes, and behavioral intention to receive a Pap test, Murphy et al. (2013) found that the narrative condition led to increased knowledge and more positive attitudes toward a Pap test overall. Identification and transportation both increased knowledge outcomes, but only identification predicted positive attitude change. Moyer-Gusé, Chung, and Jain (2011) found that identification with characters from *Sex in the City* was related positively to self-efficacy and negatively to generating counterarguments, which led to increased discussion of sexual health with others (a behavioral outcome).

It seems that in an expository condition, message recipients would experience low levels of identification and rely more upon source credibility than would recipients in a narrative condition. Conversely, message receivers in a narrative condition should

identify with well-written characters and rely less on source credibility than receivers in the expository condition. Therefore, the following hypotheses are offered:

H7: Participants in the expository condition will rate source credibility higher than participants in the narrative conditions.

H8: Higher ratings of source credibility will predict persuasive outcomes in the expository condition but not the narrative conditions.

H9: Participants in the narrative condition will experience higher levels of identification

than participants in the expository condition.

H10: Higher levels of identification will predict persuasive outcomes in the narrative conditions but not in the expository condition.

Emotion in Expository and Narrative Communication

The final and somewhat problematic variable relevant to this discussion of expository and narrative communication is emotion. Nabi (2002) noted that emotions consist of “cognitive evaluations, psychological arousal, and subjective feelings” (p. 290). Nabi recognized that different emotions can activate different routes of persuasion as a result of different types of messages and different types of receiver motivations.

Expository. In expository communication, it seems that emotions influence attitudes through central route processing when there is a direct match between the emotional content of the message and the emotional state of the message recipient and when the receiver’s motivation to process is high. For example, DeSteno, Petty, Rucker, Wegener, and Braverman (2004) conducted an experiment to see if audience members’ affective states influenced how they processed emotional messages. The researchers

posited that inducing either sadness or anger would result in effortful processing of matched emotional messages, which would increase perceived likelihood of saddening or angering related outcomes. Emotions were manipulated by having participants read either an emotional story about a natural disaster or an emotionally neutral story about a construction project. Participants were then instructed to read two similar proposals for a tax increase in their local area. The proposal was framed as being a local concern in order to increase motivation to process. Emotional content of the messages was framed to induce either sadness or anger. In the sadness-framed message, the proposal noted that if the tax increase did not go into effect, special needs children would suffer. In the anger-framed message, the proposal noted that if the tax increase did not go into effect, then local residents would experience more frequent traffic jams. Outcome measures included attitudes toward the tax increase and behavioral intention to support the tax increase. Results indicated that only those participants who were primed to be sad had positive attitudes toward and behavioral intention to support the tax increase when they read the sadness-framed proposal. Participants primed to be sad had less favorable attitudes toward the anger-framed proposal, and neutral participants had less favorable attitudes toward both proposals. The researchers replicated this experiment with an anger-inducing condition and found similar results such that participants primed to be angry were more supportive of the anger-framed proposal and participants primed to be sad were more supportive of the sadness-framed proposal. It seems then, at least in terms of negative affect, emotion works with motivation to promote central route processing.

Conversely, humor has been shown to act as a heuristic cue when people have low levels of ability and motivation to process a message. For example, Conway and

Dubé (2002) conducted an experiment to test the hypothesis that humor appeals would be more effective than non-humor appeals about threatening messages for people high in masculinity. The researchers suggested highly masculine individuals are psychologically distress avoidant, meaning that they do not like to think about potential threats to their health. This indicates that they would have low levels of motivation to process threatening messages. Conway and Dubé noted that humor appeals often diminish threats, which would match the psychological dispositions of highly masculine individuals. In the experiment, participants were introduced to the subject of skin cancer in a somber and threatening way. Participants then viewed either a humorous or non-humorous print cartoon for sunscreen. Outcome measures included attitudes toward sunscreen use and behavioral intention to use sunscreen. In addition, participants were asked to list their thoughts about the ads they viewed. Results indicated that highly masculine participants had more favorable attitudes toward sunscreen use and higher behavioral intention to use sunscreen after viewing the humorous ad than the non-humorous ad. No differences in attitudes or behavioral intention were discovered for participants low in masculinity. This indicates that humor does indeed act as a heuristic cue when motivation to process messages is low.

In terms of expository persuasion, emotion seems to affect processing concordant with a person's relative motivation to process a message. Briñol, Petty, and Barden (2007) found that people who were induced to feel happy considered argument strength more carefully than people who were induced to feel sad. However, this only occurred when individuals were highly motivated to process. Participants who had low motivation to process relied upon emotion rather than argument strength to form attitudes. Therefore,

it seems that motivation to process a message moderates the effects of emotion on persuasion.

Narrative. In terms of narrative persuasion, Moyer-Gusé, Manhood, and Brookes (2011) found much more complex effects of positive affect in the case of narratives. The authors proposed that humor acts as both an elaborative and heuristic cue in entertainment-education narratives. That is, when people hear a joke, especially if it's well-crafted, they have to use a lot of cognitive effort to understand the joke. If the joke is successful, they are less likely to experience negative affect toward the source of the joke and engage in counterarguing. However, depending on the nature of the joke, the topic of the joke may become trivialized (i.e., people may make light of the topic). In that case, although people would process the message centrally, they might disregard the advocated position because the topic was the subject of ridicule.

In their experiment designed to test the effects of humor on counterarguing and intentions to engage in unprotected sex, Moyer-Gusé et al. (2011) assigned participants to a related humor condition, an unrelated humor condition, or a comparison condition. In each condition, participants watched an episode of the sitcom *Scrubs*. In the related humor condition, a character was struggling with the revelation he might become a father from an emotionally meaningless sexual encounter. In the unrelated humor condition, the same episode was shown, but the jokes about the implications of an unwanted pregnancy were edited out of the story, while the other jokes remained. Participants in the comparison condition watched a completely different episode of *Scrubs*. Outcome measures included perceived severity of unintended pregnancy, behavioral intention to engage in unprotected sex, counterarguing, and perceived humor. Results indicated that

the related humor episode depicting the negative consequences of unprotected sex reduced counterarguing, which is a desirable outcome, but it decreased perceptions of perceived severity of unintended pregnancies and increased the likelihood that males would engage in unprotected sex, clearly undesirable outcomes. Conversely, males in the unrelated humor condition generated significantly more counterarguments, expressed higher levels of perceived severity, and were less likely to report intentions to engage in unprotected sex.

The results of this study may seem discouraging to other message designers who wish to target young males with humorous messages about sex and sexual behaviors. That is, joking about the potential negative consequences of a health problem (e.g., unwanted pregnancy) appeared to be counterproductive, possibly by trivializing the topic, thus making it seem less severe or even funny. However, Moyer-Gusé et al. (2011) noted that the unrelated humor condition still contained jokes, just not about the serious topic of unwanted pregnancy. The authors suggested that for male audiences in particular, humorous “backdrops” can present fertile ground for persuasion. It should also be noted that experimental studies of humor and narrative persuasion remain practically nonexistent. Therefore, it would be presumptuous to assume that humor cannot be used to encourage behavior change about sexual topics. In fact, the results of the Briñol et al. (2007) emotion induction study indicate that if a message designer operating from a narrative perspective could find a way to increase the motivation to process a message, positive affect and humor could encourage positive persuasive outcomes. Given the murky nature of the role of emotion in narrative persuasion, the following hypothesis is offered.

H11: There will be differences in emotional arousal between the expository and narrative conditions.

Differences in Academic and Classic Narratives

Because this is the first study to employ both a semi-structured academic narrative and a formally structured classic narrative, the following research question is offered:

RQ1: Are there differences in persuasive effects between academic and classic narratives?

CHAPTER THREE

Method

Message Development

After thorough discussion with health communication experts concerning the amount and importance of HPV information that could be reliably conveyed in brief blog posts, the researcher selected six facts from the 17-item CDC's HPV Fact Sheet for Men to convey in the experimental messages. The facts were stated almost verbatim in the expository condition and modified for narrative flow in the two narrative conditions (Appendix A, p. 84).

Expository condition. In the expository condition, a physician, Dr. Day, posted the HPV facts on the imaginary blog, Brohealth.com (Appendix B, p. 85). The character's credibility was established via his educational background, noting he is an MD and men's health specialist. His specialty in men's health was highlighted to increase the motivation of participants to process the expository messages. Further, some HPV facts were altered slightly to include personal pronouns to increase motivation to process those messages.

Academic narrative condition. The researcher used Cho et al.'s (2014) description of perceived narrative realism in the development of the academic narrative condition, which focused on three male friends discussing their plans for spring break, again on Brohealth.com (Appendix C, pp. 86). Perceived plausibility was enhanced by focusing the discussion on spring break, sex, and women, topics that would be familiar to a college-aged male audience.

Perceived typicality was enhanced by making each of the characters a student at the same university that the research participants attended. Photographs that accompanied the narrative were taken at well-known campus landmarks such as the main classroom building and the student center. The models were students at the university and wore clothing with the university logo.

Perceived factuality was enhanced through the use of colloquial rather than scientific language when making knowledge claims. For example, rather than saying, “Condoms (if used for oral, vaginal, and anal sex) may lower your chances of contracting or passing on HPV, but HPV can infect areas other than the penis, so condoms may not fully protect against HPV,” a character said, “Sure condoms are probably better than nothing, but you can catch HPV on other areas that aren’t... um... *covered* by condoms.” The second statement is more demonstrative of the ways young men communicate interpersonally.

Perceived narrative consistency was enhanced by holding formative focus groups (described in more detail below) with young men who were the approximate age as the characters in the narratives and eliciting feedback concerning the cohesiveness of the stories. To enhance perceived perceptual quality, the researcher collaborated with a professional photographer to ensure that the pictures that accompanied the narratives were of high quality and reflective of the dialogue. Further, focus groups participants were asked to provide feedback concerning the quality of the narrative.

Classic narrative condition. The classic narrative was similar to the academic narrative in all of the realms of perceived realism (Appendix D, pp. 87). However, several elements were modified to adhere to Propp’s (1968) morphology. Specifically,

the hero in the story went on a journey from irresponsibility to responsibility and from being dumped by his girlfriend to being back in a relationship. He was warned by his friends that his irresponsible actions had led to the breakup and that he needed to change his ways. A wiser friend in the story provides the hero with “magical wisdom” about the HPV vaccine. The hero battles with his irresponsibility and is wounded in the process (a shot of the vaccine). Finally, he is rewarded by being reunited with his ex-girlfriend.

Comparison condition. The comparison condition was a testimonial of a real testicular cancer survivor that was posted on <http://www.testicularcancersocietyblog.org> (Appendix E, p. 88). It contained no information about HPV or the HPV vaccine.

Formative Research

The researcher conducted eight focus groups ($N = 34$) with men ages 18-26 to test the efficacy of the narrative conditions. Participants were recruited through the University of Kentucky SONA system and received partial course credit for completing the interview. Focus groups were held in the Communication Research Lab. Upon entering the lab, participants completed consent forms and were then given the script (with photographs) of either the academic or classic narrative and instructed that they were reading an early draft of a blog post on Brohealth.com. Participants were then told to read the script from start to finish while the researcher timed them. They were then asked to read the narrative again, this time writing comments on what they liked, disliked, and thought was strange or not cohesive about the story. After participants completed that task, the researcher conducted a semi-structured interview using a prepared protocol (Appendix F, p. 89). When the interview was completed, the researcher collected the

scripts and then repeated the procedure with the second narrative. Feedback from the focus-group participants was used to refine the narratives before the experiment.

The expository condition was not tested in focus groups. The messages were essentially verbatim from the CDC's HPV fact sheet, with only very minor revisions of some messages to include personal pronouns. The comparison condition was not tested in focus groups because it was included in the study only to illuminate effects for the experimental conditions.

Formative Research Findings

The first question asked in the focus groups concerned general feelings about the narrative. Participants reported that the narratives were informative and amusing. When asked which narrative they liked better, participants consistently chose the first narrative, whether it was the academic or the classic. Although interesting, this finding would not have affected the experimental procedure because participants in the experiment would be exposed to only one condition.

The second question in the focus group interviews concerned the purpose of the stories. The most consistent response to this question was that the narratives were meant to inform young men about HPV. The persuasive intent of the narratives was not apparent to most of the focus group participants. This was heartening considering Slater and Rouner's (2002) discussion about overt persuasion in narratives often producing counterproductive results.

The third question asked in the focus groups concerned assessments of the characters in the story. Most participants reported that the main character was

irresponsible and reckless and that the secondary characters were wise and supportive. These responses were consistent with how the characters were written.

The fourth question in the focus group interviews concerned the realism of the dialogue. Participants highlighted a few statements that they felt would not be used by college students. For example, in the classic narrative, the main character states that he has a date with a “hot little number.” This phrase was frequently criticized as being old-fashioned, with one participant noting, “This dude sounds like the Fonz!” The “hot little number” was changed to “really cute girl” in the final version of the classic narrative. Several other small changes were also made to update the dialogue.

The fifth and sixth questions asked in the focus groups concerned the use of humor in the stories. Overwhelmingly, participants enjoyed the jokes. The more “vulgar” jokes were consistently cited as the most humorous. Most participants felt that the humor was relatable and consistent with what they might say to their male friends.

The final question in the focus group interviews asked what participants would change about the stories they read. There was only one alteration suggested (although the suggestion was frequent and vehement). In the classic narrative, the main character’s ex-girlfriend was the sister of a secondary character. Given the main character’s initial irresponsibility and recklessness toward his health and his sexual partner’s health, participants did not understand why the secondary character would allow his sister to date the main character. The sibling relationship was removed from the final version of the classic narrative.

Findings from the focus groups suggested that the narratives were enjoyable and humorous to an audience, obscured overt persuasion, and conveyed the characters in the

ways the author intended. The revisions suggested by the focus group participants were incorporated into the final versions of the academic and classic narratives ultimately used in the experiment.

Experimental Design

This study employed a posttest-only between subjects comparison-group design. The explanatory variable was message type (expository, academic narrative, classic narrative, comparison). The outcome variables were argument strength, source credibility, perceived realism, transportation, identification, emotion, HPV-related attitudes, and HPV vaccine receptiveness. An experimental design was chosen to explore the hypotheses to reveal the persuasive mechanisms of expository and narrative persuasive messages.

Participant Characteristics

Based upon a multiple linear regression model, with an effect size of .10, and using 10 predictors (i.e., six explanatory variables and four conditions), it was determined using G*Power that a total of 254 participants would be necessary to achieve statistical power to test the main effects (Faul, Erdfelder, Buchner, & Lang, 2009). A total of 258 men ages 18-26 were recruited through the University of Kentucky SONA system (Table 3.1). The University of Kentucky Department of Communication requires that all students enrolled in lower-division communication courses participate in one research study per lower-division course per semester. Inclusion criteria were that participants be biological males ages 18-26. Males younger than 18 were not considered adults and were not eligible for this study. Males older than 26 are outside the age range recommended to receive the HPV vaccine and were not eligible for this study.

Table 3.1: Participant Characteristics

Age	19.56 (<i>SD</i> = 1.59)
College Classification	
Freshman	30.6% (<i>n</i> = 79)
Sophomore	25.2% (<i>n</i> = 65)
Junior	22.9% (<i>n</i> = 59)
Senior	20.9% (<i>n</i> = 54)
Graduate student	0.4% (<i>n</i> = 1)
Race	
White/Caucasian	81% (<i>n</i> = 209)
Black/African American	9.3% (<i>n</i> = 24)
Hispanic/Latino	2.3% (<i>n</i> = 6)
Asian	2.7% (<i>n</i> = 7)
Native American	0.4% (<i>n</i> = 1)
Pacific Islander	0.4% (<i>n</i> = 1)
Multiracial	1.9% (<i>n</i> = 5)
Other	1.9% (<i>n</i> = 5)

Experimental Protocol

After enrolling in the study via SONA, participants were provided with a hyperlink to a computerized Qualtrics survey. After answering eligibility screening questions, participants consented electronically and were assigned randomly to the academic narrative, classic narrative, expository, or comparison condition and provided with the following instructions:

“You are about to read a brief blog post about men’s health. Please take your time and read each word carefully. When you are finished, you will answer questions about what you read.”

After reading the blog post, participants completed demographic and outcome measures in Qualtrics, a computerized survey program (Appendices G-N, pp. 90-102).

Measures

Table 3.2 (see pp. 40-41) reports reliabilities, mean scores and standard deviations, as well as skewness and kurtosis statistics, for all variables by condition.

Argument strength. Argument strength was measured using the scale developed by Zhao et al. (2011). The scale assesses perceived believability, convincingness, importance, confidence, and helpfulness of a message, as well as the general perceived strength of the message and overall agreement with the argument (Appendix G, pp. 90-91). All items are measured on a five-point Likert-type scale with appropriate anchors. The nine items ($M = 3.60$, $SD = 0.55$) were averaged and computed a reliable scale ($\alpha = .88$).

Source credibility. Source credibility was measured using McCroskey's (1966) well-validated ethos scale, which measures the perceived competence, goodwill, and trustworthiness of message sources (Appendix H, p. 92). Competence is conceptualized as being intelligent, informed, competent, and bright, as well as having training and expertise. Goodwill is conceptualized as caring about others, being concerned about others, having others' best interests at heart, being sensitive, and not being self-centered. Trustworthiness is conceptualized as being genuine, trustworthy, ethical, moral, and honorable. All items are measured on a seven-point semantic differential scale with appropriate anchors for each character in each message condition (i.e., Dr. Day in the expository condition; Justin, Rob, and Charlie in the narrative conditions). The 18 items ($M = 3.25$ - 5.49 , $SD = 0.87$ - 1.07) were averaged and computed a reliable scale ($\alpha = .91$ -. $.96$).

Transportation. Tal-Or and Cohen (2010) developed a sophisticated measure of transportation that conceptualized the construct as attention, enjoyment, realism, and relevance (Appendix I, p. 93). Attention was operationalized as forgetting about one's physical surroundings, thinking about the narrative after it ended, and focusing on the narrative without distractions. Enjoyment was operationalized as expressing enjoyment and wanting to engage the narrative again at a later time. Realism was operationalized as reporting that the events in the narrative could happen in the real world, the conflict in the story could happen in the real world, and that the characters in the narrative resembled people in the real world. Relevance was operationalized as situations in the narrative being reminiscent of situations that could happen to an audience member. The measures had strong discriminate and convergent validity. All items are measured on a seven-point Likert-type scale with appropriate anchors. The 15-17 items (depending on message condition; $M = 3.51-4.20$, $SD = 0.87-1.02$) were averaged and computed a reliable scale ($\alpha = .80-.89$).

Identification. Murphy et al. (2013) measured identification with characters in a narrative in a way that corresponded directly with Moyer-Gusé's (2008) conceptualization of identification (i.e., wishful identification, similarity, parasocial interaction, and liking; Appendix J, p. 94). Murphy et al. asked participants to what degree they felt that they wanted to be like, were similar to, felt like they knew, and liked each character in the narrative. A factor analysis revealed that each of these four dimensions loaded onto a single factor of identification. All items are measured on a 10-point Likert-type scale with appropriate anchors for each character in each message

condition. The four items ($M = 3.37-6.26$, $SD = 0.87-2.47$) were averaged and computed a reliable scale ($\alpha = .77-.95$).

Perceived realism. Cho et al. (2014) conceptualized perceived realism as a single construct comprising the dimensions of perceived plausibility, perceived typicality, perceived factuality, perceived narrative consistency, and perceived perceptual quality (Appendix K, pp. 95-99). In their study, perceived plausibility was operationalized as perceptions of the events in a narrative depicting real life. Perceived typicality was operationalized as perceptions of events in the narrative being indicative of events that happen to real people. Perceived factuality was operationalized as perceptions that the events in the narrative were based on facts. Perceived narrative consistency was operationalized as perceptions of coherence, consistence, avoidance of contradictions, and a logical flow to the events in the narrative. Perceived perceptual quality was operationalized as perceptions that the visual, audio, dialogue, scenery, and overall production were realistic. All items were measured on seven-point Likert-type scales ranging from strongly agree to strongly disagree. The 19 items ($M = 5.02$, $SD = 0.84$) were averaged and computed a reliable scale ($\alpha = .91$).

Emotion. Emotion was measured using a nine-item adapted version of Murphy et al.'s (2013) scale of positive and negative emotions (Appendix L, p. 100). Five items were identified as positive emotions and four were identified as negative emotions. All items are measured on a 10 point Likert-type scale with appropriate anchors. The five positive items ($M = 3.81$, $SD = 2.07$) were averaged and computed a reliable scale ($\alpha = .84$). The four negative items $M = 3.41$, $SD = 1.98$) were averaged and computed a reliable scale ($\alpha = .81$).

Attitudes. Attitudes were measured using a standard scale of bipolar adjectives, which is prevalent in studies guided by the TBP (e.g., Wheldon, Daley, Buhi, Nyitry, & Giuliano 2011; Yzer & van den Putte, 2014). Two measures of attitudes were collected. *Attitude toward provider* concerned talking to a healthcare provider about the HPV vaccine (Appendix M, p. 101). The four items ($M = 6.06$, $SD = 1.36$) were measured on a seven point semantic differential scale and computed a reliable scale ($\alpha = .97$). *Attitude toward vaccine* concerned receiving the HPV vaccine. The four items ($M = 6.26$, $SD = 1.00$) were measured on a seven-point semantic differential scale and computed a reliable scale ($\alpha = .97$).

Vaccine receptiveness. Because the narratives attempted to persuade participants to talk to their healthcare providers about the HPV vaccine, one three-item scale comprising willingness to (a) think about talking to a healthcare provider about the vaccine, (b) actually talk to the provider about the HPV vaccine, and (c) receive the vaccine when recommended by a healthcare provider was developed for this study and was used to measure an overall receptiveness to the HPV vaccine (Appendix N, p. 102). The scale was based on a similar measure drawn from a previous study looking at HPV vaccination among young women (Head, 2013). The items were measured on a four-point Likert-type scale ranging from strongly disagree to strongly agree. Factor analysis revealed a one-factor solution that explained 77.2% of the variance. The three items ($M = 2.74$, $SD = 0.69$) were averaged and computed a reliable scale ($\alpha = .85$).

Table 3.2: Reliability Scores, Means, and Standard Deviations ($N = 258$)

Variable Name	Condition	Reliability (α)	Mean Score (M)	Standard Deviation (SD)	Skewness	SE	Kurtosis	SE
Argument Strength	Overall	.88	3.60	0.55	0.05	.15	0.22	.30
	Academic	.89	3.71	0.61	-0.06	.30	0.10	.57
	Classic	.87	3.59	0.58	0.04	.30	-0.10	.60
	Expository	.87	3.44	0.45	-0.25	.30	0.28	.60
	Comparison	.86	3.65	0.51	-0.06	.30	0.42	.60
Source Credibility- Justin	Academic	.91	3.25	0.89	0.39	.30	1.26	.60
	Classic	.91	3.37	0.87	0.75	.30	3.63	.60
Source Credibility- Rob	Academic	.96	5.49	1.02	-0.26	.30	-0.99	.59
	Classic	.96	5.47	1.06	-1.31	.30	3.39	.60
Source Credibility- Charlie	Academic	.95	4.79	0.87	-0.05	.30	-0.22	.59
	Classic	.96	4.99	0.99	-0.79	.30	2.53	.60
Source Credibility- Dr. Day	Expository	.95	5.05	1.07	-0.68	.30	1.40	.60
Source Credibility- Cancer Survivor	Comparison	.94	4.78	0.92	-0.28	.30	0.47	.60
Transportation	Academic	.89	4.20	1.02	-0.29	.30	0.06	.59
	Classic	.84	4.11	0.88	-0.64	.30	-0.02	.60
	Expository	.82	3.51	0.93	0.29	.30	-0.58	.60
	Comparison	.80	3.82	0.87	0.19	.30	1.58	.60
Perceived Realism	Overall	.91	5.02	0.84	-0.12	.15	-0.46	.30
	Academic	.91	5.05	0.87	-0.39	.30	-0.05	.59
	Classic	.90	4.99	0.85	-0.29	.30	-0.27	.60
	Expository	.90	4.80	0.72	0.26	.30	-0.67	.60
	Comparison	.93	5.19	0.88	-0.11	.30	-0.77	.60
Identification- Justin	Academic	.77	3.61	1.77	0.41	.30	-0.47	.60
	Classic	.82	3.37	0.87	1.20	.30	1.63	.60
Identification- Rob	Academic	.94	6.00	2.22	-0.43	.30	-0.40	.60
	Classic	.89	6.26	2.13	-0.42	.30	0.06	.60
Identification- Charlie	Academic	.93	5.41	2.19	0.06	.30	-.60	.59
	Classic	.95	5.89	2.47	-0.13	.30	-0.58	.60
Identification- Dr. Day	Expository	.87	3.84	2.01	0.11	.30	-1.10	.60
Identification- Cancer Survivor	Comparison	.74	4.78	0.92	0.64	.30	0.90	.60
Positive emotion	Overall	.84	3.81	2.07	0.38	.15	-0.67	.30
	Academic	.79	3.97	1.94	0.35	.30	-0.40	.59

	Classic	.84	4.32	1.96	0.39	.30	-0.63	.60
	Expository	.93	3.06	2.12	0.81	.30	-0.53	.60
	Comparison	.80	3.86	2.05	0.34	.30	-0.46	.60
Negative emotion	Overall	.81	3.41	1.98	0.52	.15	-0.46	.30
	Academic	.80	3.29	2.03	0.29	.30	-1.35	.60
	Classic	.77	3.41	1.73	0.77	.30	0.64	.60
	Expository	.91	3.09	2.12	0.86	.30	-0.11	.60
	Comparison	.79	3.85	1.98	0.37	.30	0.10	.60
Attitude toward provider	Overall	.97	6.06	1.36	-1.65	.15	2.52	.30
	Academic	.98	6.28	1.21	-2.10	.30	5.10	.59
	Classic	.98	6.15	1.46	-2.00	.30	3.72	.60
	Expository	.96	5.85	1.46	-1.23	.30	0.80	.60
	Comparison	.98	5.96	1.29	-1.30	.30	1.77	.60
Attitude toward vaccine	Overall	.97	6.26	1.20	-1.87	.15	3.24	.30
	Academic	.95	6.45	1.00	-1.96	.30	3.00	.59
	Classic	.97	6.42	1.09	-2.60	.30	8.55	.60
	Expository	.98	5.98	1.35	-1.18	.30	0.16	.60
	Comparison	.97	6.19	1.31	-1.90	.30	3.51	.60
Vaccine receptiveness	Overall	.85	2.74	0.69	-0.35	.15	0.30	.60
	Academic	.86	2.72	0.75	-0.32	.30	0.05	.59
	Classic	.79	2.95	0.59	-0.41	.30	0.89	.60
	Expository	.86	2.59	0.68	-0.60	.30	0.32	.60
	Comparison	.87	2.71	0.68	0.02	.30	0.39	.60

Analysis Plan

Analysis of variance first compared the experimental groups and the comparison group to assess the presence of a treatment effect (Field, 2009). Then, analysis of variance was used to test Hypotheses 1, 3, 5, 7, 9, and 11—all of which posit differences between the experimental conditions; all but H11 are directional hypotheses. Hypotheses 2, 4, 6, 8, and 10 were tested with simple linear regression analyses in which the continuous predictors were entered into ANOVA models along with dummy-coded message conditions and interactions between predictors and conditions. Stratified models were employed for significant interactions in order to provide estimates by condition.

CHAPTER FOUR

Results

Participant flow

A total of 265 participants enrolled in the study. Seven participants did not complete the outcome measures and were excluded from the analysis. Of the remaining 258 participants, 65 were assigned to the academic narrative condition, 66 were assigned to the classic narrative condition, 62 were assigned to the expository condition, and 65 participants were assigned to the comparison condition.

Experimental Effects

All experimental groups vs. comparison. Independent samples *t*-tests revealed that the comparison condition ($M = 5.19, SD = 0.88$) was perceived as significantly more realistic than the experimental conditions ($M = 4.95, SD = 0.82$), $t(255) = -1.97, p = .05$. In addition, negative emotional arousal was significantly higher in the comparison condition ($M = 3.85, SD = 1.98$) than the experimental conditions ($M = 3.26, SD = 1.96$), $t(256) = -2.05, p = .04$. No significant differences were found among conditions for measures of attitude or vaccine receptiveness.

Expository vs. comparison. Independent samples *t*-tests revealed that argument strength was rated significantly higher in the comparison condition ($M = 3.65, SD = 0.50$) than in the expository condition ($M = 3.50, SD = 0.45$), $t(125) = -2.52, p = .01$. Moreover, ratings of perceived realism were significantly higher in the comparison condition ($M = 5.19, SD = 0.88$) than in the expository condition ($M = 4.80, SD = 0.72$), $t(124) = -2.71, p = .01$. Transportation was significantly higher in the comparison condition ($M = 3.82, SD = 0.87$) than in the expository condition ($M = 3.50, SD = 0.93$), $t(125) = -2.10, p = .04$. Negative emotional arousal was significantly higher in the comparison condition ($M =$

3.85, $SD = 1.98$) than in the expository condition ($M = 3.09$, $SD = 2.12$), $t(125) = -2.07$, $p = .04$. Positive emotional arousal was also significantly higher in the comparison condition ($M = 3.86$, $SD = 2.05$) than in the expository condition ($M = 3.06$, $SD = 2.18$), $t(125) = -2.12$, $p = .04$.

Narratives vs. comparison. Independent samples t -tests revealed that transportation was significantly higher in the narrative conditions ($M = 4.16$, $SD = 0.95$) than in the comparison condition ($M = 3.82$, $SD = 0.87$), $t(192) = 2.38$, $p = .02$. Participants perceived the author of the comparison testimonial to be significantly more credible ($M = 4.78$, $SD = 0.92$) than the main character Justin in the narrative conditions ($M = 3.29$, $SD = 0.88$), $t(194) = -11.06$, $p < .001$. However, participants found the character of Rob in the narrative conditions to be significantly more credible ($M = 5.48$, $SD = 1.04$), $t(192) = 4.57$, $p < .001$ than the author of the comparison story. Participants also identified more with the author of the comparison testimonial ($M = 3.98$, $SD = 1.91$) than the character Justin in the narrative conditions ($M = 3.44$, $SD = 1.91$), $t(194) = -1.89$, $p = .01$. However, ratings of identification were significantly higher for the character Rob in the narrative conditions ($M = 6.14$, $SD = 2.17$), $t(194) = 6.79$, $p < .001$. Participants also identified significantly more with the character Charlie in the narrative conditions ($M = 5.65$, $SD = 2.34$), $t(194) = 4.98$, $p < .001$.

Summary. It was unexpected to discover that the comparison condition had greater effects than the experimental conditions in some instances (e.g., perceived realism, argument strength, source credibility, and sometimes identification). However, these results do not prevent a thorough examination of the differences among the expository and narrative conditions, which is the purpose of this study.

Hypothesis 1

Hypothesis 1 predicted that participants in the expository condition would rate argument strength higher than participants in both narrative conditions. A univariate ANOVA indicated significant differences for ratings of argument strength among conditions, $F(3, 256) = 3.61, p = .03, \eta^2 = .04$. LSD post-hoc tests revealed that ratings of argument strength for the academic narrative ($M = 3.71, SD = 0.61$) were significantly higher than the expository condition ($M = 3.43, SD = 0.45$). There were no significant differences between the classic narrative and expository conditions or between the classic and academic narrative conditions (Table 4.1). Participants in this study rated argument strength highest in the academic narrative condition. Therefore, hypothesis 1 was not supported.

Table 4.1: ANOVA Results- Argument Strength

Message Condition	N	Mean	SD	95% Confidence Interval	
				Lower Bound	Upper Bound
Academic	65	3.71 ^a	0.61	3.58	3.85
Classic	65	3.60 ^{a,b}	0.58	3.47	3.73
Expository	62	3.43 ^b	0.45	3.30	3.57

Note. Means with different superscripts are different at $p < .05$ or less

Hypothesis 2

Hypothesis 2 posited that higher ratings of argument strength would predict positive changes in persuasive outcomes in the expository condition but not in the narrative conditions. A linear regression revealed no significant interactions between argument strength and condition (Table 4.2). All t scores were < 1.96 . Therefore, hypothesis 2 was not supported.

Table 4.2: Regression Results- Argument Strength x Condition

	<i>B</i>	<i>SE B</i>	<i>t</i>	Pr > <i>t</i>	<i>F</i>	Pr > <i>F</i>
Attitude toward provider	-.11	.13	-1.09	.28	1.28	.28
Attitude toward vaccine	-.11	.12	-0.91	.36	.83	.36
Vaccine receptiveness	-.09	.06	-1.44	.15	2.07	.15

Hypothesis 3

Hypothesis 3 predicted that participants in the narrative conditions would experience higher levels of perceived realism than participants in the expository condition. A univariate ANOVA indicated no significant differences for ratings of perceived realism among conditions, $F(3, 256) = 2.34, p = .07, \eta^2 = .03$. Therefore, hypothesis 3 was not supported (Table 4.3).

Table 4.3: ANOVA Results- Perceived Realism

Message Condition	<i>N</i>	<i>Mean</i>	<i>SD</i>	95% Confidence Interval	
				Lower Bound	Upper Bound
Academic	65	5.05 ^a	0.87	4.84	5.27
Classic	65	5.00 ^a	0.85	4.79	5.20
Expository	62	4.80 ^a	0.71	4.62	4.98

Note. Means with different superscripts are different at $p < .05$ or less

Hypothesis 4

Hypothesis 4 posited that higher levels of perceived realism would predict positive persuasive outcomes in the narrative conditions but not in the expository condition. A linear regression revealed a significant interaction effect between perceived realism and condition (Table 4.4). Stratified ANOVA models revealed that perceived realism interacted with both the classic narrative, $B = .52, t(1, 65) = 2.56, p = .01$, and the

expository condition, $B = .80$, $t(1.61) = 3.34$, $p = .002$, to predict positive changes in attitude toward provider. Specifically, the interaction between perceived realism and the classic narrative explained approximately 9% of the variance in attitude toward provider, $R^2 = .09$, $F(1, 65) = 6.56$, $p = .01$, and the interaction between perceived realism and the expository condition explained approximately 16% of the variance in attitude toward provider, $R^2 = .16$, $F(1, 61) = 11.14$, $p = .002$ (Table 4.5). However, no significant interactions were revealed between perceived realism and condition for attitude toward vaccine or vaccine receptiveness. All t scores for those outcomes were < 1.96 . Therefore, hypothesis 4 was only partially supported.

Table 4.4: Regression Results- Perceived Realism x Condition

	<i>B</i>	<i>SE B</i>	<i>t</i>	Pr > <i>t</i>	<i>F</i>	Pr > <i>F</i>
Attitude toward provider	.17	.08	2.07	.04	4.27	.04*
Attitude toward vaccine	.07	.07	1.04	.30	1.08	.30
Vaccine receptiveness	.01	.04	0.21	.83	.04	.83

Table 4.5: Stratified ANOVA Results- Perceived Realism x Condition – Attitude toward Provider

	<i>B</i>	<i>SE B</i>	<i>t</i> (<i>df</i>)	Pr > <i>t</i>	R^2	<i>F</i>	Pr > <i>F</i>
Academic	.09	.17	0.54(1, 64)	.59	.005	.30	.59
Classic	.52	.20	2.56(1, 65)	.01	.09	6.56	.01*
Expository	.80	.24	3.34 (1, 61)	.002	.16	11.14	.002**

Hypothesis 5

Hypothesis 5 predicted that participants in the narrative conditions would experience higher levels of transportation than participants in the expository condition. A

univariate ANOVA indicated significant differences for transportation among conditions $F(3, 256) = 7.59, p < .001, \eta^2 = .08$. LSD post-hoc tests revealed that transportation scores for the academic narrative ($M = 4.20, SD = 1.02$) and the class narrative ($M = 4.12, SD = 0.88$) were significantly higher than transportation scores in the expository condition ($M = 3.49, SD = 0.93$). There were no significant differences between the academic and classic narrative conditions in terms of transportation (Table 4.6). Participants in this study were more transported by the narrative conditions than the expository condition. Therefore, hypothesis 5 was supported.

Table 4.6: ANOVA Results- Transportation

				95% Confidence Interval	
Message Condition	<i>N</i>	<i>Mean</i>	<i>SD</i>	Lower Bound	Upper Bound
Academic	65	4.20 ^a	1.02	3.98	4.43
Classic	65	4.12 ^a	0.88	3.89	4.34
Expository	62	3.49 ^b	0.93	3.26	3.73

Note. Means with different superscripts are different at $p < .05$ or less

Hypothesis 6

Hypothesis 6 posited that higher levels of transportation would predict positive persuasive outcomes in the narrative conditions but not in the expository condition. A linear regression revealed no significant interactions between transportation and condition (Table 4.7). All t scores were < 1.96 . Therefore, hypothesis 6 was not supported.

Table 4.7: Regression Results- Transportation x Condition

	<i>B</i>	<i>SE B</i>	<i>t</i>	Pr > <i>t</i>	<i>F</i>	Pr > <i>F</i>
Attitude toward provider	-.11	.08	-1.43	.15	2.04	.15
Attitude toward vaccine	-.08	.07	-1.11	.26	1.24	.26
Vaccine receptiveness	.01	.04	0.35	.72	.12	.72

Hypothesis 7

Hypothesis 7 predicted that participants in the expository condition would rate source credibility higher than participants in the narrative conditions. A univariate ANOVA indicated significant differences in source credibility among conditions $F(3, 257) = 64.87, p < .001, \eta^2 = .43$. LSD post-hoc tests revealed that the main character of Dr. Day in the expository condition received significantly higher scores of source credibility ($M = 5.05, SD = 1.09$) than did the main character of Justin in both the academic ($M = 3.20, SD = 0.89$) and classic ($M = 3.37, SD = 0.87$) narrative conditions. However, a second univariate ANOVA also indicated significant differences for source credibility for the supporting character of Rob among conditions $F(3, 256) = 7.23, p < .001, \eta^2 = .08$. LSD post-hoc tests revealed that Rob received significantly higher source credibility scores in both the academic ($M = 5.49, SD = 1.02$) and classic narrative conditions ($M = 5.47, SD = 1.06$) than Dr. Day. Participants in this study rated Dr. Day as being more credible than the hapless hero Justin but less credible than the pre-med major Rob. No significant differences were discovered for the character Charlie (Table 4.8). Hypothesis 7 is only partially supported.

Table 4.8: ANOVA Results- Source Credibility

95% Confidence						
Interval						
	Message Condition	<i>N</i>	<i>Mean</i>	<i>SD</i>	Lower Bound	Upper Bound
Justin	Academic	65	3.20 ^a	0.89	2.97	3.43
	Classic	66	3.37 ^a	0.87	3.14	3.60
Dr. Day	Expository	62	5.05 ^b	1.09	4.81	5.28
Rob	Academic	65	5.49 ^c	1.02	5.24	5.74
	Classic	64	5.47 ^c	1.06	5.22	5.72
Charlie	Academic	65	4.79 ^{a,b,c}	.87	4.58	5.00
	Classic	55	4.99 ^{a,b,c}	.98	4.75	5.23

Note. Means with different superscripts are different at $p < .05$ or less

Hypothesis 8

Hypothesis 8 posited that higher levels of source credibility would predict positive persuasive outcomes in the expository condition but not in the narrative conditions. A linear regression revealed a significant interaction effect between source credibility and condition (Table 4.9).

Table 4.9: Regression Results- Source Credibility

<i>(Justin) x Condition</i>						
	<i>B</i>	<i>SE B</i>	<i>t</i>	Pr > <i>t</i>	<i>F</i>	Pr > <i>F</i>
Attitude toward provider	.25	.08	3.33	.001	11.10	.001**
Attitude toward vaccine	.20	.07	3.09	.002	9.57	.002**
Vaccine receptiveness	.05	.04	1.19	.24	1.42	.24
<i>(Rob) x Condition</i>						
	<i>B</i>	<i>SE B</i>	<i>t</i>	Pr > <i>t</i>	<i>F</i>	Pr > <i>F</i>
Attitude toward provider	-.02	.07	.30	.77	.09	.77
Attitude toward vaccine	-.01	.06	-.14	.89	.02	.89

Vaccine receptiveness	-.03	.04	-.80	.42	.64	.42
<i>(Charlie) x Condition</i>						
	<i>B</i>	<i>SE B</i>	<i>t</i>	<i>Pr > t </i>	<i>F</i>	<i>Pr > F</i>
Attitude toward provider	-.01	.07	-.16	.87	.03	.87
Attitude toward vaccine	.11	.07	1.57	.12	2.47	.12
Vaccine receptiveness	.06	.04	1.33	.18	1.76	.18

Stratified ANOVA models revealed that source credibility interacted with the classic narrative, $B = -.81$, $t(1, 65) = -4.50$, $p < .0001$, to predict negative changes in attitude toward provider. Specifically, the interaction between perceptions of the character Justin’s credibility and the classic narrative explained approximately 24% of the variance in attitude toward provider, $R^2 = .24$, $F(1, 65) = 20.23$, $p < .0001$.

Conversely, stratified ANOVA models revealed that source credibility interacted with the expository condition, $B = .52$, $t(1, 61) = 3.34$, $p = .002$, to predict positive changes in attitude toward provider. The interaction between perceptions of the character Dr. Day’s credibility explained approximately 16% of the variance in attitude toward provider, $R^2 = .16$, $F(1, 61) = 20.23$, $p = .002$ (Table 4.10).

Table 4.10: Stratified ANOVA Results- Source Credibility (Justin/Dr. Day) x Condition – Attitude toward Provider

	<i>B</i>	<i>SE B</i>	<i>t(df)</i>	<i>Pr > t </i>	<i>R²</i>	<i>F</i>	<i>Pr > F</i>
Academic	-.03	.17	-.18(1, 64)	.85	.001	.03	.85
Classic	-.81	.18	-4.50(1, 65)	<.0001***	.24	20.23	<.0001***
Expository	.52	.16	3.34(1, 61)	.002**	.16	11.13	.002**

Furthermore, stratified ANOVA models revealed that source credibility interacted with the classic narrative, $B = -.55$, $t(1, 65) = -3.96$, $p = .0002$, to predict negative changes in attitude toward vaccine. Specifically, the interaction between perceptions of the character Justin’s credibility and the classic narrative explained approximately 20% of the variance in attitude toward vaccine, $R^2 = .20$, $F(1, 65) = 15.70$, $p = .0002$. Conversely, stratified ANOVA models revealed that source credibility interacted with the expository condition, $B = .51$, $t(1, 61) = 3.51$, $p = .001$, to predict positive changes in attitude toward vaccine. The interaction between perceptions of the character Dr. Day’s credibility explained approximately 17% of the variance in attitude toward vaccine, $R^2 = .17$, $F(1, 61) = 12.33$, $p = .001$ (Table 4.11). In the classic narrative, for both attitude toward provider and attitude toward vaccine, increased credibility scores for Justin predicted negative attitudes toward talking to a healthcare provider about the HPV vaccine and receiving the HPV vaccine. In the expository condition, increased credibility scores for Dr. Day predicted positive attitudes toward talking to a healthcare provider about the HPV vaccine and receiving the HPV vaccine.

Table 4.11: Stratified ANOVA Results- Source Credibility (Justin/Dr. Day) x Condition – Attitude toward Vaccine

	<i>B</i>	<i>SE B</i>	<i>t</i> (df)	Pr > <i>t</i>	<i>R</i> ²	<i>F</i>	Pr > <i>F</i>
Academic	.08	.14	.62(1, 64)	.54	.006	0.38	.54
Classic	-.55	.14	-3.96(1, 65)	.0002**	.20	15.70	.0002**
Expository	.51	.15	3.51(1, 61)	.001**	.17	12.33	.001**

Linear regression models revealed no significant interaction effects for Justin’s or Dr. Day’s credibility and vaccine receptiveness. Nor were significant interactions

revealed for source credibility and condition for the characters of Rob and Charlie. All t scores were < 1.96 . Therefore, hypothesis 8 was only partially supported.

Hypothesis 9

Hypothesis 9 predicted that participants in the narrative conditions would have higher levels of identification with characters than participants in the expository condition. A univariate ANOVA for the main characters of Justin and Dr. Day indicated no significant differences among conditions, $F(3, 258) = 1.67, p = .17, \eta^2 = .02$.

However, a univariate ANOVA indicated significant differences in identification for the secondary character of Rob compared to Dr. Day, $F(3, 258) = 25.44, p < .001, \eta^2 = .23$. Similarly, a univariate ANOVA indicated significant differences for identification with the secondary character Charlie when compared to Dr. Day, $F(3, 258) = 14.87, p < .001, \eta^2 = .15$. LSD post-hoc tests revealed that participants identified significantly more with Rob in both the academic ($M = 6.00, SD = 2.22$) and classic ($M = 6.27, SD = 2.13$) narrative conditions than they did with Dr. Day ($M = 3.81, SD = 1.98$). Furthermore, participants identified significantly more with Charlie in both the academic ($M = 5.41, SD = 2.19$) and classic ($M = 5.89, SD = 2.47$) conditions than they did with Dr. Day (Table 4.12). In this study, participants identified more with two of the three characters in the narrative conditions than with the main character in the expository condition.

Therefore, hypothesis 9 was only partially supported.

Table 4.12: ANOVA Results- Identification

95% Confidence						
Interval						
	Message Condition	<i>N</i>	<i>Mean</i>	<i>SD</i>	Lower Bound	Upper Bound
Dr. Day	Expository	62	3.81 ^a	1.98	3.33	4.29
Justin	Academic	65	3.61 ^a	1.78	3.17	4.05
	Classic	66	3.27 ^a	2.03	2.77	3.76
Rob	Academic	65	6.00 ^b	2.22	5.80	6.51
	Classic	66	6.27 ^b	2.13	5.77	6.77
Charlie	Academic	65	5.41 ^b	2.19	4.89	5.94
	Classic	66	5.89 ^b	2.47	5.37	6.41

Note. Means with different superscripts are different at $p < .05$ or less

Hypothesis 10

Hypothesis 10 predicted that higher levels of identification would predict positive persuasive outcomes in the narrative conditions but not in the expository condition.

Linear regression models revealed no significant interactions between identification and condition (Table 4.13). All t scores were < 1.96 . Therefore, hypothesis 10 was not supported.

Table 4.13: Regression Results- Identification (Justin/Dr. Day) x Condition

	<i>B</i>	<i>SE B</i>	<i>t</i>	Pr > <i>t</i>	<i>F</i>	Pr > <i>F</i>
Attitude toward provider	.03	.04	.08	.44	.56	.44
Attitude toward vaccine	.06	.04	1.71	.09	2.91	.09
Vaccine receptiveness	.02	.02	1.01	.31	1.02	.31
<i>Regression Results- Identification (Rob) x Condition</i>						
	<i>B</i>	<i>SE B</i>	<i>t</i>	Pr > <i>t</i>	<i>F</i>	Pr > <i>F</i>
Attitude toward provider	-.05	.04	-1.39	.17	1.93	.17

Attitude toward vaccine	-.02	.03	-1.75	.45	.57	.45
Vaccine receptiveness	-.02	.02	-1.15	.25	1.33	.25
<i>Regression Results- Identification (Charlie) x Condition</i>						
	<i>B</i>	<i>SE B</i>	<i>t</i>	<i>Pr > t </i>	<i>F</i>	<i>Pr > F</i>
Attitude toward provider	-.06	.04	-.159	.11	2.25	.11
Attitude toward vaccine	-.003	.03	-.12	.90	.01	.90
Vaccine receptiveness	.003	.18	.22	.83	.05	.83

Hypothesis 11

Hypothesis 11 predicted that there would be differences in emotional arousal between the narrative conditions and the expository condition. No significant differences were discovered for negative emotional arousal among conditions (Table 4.14). However, a univariate ANOVA indicated significant differences in positive emotional arousal among conditions, $F(3, 258) = 4.41, p = .005, \eta^2 = .05$. LSD post-hoc tests revealed that positive emotional arousal was significantly higher in both the academic ($M = 3.97, SD = 1.94$) and classic ($M = 4.32, SD = 1.96$) conditions than it was in the expository condition ($M = 3.06, SD = 2.18$). In other words, participants in this study experienced significantly higher positive emotional arousal in the narrative conditions than they did in the expository condition (Table 4.15). Therefore, hypothesis 11 was partially supported.

Table 4.14: ANOVA Results- Negative Emotion

95% Confidence Interval						
	Message Condition	<i>N</i>	<i>Mean</i>	<i>SD</i>	Lower Bound	Upper Bound
Negative Emotion	Academic	65	3.29 ^a	2.02	2.19	3.80
	Classic	66	3.41 ^a	1.73	2.99	3.84
	Expository	62	3.09 ^a	2.12	2.55	3.63

Note. Means with different superscripts are different at $p < .05$ or less

Table 4.15: ANOVA Results- Positive Emotion

95% Confidence Interval						
	Message Condition	<i>N</i>	<i>Mean</i>	<i>SD</i>	Lower Bound	Upper Bound
Positive Emotion	Academic	65	3.97 ^a	1.94	3.48	4.47
	Classic	66	4.33 ^a	1.96	3.83	4.82
	Expository	62	3.06 ^b	2.18	3.37	3.57

Note. Means with different superscripts are different at $p < .05$ or less

RQ1

A research question asked whether the academic and classic narratives would affect persuasive outcomes differently. Univariate ANOVAs indicated no significant differences among conditions for attitude toward provider, $F(3, 258) = 1.31, p = .27, \eta^2 = .02$, or attitude toward vaccine, $F(3, 258) = 2.16, p = .09, \eta^2 = .03$. A univariate ANOVA did indicate differences among conditions for vaccine receptiveness, $F(3, 258) = 3.4, p = .02, \eta^2 = .04$. However, the differences were only between the classic ($M = 2.95, SD = 0.56$) and expository conditions ($M = 2.59, SD = 0.68$). The academic and classic narratives did not affect persuasive outcomes differently. Tables 4.16-4.18 present these findings. A summary of all findings is presented in Table 4.19.

Table 4.16: ANOVA Results- Attitude toward Provider

95% Confidence						
Interval						
	Message Condition	<i>N</i>	<i>Mean</i>	<i>SD</i>	Lower Bound	Upper Bound
Attitude toward Provider	Academic	65	6.28	1.21	5.98	6.58
	Classic	66	6.15	1.46	5.79	6.51
	Expository	62	5.85	1.46	5.48	6.22

Note. Means with different superscripts are different at $p < .05$ or less

Table 4.17: ANOVA Results- Attitude toward Vaccine

95% Confidence						
Interval						
	Message Condition	<i>N</i>	<i>Mean</i>	<i>SD</i>	Lower Bound	Upper Bound
Attitude toward Vaccine	Academic	65	6.47	1.01	6.20	6.70
	Classic	66	6.42	1.10	6.16	6.69
	Expository	62	5.98	1.34	5.64	6.32

Note. Means with different superscripts are different at $p < .05$ or less

Table 4.18: ANOVA Results- Vaccine Receptiveness

95% Confidence						
Interval						
	Message Condition	<i>N</i>	<i>Mean</i>	<i>SD</i>	Lower Bound	Upper Bound
Vaccine Receptiveness	Academic	65	2.72	.75	2.54	2.90
	Classic	66	2.93	.60	2.81	3.10
	Expository	62	2.59	.09	2.42	2.77

Note. Means with different superscripts are different at $p < .05$ or less

Table 4.19: Summary of Study Findings

Variable	Differences among Conditions?	Predict Persuasive Outcomes?
Argument Strength	Yes, but not as predicted: Higher scores for Academic Narrative condition than Expository condition	No
Perceived Realism	No	Positive relationship found for attitude toward provider for Classic Narrative and Expository conditions
Transportation	Yes, as predicted: Higher scores for Academic and Classic Narrative conditions than Expository condition	No
Source Credibility	Yes, partially as predicted: Higher scores for Dr. Day than Justin; however, higher scores for Rob than Dr. Day	Negative relationship found for attitude toward provider and attitude toward vaccine for Classic Narrative condition; Positive relationship found for attitude toward provider and attitude toward vaccine for Expository condition
Identification	Yes, partially as predicted: Higher scores for Rob and Charlie than Dr. Day, but no differences in scores between Justin and Dr. Day	No
Emotions	No differences in Negative Emotions; Positive Emotions higher in Academic and Classic Narrative conditions than Expository condition	

CHAPTER FIVE

Discussion

The purpose of this study was to examine the persuasive mechanisms and effects of expository and narrative HPV vaccination messages targeted toward young men. A series of hypotheses proposed that certain persuasive mechanisms would be more salient and effective in an expository message condition (i.e., argument strength and source credibility), whereas others would be more salient and effective in narrative message conditions (i.e., perceived realism, transportation, and identification). A non-directional hypothesis predicted that there would be differences in emotional arousal among the expository and narratives conditions. Finally, a research question asked whether an academic narrative (i.e., written without a formal structure) would affect persuasive outcomes differently than a classic narrative (i.e., written with a classical literary structure).

Persuasive Mechanisms

Based upon research concerning expository persuasion within the ELM framework, which has strong correlates to variables studied in narrative persuasion, this study examined several persuasive mechanisms from these two distinctive message types within a single CMC environment (i.e., men's health blogs). Theoretically, argument strength and source credibility effects should be stronger in expository messages, and perceived realism, transportation, and identification effects should be stronger in narrative messages.

Argument strength. Contrary to expectations, ratings of argument strength were not highest in the expository condition; instead, they were highest in the academic

narrative condition. One possible explanation is that the “arguments” were, for all intents and purposes, the same across conditions. Each of the six statements from the HPV fact sheet were presented in an expository or narrative fashion. For example, in the expository condition one argument read, “Most sexually active men and women in the United States will have HPV at some point in their lives.” In the narrative conditions, as spoken by Rob, this same argument read, “Anybody can get HPV. In fact, most sexually active people will have it at some point.” However, if the arguments were substantively the same, one should expect no differences between the academic and classic narratives, since the arguments in the academic and classic conditions were exactly the same. Because this was not the case, it is reasonable to speculate that there must have been some story element present in the academic narrative, but absent in the classic narrative, that enhanced argument strength; or, there could have been some element in the classic narrative that detracted from argument strength. Researchers have argued that numerous message factors (e.g., character attractiveness, story complexity, subplots) can affect desired experimental outcomes negatively (Slater, Peter, & Valkenburg, 2015). This might be the case here.

A second explanation for these findings is that there was no manipulation of argument strength in this study. Many studies of expository persuasion using an ELM framework compare strong arguments to weak arguments (see Carpenter, 2014). By not manipulating argument strength, this study relied on the notion that expository messages would be processed centrally because they were simply expository messages, therefore making them “stronger” arguments. However, research indicates that under conditions of substantial transportation (like the ones in this study), argument strength becomes less

relevant because people converge on an overall story and do not contemplate specific messages (Green & Brock, 2001). Therefore, when argument strength was measured by having participants think about individual messages after already receiving them in an effective narrative, they may have perceived the messages to be especially strong, or at least not weak. That is, if they liked the story, individual arguments may have been more persuasive. For example, if people enjoy a comedic movie, they can likely recall specific lines and why they were effective. However, if jokes were presented out of context of the entire scene (e.g., “And don’t call me Shirley”), they would likely be perceived as less amusing.

Perceived realism. Unfortunately, no differences were found among the conditions in terms of perceived realism. However, it is worth noting that ratings of perceived realism were relatively high across all conditions ($M = 4.80 - 5.05$ on a seven-point scale). This indicates that the effort that went into mimicking a realistic men’s health blog, whether through depicting a story or presenting an alleged doctor’s blog, was successful. When constructing each message condition, the researcher worked with internet technology professionals to create an online environment that participants might encounter in reality. According to the scores for perceived realism, participants seemed to believe that they were reading facts from a physician or a realistic (even if fictional) story about three friends. In addition, participants were told they were reading a health blog, which may have primed them to evaluate the messages within their existing conceptions of what a health blog would look like.

Transportation. Participants in both the academic and classic narratives were more transported than were participants in the expository condition. This is one of only

two persuasive variables in this study that behaved as theoretically expected. The storytelling was apparently sufficient enough to transport participants into the narrative environments, at least compared to the expository condition. However, this transportation apparently was not sufficient to translate into persuasive effects (discussed later in this chapter). This finding is consistent with existing research that discovered effects for transportation, but not for persuasion (Murphy et al., 2013).

Additionally, there were no significant differences between the academic and classic narratives in terms of transportation. This effect was not hypothesized. However, to find that a classic narrative led to greater transportation than an academic narrative would be in line with the conceptualization of a classic narrative as a “better” story, as informed by literary theory and Propp’s (1968) morphology. As noted earlier, though, a significant amount of work went into narrative development, and by attempting to keep both the academic and classic narratives similar enough to each other, variance that might have otherwise provided insight into transportation was likely diminished. However, transportation does seem to be an effect of narratives and not of expository messages.

Source credibility. Theoretically, Dr. Day, the expert physician in the expository condition, should have received the highest ratings of source credibility. However, the character Rob in both narrative conditions received the highest credibility scores. A possible explanation for this finding is that Rob was identified in the narratives as being a premed major, thus conferring credibility on him. This notion is supported by the fact the character Charlie, who was only identified as a student and friend, did not differ significantly in terms of source credibility from Dr. Day. To be clear, Dr. Day was perceived to be more credible than the character of Justin in the narrative conditions.

However, the subject of both narratives was Justin's ignorance and irresponsibility, indicating he was not credible.

Identification. Participants identified significantly more with the characters Rob and Charlie in both the academic and narrative conditions than with Dr. Day. As intended in the academic narrative, Justin was the character least identified with in all conditions. What is most interesting about these findings was that there were no differences between the academic and classic narratives in terms of identification with Justin. Although he is the "hero" of the story, he is portrayed within the classic humor trope of arrogance and ignorance (e.g., *The Colbert Report*, *It's Always Sunny in Philadelphia*) in both tales. However, in the classic narrative, he undertakes a true hero's journey according to Propp's (1968) morphology. It is reasonable to assume that participants would not identify with a comedic fool in the academic narrative. Yet, it is not unreasonable to assume that a true hero would receive higher identification scores when he completes a hero's journey. That there were no differences is another strike against the academic versus classic distinction, at least as operationalized in this study.

However, as noted in the methods, the researcher hired students at the university where the experiment was conducted as models for the narrative conditions, and a professional photographer took pictures of the characters interacting in and around popular campus landmarks. Furthermore, the script was subjected to focus group scrutiny and revisions were made before the final experiment. Thus, identification was deliberately enhanced in both narratives.

Emotion. No differences were discovered between any of the experimental conditions for negative emotion. However, significant differences were discovered for

positive emotion, such that the academic and classic narratives elicited more positive emotions than the expository messages. However, it is worth noting that emotional arousal for positive emotions was low overall ($M = 3.06 - 4.32$ on a 10-point scale), indicating a relative lack of success in the construction of emotionally evocative stories. Due to the similarity of the narratives, it is difficult to determine why this occurred. That is, had the two narratives differed in more respects, and had subsequent differences in positive emotional response between the two narrative conditions been revealed, message elements associated with emotional differences could potentially have been isolated. However, both stories had similar structures, characters, and humorous intentions, and both were refined through focus group review, so potential differences were muted.

Persuasive Outcomes

Based upon current research that suggests separate persuasive processes for expository and narrative persuasion, this study explored the relevant persuasive effects of expository and narrative HPV messages employing those mechanisms within a single media environment. According to the ELM, argument strength and source credibility should enhance central processing and lead to positive persuasive outcomes in expository messages. Conversely, according to narrative research, perceived realism, transportation, and identification should lead to positive persuasive outcomes in narrative messages on their own. Results from this study, however, did not paint such a clear picture.

Argument strength. Argument strength did not predict persuasive outcomes in any condition in this study. Ratings of arguments strength were moderate overall ($M = 3.44 - 3.71$ on a five-point scale), indicating that the messages selected for analysis were not very persuasive. In fact, ratings of argument strength were lowest in the expository

condition. If participants in the expository condition were centrally processing the message, low ratings on argument strength would not be expected to lead to persuasion, so this result, although disappointing, is not all that surprising.

Perceived realism. Contrary to expectations, perceived realism predicted attitudes toward talking to a healthcare provider about the HPV vaccine in both the expository and classic narrative conditions but not the academic narrative condition. That no differences were found between the impact of the expository message and the classic narrative can be attributed in part to the quality of the messages across conditions overall. It is somewhat surprising, therefore, that perceived realism did not predict persuasive outcomes for the academic narrative. However, as Cho et al. (2014) noted, perceived realism is multifaceted construct; without breaking it up into its sub-dimensions, it is difficult to determine what was perceived to be realistic vs. unrealistic in each narrative. For the sake of parsimony, this study relied on the single construct approach to analysis. Future research can consider potential differences in the sub-dimensions.

Transportation. Transportation did not predict persuasive outcomes in any condition in this study. Transportation scores were modest at best ($M = 3.51 - 4.20$ on a seven-point scale), however, indicating that although people were transported, they apparently were not transported enough to lead to persuasion. One possible explanation for these findings is that although some elements of the story seemed enjoyable to participants, they may have detracted from persuasive effects. A particular problem may have been the comedy used in the development of the narrative. At one point in both narratives, Justin refers to getting the HPV vaccine to avoid getting “grumpy bumps on my junk.” This harkens back to a warning from Conway and Dubé (2002), who noted

that humor can trivialize health outcomes when jokes are specifically about those outcomes. The joke about genital warts may have been perceived as humorous and enjoyable within the overall story, but it may have also diminished the threat of genital warts. Again, the choices message designers make have the potential to enhance or detract from desired persuasive outcomes.

Source credibility. Source credibility predicted both attitudes toward talking to a healthcare provider and attitudes toward getting the vaccine in the expository and classic narrative conditions but not the academic narrative condition. In the expository condition, higher credibility scores for Dr. Day predicted more positive attitudes. Conversely, high credibility scores for the main character Justin in the classic narrative predicted more negative attitudes toward both talking about the HPV vaccine with a healthcare provider and getting the HPV vaccine itself. This finding is problematic in two ways. First, Justin was created to be ignorant and irresponsible in the narrative conditions, so it was hoped that he would not be perceived as credible at all. Second, it is unfortunate to have participants walk away from an intervention with negative attitudes about a desired outcome. However, the participants who would have perceived Justin as credible may have been beyond the reach of this persuasive attempt anyway, as they would likely have mirrored his poor judgment. It is also strange that Rob, who received the highest source credibility scores, did not have persuasive effects. Perhaps this is because the persuasive outcomes concerned interacting with a healthcare provider. Dr. Day was identified as a physician, and Rob was identified as only a premed major.

Identification. Identification did not predict persuasive outcomes in any condition in this study. Identification scores were moderate ($M = 3.37 - 6.26$ on a 10-

point scale), though, which might explain why identification did not lead to persuasion. As Murphy et al. (2013) discovered, identification with characters in a story is often idiosyncratic. In their study, they discovered differences in identification with three characters who varied in age and health behaviors. Participants identified with the characters based upon age, race, and attitudes toward cervical cancer screening. Any of these variations could have been present in this study, and perhaps even more. Other factors, such as attitudes toward sexual activity, levels of masculinity, and socio-demographic differences could enhance or detract from identification. Future studies should examine how the intricacies of identification can enhance persuasion. Finally, the participants who identified with Justin were less likely to have positive attitudes toward HPV vaccine and vaccine receptiveness in both narrative conditions. This further suggests that a classic narrative is not necessarily better because of its structure.

Effects Due to Academic vs. Classic Narrative Condition

Due to the complicated nature of narrative research, specifically what constitutes a narrative, this study attempted to discover how a formally structured narrative would differ from a less formulaic academic narrative. In the persuasive message design literature, the effects of narratives on outcome variables such as attitude have been inconsistent; sometimes narratives perform better than comparison messages (e.g., expository, statistical, some other instantiation) and sometimes they perform worse. This is revealed both in individual studies (e.g., Han & Fink, 2012; Hoeken, 2001) and meta-analyses (e.g., Allen et al., 2000; Allen & Preiss, 1997). This could be due to inconsistencies in narrative operationalization, including the design of very brief, poorly

structured, or pallid narratives. It is possible that a more classically crafted narrative, one that relied on literary theory for development, could show stronger message effects.

Unfortunately, no differences emerged for the attitude measures between the academic and classic narrative conditions. It is worth mentioning, however, that attitudes toward talking to a healthcare provider about the HPV vaccine and getting the HPV vaccine itself were highly positive across conditions ($M = 5.85 - 6.45$ on a seven-point scale). Therefore, no matter what condition a participant was assigned, he had positive attitudes toward the desired outcome. One thing to consider is that this posttest-only design could not measure attitude *change*, which may have been more indicative of true persuasion. Rather, it is more likely that this study captured attitude *formation*. That is, many participants were likely reflective of a general undergraduate male audience, which knows very little about HPV, its consequences for men, and the vaccine itself (Hunter & Weinstein, 2015). If the experiment was one of the first encounters participants had with male-relevant HPV information, it is highly likely that they had no preexisting attitudes, and there are a host of factors that may explain why attitudes were highly positive. In the expository condition, initial attitudes could be based on central or peripheral processing. Perhaps the mere enjoyment of learning something new about men's health lead to positive attitude formation (heuristic), or participants elaborated on Dr. Day's arguments. From a narrative perspective, transportation into the story or identification with Rob and Charlie could explain why initial attitudes were positive.

Differences also did not emerge between the academic and classic narrative conditions for vaccine receptiveness. Scores for vaccine receptiveness in these two conditions were reputable ($M = 2.72 - 2.95$ on a four-point scale), however, indicating

that both narratives promoted some levels of receptiveness toward HPV vaccine. It is worth noting here that there was a difference in vaccine receptiveness between the classic narrative and expository conditions: Participants assigned to the classic condition were significantly more likely to express vaccine receptiveness than participants assigned to the expository condition. This is an interesting finding, especially considering the lack of differences between the classic and academic narratives in terms of persuasive mechanisms (i.e., perceived realism, transportation, and identification). That is, should participants in the academic condition not also be more receptive to the vaccine than those in the expository condition? Because they were not, perhaps there is some important difference between the classic and academic narratives. Indeed, one key difference between the narratives was a tangible reward. In the academic narrative, Justin receives the HPV vaccine and avoids getting HPV and genital warts. He learns a lesson. However, in the classic narrative, Justin's newfound responsibility leads to him reuniting with his former girlfriend. Perhaps this was especially appealing to the male audience and justifies why one narrative predicted significantly higher vaccine receptiveness than the expository message.

Limitations

There are some limitations to this study worth noting. First, there may be issues with internal validity due to study design. Participants were sent a link to the survey, which they were able to complete on any computer with an internet connection. Therefore, participants may not have become as transported into the narratives, identified with the characters, or developed emotional responses to the messages due to outside distractions. Indeed, when watching a movie, or dedicating time to read a book, people

are making conscious choices to engage with narratives in a meaningful way. However, in this case, although participants were instructed to take their time and read each word carefully, they may have been exposed to multiple interruptions, perhaps explaining the poor to moderate scores on transportation, identification, and emotional arousal. From an ELM perspective, such distraction would impair participants' ability to centrally process the message, potentially compromising its persuasive impact. Even admitting this limitation, it is important to consider how people encounter health information in the real world. For example, people may read a health blog in their homes, their workplaces, or even the local coffee shop, which could lead to the same types of distractions that participants in this study may have encountered. As with all studies that attempt to be both theoretical and practical, difficult choices about internal and ecological validity can affect study outcomes.

A second limitation of this study concerns statistical power. With only 258 participants in the study, and no more than 65 participants per condition, this experiment may have lacked the power to generate significant results. Indeed, the most comparable study to this one, which had more than twice the number of participants and only two conditions, did not reveal significantly higher effect sizes than this study (Murphy et al., 2013). Had this study been powered on the basis of Murphy et al. (2013), conducting it would not have been feasible given available resources. Therefore, G*Power was used to determine sample sized based upon a multiple linear regression model, with an effect size of .10, and using 10 predictors (i.e., six explanatory variables and four conditions) revealing a need for a total sample size of 254. Future research should strive for both stronger experimental manipulations and larger sample sizes.

A third limitation of this study concerns possible confounding variables that might have affected attitudes and vaccine receptiveness. First, 16 participants indicated that they had already received at least one dose of the HPV vaccine. Second, without a pre-test it is difficult to determine if participants in this study were predisposed to have favorable or unfavorable attitudes toward the HPV vaccine. Third, in an attempt to use masculine-based humor, it would have been helpful to measure participants' levels of heteronormativity.

A fourth limitation of this study concerns the academic and classic narratives. The development of the academic narrative was complex. The researcher began by creating a basic storyboard of the narrative using the CDC's HPV fact sheet for men. He also drew inspiration from popular sitcoms to write background information and personality profiles for the main characters. He then consulted with a professional screenwriter, who wrote the first draft of the narrative. The screenwriter's draft was not suitable for the intervention overall because its humor bordered upon extreme vulgarity and trivialized the consequences of HPV. However, some elements were maintained by the researcher, who wrote the final script. When the academic narrative was complete, the researcher examined how he could enhance it using Propp's (1968) morphology. The classic narrative was simply an extension of a considerably well-developed academic narrative rather than a story that was written from beginning to end with a classic structure. In fact, as has already been mentioned, the academic narrative may have been too classically structured to vary significantly from the classic narrative. In an attempt to control for too many differences, opportunities for variance were likely eliminated. A better approach

would have been to find an already pallid narrative to develop into a classically structured story.

Implications and Future Directions

This study is novel in the sense that it attempted to examine several variables known to affect two types of persuasive strategies—expository and narrative—within their own environments. Specifically, it was hypothesized that argument strength and source credibility would be persuasive only in expository messages, whereas perceived realism, transportation, and identification would be persuasive only in narrative conditions. However, only two variables (i.e., transportation and identification) behaved as expected. Furthermore, although these variables were significantly higher in the narrative conditions than they were in the expository condition, they did not lead to increased positive attitudes or vaccine receptiveness. Instead, the theoretically narrative variable of perceived realism predicted positive attitudes toward talking to a healthcare provider about the HPV vaccine in both the expository and classic narrative conditions. Moreover, the theoretically expository variable of source credibility had positive effects in the expository condition and negative effects in the classic narrative condition. These unexpected findings underscore some relevant implications.

First, rather than conceptualizing expository and narrative persuasion as two entirely separate processes, it is important to recognize that both theoretically expository and narrative variables can have effects across persuasive contexts. That is, as much as message designers attempt to isolate and manipulate specific message-related variables, there are likely multiple contemporaneous influences that affect the persuasive process. For example, argument strength and source credibility (both expository variables)

received the highest scores in the narrative conditions. Likewise, perceived realism (a narrative variable) was high in all conditions and led to persuasion in the expository condition. More complex study designs with more effective message manipulations will be necessary to determine if and how theoretically different expository and narrative persuasive processes occur. For example, each variable explored in this study should be manipulated in both narrative and expository conditions. That is, narratives with strong source credibility and weak source credibility vs. expository messages with strong and weak source credibility could be compared. Although this meticulous undertaking could produce interesting theoretical results, it would be tedious and again overlook how many persuasive variables converge to affect desired outcomes. Thus, perhaps a more practical implication should be examined.

This study can lay a practical framework for future studies of both expository and narrative messages. Since the variables in this experiment operated unexpectedly, researchers should attempt to maximize their effects. Researchers should work to enhance the perceived realism of expository messages. Working with writers, photographers, and internet technology specialists can enhance perceived realism of message conditions and lead to positive persuasive outcomes. In terms of narrative persuasion, it may be important to enhance source credibility of characters who are relaying the desired recommendations to participants. These strategies would be useful for public health practitioners and university health services.

Unfortunately, this study did not shed new light into the effects of emotion on persuasion. Emotional arousal was low overall and had no effects on persuasive outcomes. To be clear, the narratives were intended to be humorous. Therefore, in

retrospect, inquiring about participants' levels of relief, hopefulness, and compassion, even though these items were included in a scale from another narrative study (Murphy et al., 2013), was probably not appropriate. Future research should attempt to discover how to best elucidate and measure humor in persuasive attempts.

The final implication of this study is the introduction of a new way of constructing narratives. Propp's (1968) morphology can prove to be useful for future examinations of health narratives. Specifically, fully-developed classic narratives could be constructed from existing pallid narratives to provide more insight into the differences between academic and classic narratives and their effects on health.

Conclusion

In an attempt to distinguish how various persuasive mechanisms function within a single environment, this study seemed only to confirm the multiplex nature of persuasive message design. Rather than expository mechanisms affecting persuasion in an expository environment and narrative mechanisms affecting persuasion in narrative environments, a more complex and somewhat thorny system revealed itself. From a theoretical perspective, this might appear to be message design anarchy, where the rules of message design don't matter. However, from a practical standpoint, this study suggests that when constructing persuasive messages, researchers and practitioners should incorporate a host of persuasive components into realistic messages intended to improve health.

Appendix A

Messages by Condition

Expository Messages

1. Most sexually active men and women in the United States will have HPV at some point in their lives.
2. HPV usually presents no visible symptoms, causing men and women pass on HPV without realizing they're infected.
3. Condoms (if used for oral, vaginal, and anal sex) may lower your chances of contracting or passing on HPV, but HPV can infect areas other than the penis, so condoms may not fully protect against HPV.
4. HPV can cause genital warts in men, and can also be linked to penile and anal cancers.
5. The HPV vaccine has no serious side effects; the most common side effect is temporary soreness in the arm.
6. The HPV vaccine can prevent genital warts and HPV-related cancers.

Equivalent Messages in Academic & Classic Narratives

1. "Anybody can get HPV. In fact, most sexually active people will have it at some point."
2. "You won't know you have HPV because it doesn't have symptoms, so you can spread it around without knowing it."
3. "Sure condoms are probably better than nothing, but you can catch HPV on other areas that aren't... um... *covered* by condoms."
4. "No? Well, how about a fresh, hot case of genital warts, or anal cancer, or even cancer of the penis?"
5. "Any side effects?" "Yeah, my arm is kind of sore, but at least my D isn't."
6. "[the vaccine] will protect you from getting genital warts and *down there* cancers."

Comparison Condition

1. That pain proved to be a stage II non-seminoma tumor engulfing my left testicle.
2. The germ cell tumor contained several of the most aggressive types of testicular cancer cells.
3. According to my pathology report, the testicle and tumor was 99 grams, the size of a large egg.
4. It had doubled in size in 6 days.
5. I was fortunate to catch this extremely early and that was the foundation of my positive thinking.
6. Having a doctor tell you that you have cancer is one thing, but having him tell you that he is going to remove one of your testicles was truly the biggest loss of the day.

Appendix B

Expository Condition

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Health information for men


Aug 25, 2014 by Dr. Day, MD Comments are off

HPV Facts for Men



Dr. Day, MD
Men's Health Research Center

1. Most sexually active men and women in the United States will have HPV at some point in their lives.
2. HPV usually presents no visible symptoms, causing men and women pass on HPV without realizing they're infected.
3. Condoms (if used for oral, vaginal, and anal sex) may lower your chances of contracting or passing on HPV, but HPV can infect areas other than the penis, so condoms may not fully protect against HPV.
4. HPV can cause genital warts in men and can also be linked to penile and anal cancers.
5. The HPV vaccine has no serious side effects; the most common side effect is temporary soreness in the arm.
6. The HPV vaccine can prevent genital warts and HPV-related cancers.



Appendix C

Academic Narrative Condition



BROHEALTH.COM
I lead it. Inform others for men.

Spring Break

Charles, Charles, and the team had had to be honest up to Charles regarding the break. Making it back to work in March, Charles had to go back to work in March. Charles had to go back to work in March. Charles had to go back to work in March.



Charles had to go back to work in March. Charles had to go back to work in March. Charles had to go back to work in March. Charles had to go back to work in March.



Charles had to go back to work in March. Charles had to go back to work in March. Charles had to go back to work in March. Charles had to go back to work in March.



Charles had to go back to work in March. Charles had to go back to work in March. Charles had to go back to work in March. Charles had to go back to work in March.



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Charles had to go back to work in March. Charles had to go back to work in March. Charles had to go back to work in March. Charles had to go back to work in March.



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Charles had to go back to work in March. Charles had to go back to work in March. Charles had to go back to work in March. Charles had to go back to work in March.

Appendix E

Comparison Condition

Login




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Health information for men

Aug 25, 2014 by Anonymous Comments are off

Two Strikes, One Ball: My Testicular Cancer Story



"Ouch... Lynn you can't jump on my lap like that, I'm telling you it hurts." That was my reaction that Saturday evening, in late December, as my girlfriend innocently sat on my lap to put her arm around my neck and give me a kiss. In female language that pain and reaction translated to "You are trying to say that I'm fat, aren't you?" I still to this day love to hold that over the head of the greatest girlfriend in the world.

That pain proved to be a stage II non-seminoma tumor engulfing my left testicle. The germ cell tumor contained several of the most aggressive types of testicular cancer cells, including choriocarcinoma, embryonal carcinoma, and yolk sac cells. According to the pathology report, the testicle and tumor was 99 grams, the size of a large egg, and from the time of the ultrasound to the surgery, it had doubled in size in those 6 days. This was clear evidence of how aggressive and serious this cancer can be. Luckily, I studied Health Education at Northern Illinois University and knew how important self-examination was. I was fortunate to catch this extremely early, and that was the foundation of my positive thinking.

Having a doctor tell you that you have cancer is one thing, but having him tell you that he is going to remove one of your testicles was truly the biggest loss of the day! I could deal with the cancer but to take one of my boys??? "SHIT"... I thought to myself, not me, I was only 21. Now I'm going to be like ESPN analyst John Kruk. Damn, now I'm like 3rd baseman Mike Lowell, the infamous Lance Armstrong or Darren Jackson, a broadcaster of the White Sox. CRAP... Now I have to think ahead of any situation that might open a window for someone else to make a joke. Which reminds me. Here a few things you must keep in mind when you are around me or another testicular cancer survivor.

- 1-If you are ever golfing with me and I slice a drive into the rough...Never ask, "Hey, you know where your ball went?"
- 2-When I hit my second shot on that first hole and lay my 8 iron on the green 10 feet from the hole... Never yell from across the fairway... "NICE BALL!"
- 3-When you are sitting at a poker table with me and I'm holding the Ace, King of Hearts and I flop a flush...Never say when the hand is complete... "You flopped the nuts."
- 4-Never when you coach a football game with me... Come into the halftime angry and tell your team to play balls out in the 2nd half...
- 5-When I am watching a baseball game with you and I ask the count...Don't be a smartass and reply two strikes and one ball...

Appendix F
Focus Group Protocol

1. What did you think of what you read?
2. What do you think was the purpose of the story?
3. What did you think of each character?
4. In what ways did the conversation feel real? imaginary?
5. What was the funniest part?
6. What was the least funny part?
7. Did the guys on in the story communicate in ways that you communicate with your male friends? In what ways?
8. What would you change about the story you read?

Appendix G
Argument Strength Measures

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
This statement is believable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This statement is convincing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This statement is important to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This statement helped me feel confident about how best to talk to my healthcare provider about the HPV vaccine.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This statement would help my friends talk to their healthcare providers about the HPV vaccine.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This statement puts thoughts in my mind about wanting to talk to my healthcare provider about the HPV vaccine.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This statement puts thoughts in my mind about NOT wanting to talk to my healthcare provider about the HPV vaccine.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall how much do you agree or disagree with the statement?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This statement is believable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This statement is convincing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This statement is important to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This statement helped me feel confident about how best to talk to my healthcare provider about the HPV vaccine.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This statement would help my friends talk to their healthcare providers about the HPV vaccine.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This statement puts thoughts in my mind about wanting to talk to my healthcare provider about the HPV vaccine.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This statement puts thoughts in my mind about NOT wanting to talk to my healthcare provider about the HPV vaccine.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall how much do you agree or disagree with the statement?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Very Weak	Weak	Neither Strong nor Weak	Strong	Very Strong
Is the reason to talk to your healthcare provider about the HPV vaccine strong or weak?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix H

Source Credibility Measures

	1	2	3	4	5	6	7	
Intelligent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unintelligent
Untrained	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Trained
Cares about people:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Doesn't care about people
Honest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Dishonest
Has people's interests at heart	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Doesn't have other people's best interest at heart
Untrustworthy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Trustworthy
Inexpert	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Expert
Self-centered	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Not self-centered
Concerned with people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Not concerned with people
Honorable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Dishonorable
Informed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Uninformed
Moral	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Immoral
Incompetent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Competent
Unethical	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Ethical
Insensitive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Sensitive
Bright	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Stupid
Phony	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Genuine
Not understanding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Understanding

Appendix I

Transportation Measures

	1 Not at All	2	3	4	5	6	7 Very Much
I could imagine myself in the story I was reading.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was mentally involved in the story I was reading.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I wondered what happened after the story ended.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The story affected me emotionally.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
While reading the story, I thought of the events occurring in the room I was in.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I was done reading, I stopped thinking about the story.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When reading the story, my mind wandered.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoyed the story very much.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would go back and read this story again in my private time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This was a story I could enjoy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The events in this story resemble events in the real world.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The story reflects conversations real men might have.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The friendships in the story resemble friendships among real people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Character's situation reminded me of situations in my own life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The events in the story reminded me of events that have happened to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix J

Identification Measures

	1 Not at All	2	3	4	5	6	7	8	9	10 Extremely
When reading the story, I felt like I wanted to be like character's name.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When reading the story, I felt like I was similar character's name.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When reading the story, I felt like I knew character's name.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When reading the story, I liked character's name.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix K

Perceived Realism Measures

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree Nor Disagree	Somewhat Agree	Agree	Strongly Agree
This story could possibly happen in real life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The events in this story portrayed possible real-life situations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The conversation in this story could actually happen in real life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Never in real life would this story happen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Real people would not do the things that happened in this story.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Not many people are likely to experience the events portrayed in this story.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This story portrayed events that happen to a lot of people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What happened to the people in this story is what happens to people in the real world.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
This story was based on facts.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This story showed something that really happened .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What occurred in this story actually happened .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
This story was coherent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This story was consistent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Parts of the story were contradicting each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This story made sense.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This story had a logical flow.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
The visual elements of this story were realistic.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The dialogue was realistic.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt that the overall story was realistic.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix L

Emotion Measures

	1 Not at All	2	3	4	5	6	7	8	9	10 Extremely
Angry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relieved	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Happy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Disgusted	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Afraid	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hopeful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Compassionate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This story made me laugh.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix M

Attitude Measures

Talking to your doctor about the HPV vaccine is:

	1	2	3	4	5	6	7	
Good	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Bad
Positive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Negative
Wise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Foolish
Beneficial	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Harmful

Getting the HPV vaccine is:

	1	2	3	4	5	6	7	
Good	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Bad
Positive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Negative
Wise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Foolish
Beneficial	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Harmful

Appendix N

Vaccine Receptiveness Measures

	Strongly Disagree	Disagree	Agree	Strongly Agree
I will ask my healthcare provider about the HPV vaccine.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am seriously thinking about talking to my healthcare provider about the HPV vaccine.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would get the HPV vaccine if my regular healthcare provider recommended it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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PUBLICATIONS

Parrish, A. J., Vos, S. C., & Cohen, E. L. (2015). Media effects and health. In N. G. Harrington (Ed.) *Health communication: Theory, method, and application*. New York: Routledge.
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Holmes, G. N., Harrington, N. G., & Parrish, A. J. (2010). Exploring the relationship between pediatrician self-disclosure and parent satisfaction. *Communication Research Reports, 27*(4), 365-369.

CONFERENCE PRESENTATIONS

Parrish A. J., Crosby R., Collins T., et al. (2014, June). *Internalized homonegativity and disclosure of same-sex sexual behavior to healthcare providers among young men who have sex with men*. Poster presented at the 2014 STD Prevention Conference, Atlanta, Georgia.
Vanderpool R. C., Parrish A. J., Collins, T. (2014, April). *Perceived practitioner barriers to colorectal cancer education and screening*. Poster presented at the Kentucky Conference on Health Communication, Lexington, Kentucky.
Parrish, A. J. (2011, April) *Enhancing agency and reducing risk in healthcare organizations: A positive deviance case study*. Paper presented at Southern States Communication Conference, Louisville, KY.
Zuercher, R., Parrish, A. J., & Petrun, E. L. (2012, May). *Anatomy of a gaffe: Examining print and blog coverage of Michelle Bachmann's HPV vaccine controversy*. Paper presented at Association for Education in Journalism and Mass Media Conference, Chicago, Illinois.
Helme, D. W., Cohen, E. L., & Parrish, A. J. (2011, February). *Health, masculinity, and tobacco use among college-aged men*. Presentation to the UK Center for Translational Science, Lexington, Kentucky.