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The Impact Of Positive Thinking, Optimism, Empathy, And Just World Beliefs On Social Perceptions Of Cancer

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THE IMPACT OF POSITIVE THINKING, OPTIMISM, EMPATHY, AND JUST WORLD BELIEFS ON SOCIAL PERCEPTIONS OF CANCER

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This thesis, submitted by Kelly M. Jones in partial fulfillment of the requirements for the Degree of Master of Arts from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done, and is hereby approved.

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Kelly M. Jones
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TABLE OF CONTENTS

LIST OF FIGURES

Figure Page

LIST OF TABLES

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To my mother and brother.

Your love and support have always been, and will always be, my greatest strength.
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you are always willing to share when I need it most.
I love you both.

ABSTRACT

When witnessing a difficult event, such as a health crisis, a common initial response is to ask why it happened. The answer to this question then influences the observers' reaction, in that their attitudes and beliefs influence how they respond to the person who suffered the health crisis. In this way, social perceptions of cancer can have a tremendous influence on a patient's illness experience and that influence can be either beneficial or unintentionally detrimental. Within the current study an attribution-based theoretical framework was applied and the social phenomena of positive thinking (PT) was considered, in an attempt to understand how people view and respond to others' cancer experiences. The role of individual differences in just world beliefs, dispositional optimism, and empathy was also explored. Undergraduate college students (N = 233) read a hypothetical blog of a cancer patient, who described one of three scenarios – a PT exposure/try PT scenario (in which the blogger learned about PT and endorsed it wholeheartedly), a PT exposure/did not try PT scenario (in which the blogger decided not to endorse PT), or a no PT/control scenario (in which there was no mention of PT). Participants then responded to measures assessing the blogger's effort, control, and responsibility for the cancer outcome, as well as how much they blamed the blogger for the outcome, and how willing they were to help the blogger. Participants' endorsement of PT, dispositional optimism, empathy, and just world beliefs were also assessed. A 2 Gender of Participant/Blogger (male, female) x 3 PT Exposure (control/no PT exposure,

PT Exposure/did not try, PT Exposure/Tried) MANCOVA (with the PT endorsement covariate) indicated that exposure to PT enhanced effort attributions, control perceptions, and perceptions of responsibility for the unsuccessful cancer outcome. Gender differences emerged among participants in which men attributed more effort, control and responsibility to the male blogger than women attributed to the female blogger, but women were more willing to help the blogger than men were. Finally, linear regression analyses indicated that individual differences in empathy impacted attributions of control, responsibility, blame, and willingness to help. Findings from the current study have implications for understanding how positive thinking affects social perceptions of cancer and the role that empathy plays in those perceptions.

CHAPTER I

INTRODUCTION

When difficult events occur, such as serious health conditions, one of the first reactions of people observing the event is to ask why it happened. The answer to this question influences the way in which observers perceive the health condition and the individual suffering from the health condition. In turn these perceptions affect the observer's behavior toward the person with the health condition. In particular, observers' perceptions about cancer and cancer patients can influence the observers' behavior towards the cancer patient. For example, medical professionals are much more likely to spend time with "positive" patients or patients they perceive as are "fighters" or "having spirit" (Doan & Gray, 1992). This "fighting spirit" is a characteristic of positive thinking that has become a social norm particularly expected of cancer patients (McGrath, Jordens, Montgomery, & Kerridge, 2006). Indeed, many patients report being told to "think positive" right after being diagnosed with cancer (Wilkes, O'Baugh, Luke, & George 2003).

Although it can provide comfort to some, the notion that patients can control their cancer trajectory by maintaining a positive attitude can imply that if a cancer patient does not embrace positive thinking wholeheartedly he or she is not trying hard enough or not fighting back (Cassileth, 1989). Using an attribution-based theoretical framework the current study examined the notion of positive thinking in an effort to understand how people perceive and react to another person's cancer experience. The

role of individual differences in observers' dispositional optimism, empathy, and just world beliefs was also assessed.

Attribution Theory

Negative events, such as failing a math test, getting fired, or being hit by a car, prompt individuals to engage in a causal search, seeking an explanation for the event. Individuals engage in this causal search process regarding both their own and other people's outcomes. Weiner's (1985) attribution theory states that there are three causal dimensions that determine what attributions or reasons individuals assign to others' outcomes. The first causal dimension is locus. If an outcome is perceived to be caused by factors within the individual, then the locus of causality is said to be internal. If an outcome is perceived to be caused by factors outside of the individual, then the locus of causality is external. For example, if a student failed a math test because of low math ability, the cause would reside within the student and the locus of causality is internal. However, if he failed because the teacher made the test unreasonably difficult the cause would reside outside of the student, and the locus of causality is external (Weiner, 1985).

According to attribution theory, the second causal dimension is the stability of the outcome (Weiner, 1985). If the situation is believed to be likely to re-occur under similar circumstances, it is considered stable; conversely, if the outcome is not certain to re-occur, it is considered unstable. For example, a baseball player hits a home run. If the home run is attributed to his consistently high batting average, the attribution is considered stable and the next time he is at bat, there is a good chance he will hit another home run. If the home run is attributed to luck, it may be considered unstable and the next time the player is at bat he is not expected to hit another home run.

The final casual dimension in Weiner's theory (1985) is the controllability of the factors that are perceived to determine the outcome. If the cause is perceived to be alterable, the causal factors are considered controllable. If the cause cannot be influenced or altered, those causal factors are deemed uncontrollable (Weiner, 1985). For example, if the cause of a car accident is attributed to the driver's recklessness, the cause of the accident is considered controllable. If the accident is attributed to the driver having a seizure, the cause of the accident is considered uncontrollable.

Perceived causality can vary not only from person to person but within the same person from context to context (Weiner, 1985). For example, a student may receive identical scores on one math test and one history test. If the student is particularly skilled in math, but not in history, that student is likely to attribute his or her math score to innate ability and his or her history score to luck. Even when the same cause is ascribed to different contexts it may impart different meanings. For example, when a person puts a great deal of effort into a task and succeeds, that cause is considered more stable than if the person put the same effort into a task and failed (Weiner, 1985). Effort is considered a stable cause, thus it is assumed that in similar situations, if the effort is replicated, similar results will be achieved.

Related to the causal attribution of effort/lack of effort are perceptions of control, judgments of responsibility, and assignment of blame. Typically, effort attributions are viewed as internal and controllable, thus greater effort attributions lead to greater perceptions of control, which in turn lead to greater perceived responsibility. The more responsible and in control individuals are perceived to be for their own circumstances, the more they will be blamed if the outcome is negative (Weiner, 1980). For example, in

making parole decisions, both parole board members and college students in simulated parole board situations take into account what they consider “deserved punishment”. If the crime(s) committed were due to internal or controllable factors, the perpetrators are seen as more deserving of punishment than if the same crime(s) were committed due to unintentional or uncontrollable factors (Weiner, 1985).

The cognitions that arise from the attributions ascribed to the outcome, specifically those related to locus and controllability, determine willingness to help (Weiner, 1980). For negative outcomes perceived as internal and controllable, observers generally respond with disgust or anger towards the person, and are unlikely to help. Conversely, when a negative outcome is perceived by an observer as external and uncontrollable, the observer will likely feel pity or sympathy and be far more likely to help the person (Weiner, 1980). For example, if a person who smells strongly of alcohol stumbles and falls, passersby are less likely to offer assistance than if the person slipped because the street was icy, which evokes sympathy from others around them (Weiner, 1980).

Attributions and Health Issues

Although all events may elicit a causal search, negative outcomes or events seem to be especially provocative (Weiner, Perry, & Magnusson, 1988). Health problems, such as diseases, alcoholism, or mental illnesses, provoke not only the individual to ask "Why me?", but others around them to ask "Why did this occur?" The answer to these questions, the perceived cause of the health issue, determines how people react to the individual suffering from the health problem (Weiner et al., 1988). If the cause is

perceived to be within the individual's control, attribution theory posits that observers will respond with anger and will be more likely to withhold help (Weiner et al., 1988).

People with mental-behavioral based health issues such as AIDS, drug abuse, and obesity, which are considered to be onset-controllable are perceived as having more responsibility for their condition. Consequently, these individuals evoke less pity and receive less help from others (Weiner et al., 1988). Conversely people with health issues such as Alzheimer's, cancer, and paraplegia, are perceived as being less responsible for their condition and receive more help (Weiner et al., 1988). A key attributional dimension of the health issue that impacts whether or not it provokes helping behaviors in others is controllability, both for the onset of the condition and for recovery (Weiner et al., 1988).

The current study used attribution theory to examine social perceptions of cancer, specifically the effort, control, responsibility, and blame attributions endorsed by observers of another person's cancer experience. The observers' willingness to help was also examined. Before describing the specifics of the current study, the social ideology of positive thinking is discussed in terms of its potential impact on social perceptions of cancer.

Positive Thinking

Thinking positively has become a social phenomenon. Its roots are in the humanistic psychology movement of the 1950s (Maslow, 1954), but the phenomenon grew in the 1990s when Seligman and Csikszentmihályi published a call to psychologists to refocus research on topics beyond the negative, "We believe that a psychology of positive human functioning will arise that achieves a scientific understanding and effective interventions to build thriving in individuals, families, and communities...As a

side effect of studying positive human traits, science will learn how to buffer against and better prevent mental as well as some physical illnesses, " (Seligman & Csikszentmihályi, 2000, pp. 13).

Positive thinking (PT) is based on the belief that the mind can exert a powerful influence on the body. In the United States, the idea that the mind has power over the body has struck a particular chord because it fits with several commonly-held cultural mores: the belief in the power of the individual and personal responsibility, and the need to understand and control outcomes and events in our lives. Patients are encouraged to play an active role in their recovery; to take on an optimistic, active, almost aggressive approach to the so-called “war on cancer” (Cassileth, 1989). PT techniques fit well with this mindset. In fact, PT has become a socially expected characteristic of cancer patients (McGrath, Jordens et al., 2006), with many cancer patients reporting being told to “think positive” right after their diagnosis (Wilkes et al., 2003).

“Positive thinking [is] the conscious and deliberate effort to manage one’s own thoughts, emotions, speech, non-verbal behavior, and beliefs in such a way that one entertains only the possibility of good outcomes and not the possibility of bad outcomes, for any difficult or challenging set of circumstances,” (McGrath, Jordens et al., 2006, pp. 666). PT comprises maintaining a positive attitude, focusing on positive thoughts, visualization techniques, and negative thought suppression. Having a positive attitude consists of maintaining an optimistic state of mind (Gray & Doan, 1990), whereas positive thinking consists of active cognitive strategies for maintaining positivity (O’Baugh, Wilkes, Luke, & George, 2003). One of the most common techniques is visualization, in which patients are encouraged to vividly imagine their illness and their

body's response to their illness (De Raeve, 1997). PT also includes actively seeking to control or suppress negative thoughts (O'Baugh et al., 2003).

Positive Thinking and Health

PT has been associated with several health benefits, including the use of more effective coping strategies (Gillham, Shatte, Reivich, & Seligman, 2002) and greater immune response (Sergerstrom, Taylor, Kemeny, & Fahey, 1998). Positive emotions can negate the effect of physiological arousal that accompanies the experience of negative emotions, particularly stress (Fredrickson, Mancuso, Branigan, & Tugade, 2000) and experiencing positive emotions has been associated with lowered risk of developing illnesses (Cohen, Doyle, Turner, Alper, & Skoner, 2003). Positive beliefs and expectations about the future promoted adherence to treatment regimens and also greater preventative health behaviors (Aspinwall & Tedeschi, 2010). Perception of self-mastery over health, the perceived ability to influence health outcomes, is associated with overall physical well-being (Marshall, 1991). There are many anecdotal examples of patients who have experienced what might be termed a "miraculous" recovery; that is their recovery was either very fast or completely unexpected, which is sometimes attributed by the patient or by their doctors or families to "positive thinking" (De Raeve, 1997).

Taylor and Brown (1988) suggested that positive illusions about life may actually be more beneficial to mental health than strict realism. Of particular importance to the topic of PT is illusion of control. Taylor and Brown pointed out that several theoretical orientations, including social and developmental psychology, learning theory, and psychoanalytic theory all maintain that a sense of personal control is an integral part of self-esteem and self-concept. However, in general, people's belief about the amount of

control that they have over their lives is exaggerated. That is, in situations which are actually governed by chance many people assume that they have control, and therefore act as if they really do have control over the outcome (Langer & Roth, 1975).

While there is evidence that having a positive attitude can be helpful as a coping strategy for individuals, having a positive outlook can also benefit patients in that it makes them more pleasant to be around. This may translate into receiving more attention from both health care professionals and greater support from their family and friends. Such positive patients may even inspire caregivers to pursue a greater range of treatment options (Doan & Gray, 1992). For family and friends, embracing PT may serve as a coping strategy, allowing them to maintain focus on the positive.

The PT phenomenon has a great deal of support among cancer patients themselves. For example, Stewart et al. (2001) found that 60% of breast cancer survivors believed that it was their positive attitude that prevented cancer recurrence. Achterberg, Matthews-Simonton, and Simonton (1977) examined cancer patients who had received terminal or widely metastatic diagnoses. They found that one group, which they termed "exceptional cancer patients", significantly outlived the predicted life expectancy. These patients were more flexible, non-conforming, had more psychological insight, ego strength, and self-sufficiency, and refused to give up or decompensate in the face of stress (Achterberg et al., 1977).

Doan and Gray (1992) coined the term "heroic cancer patient" to describe the belief that cancer patients can control whether or not they recover, based on Taylor and Brown's (1988) work. Cassileth (1989) referred to it as the "Rambo approach to the enemy", the belief that an individual can defeat an insurmountable enemy even if that

enemy is within his own body. This “heroic cancer patient” model makes two major assumptions about cancer. The first is that cancer is caused, at least partially, by psychological and personal factors such as high stress, personality, and even lack of meaning or love in life. The second assumption is that the progression of cancer can be influenced by these same factors, and therefore can be potentially be cured by embracing positive thinking (Doan & Gray, 1992).

The evidence suggesting that PT has a true impact on recovery from cancer is conflicting. Petticrew, Bell, and Hunter (2002) analyzed the results of 13 studies examining the link between coping styles and survival of cancer. Of the studies that reported beneficial findings, that PT played an important role in recovery and survival, most had significantly smaller sample sizes than the studies which reported non-significant findings. Additionally, many of the articles contained methodological flaws, including failure to adjust for potentially confounding variables (Petticrew et al., 2002).

Regardless of whether it has actual physical benefits, PT also has potentially harmful psychological effects (Aspinwall & Tedeschi, 2010; McGrath, Jordens et al., 2006). The belief that patients can control their cancer trajectory by thinking positively implies that if they do not embrace PT wholeheartedly, patients are not trying hard enough to “beat” their cancer. This puts an immense burden on the patient to constantly maintain a positive outlook, even when they are struggling (Cassileth, 1989). PT places responsibility for the outcome of the disease on the patient, which can lead to a sense of failure if there is an unsuccessful outcome (De Raeve, 1997). Patients may experience a sense of loss or guilt in the case of relapse or progression of the disease, along with suffering the expressions of disapproval from friends, family, or doctors for not fighting

hard enough. Patients who do not to embrace PT or those who do but do not achieve the results expected of them may be marginalized (McGrath, Montgomery, White, & Kerridge, 2006). Wilkes et al. (2003) found that patients were often angered or hurt by people telling them to be positive about their illness. These patients wanted others around them to be positive, but not to be forced or pressured themselves to constantly remain positive. Indeed, the relentless pressure to remain positive may lead some patients to believe that they have to "protect" others around them by only expressing positive ideas because those around them cannot bear to hear anything negative (De Raeve, 1997).

Additionally, expressions of disappointment from family or friends if the patient does express negative emotions can damage relationships between them (McGrath, Jordens et al., 2006). PT stresses never expressing negative thoughts or emotions, including thinking or talking about the potential of dying. Focusing on the positive allows family and friends to ignore the very real possibility of a worst-case scenario (McGrath, Montgomery et al., 2006). This can translate into avoidance, preventing patients and their families from making necessary decisions about finances, funeral arrangements, even just saying goodbye or finding closure (McGrath, Jordens et al., 2006).

The pressure of trying to fully embrace PT can create an apprehension of experiencing negative thoughts, fear, even anger, all of which are natural responses for cancer patients. Well-intentioned efforts by family and friends, even physicians, encouraging patients to constantly maintain the heroic response, especially to the point of intolerance of expressions of doubt or fear, can place additional burden on patients, and leave them feeling alienated and alone. Additionally, by stressing the responsibility the

patient has for their own recovery, failing to survive is implied to be a personal weakness (Doan & Gray, 1992).

Attribution Theory, Positive Thinking, & Cancer Perceptions

In prior research applying attribution theory to the perception of cancer patients, Ruthig, Holfeld, and Hanson (2012) had college students respond to a fictional blog of a cancer patient. This hypothetical cancer patient described learning about PT and then either endorsed it or allowed him/herself to experience the full range of emotions (positive and negative). In a third, control condition PT was not mentioned in the blog. Ruthig et al. (2012) found that when participants were exposed to the idea of PT within the cancer blog, effort attributions became more salient. That is, when the cancer outcome was negative (i.e. treatment was unsuccessful) the outcome was attributed more to lack of effort if the blogger chose not to try PT than if he or she tried it or PT was not mentioned. In line with the “heroic cancer patient” phenomenon, these results demonstrate the view that "… allowing oneself to experience negative thoughts along with positive ones was socially perceived as 'not trying hard enough'," (Ruthig et al., 2012, p. 15).

Generally, in situations that are considered skill tasks (in which the actor can influence the outcome) failure is ascribed to effort (Weiner, 1985). In the case of chance tasks (in which the actor cannot influence the outcome), failure is ascribed to unstable factors, such as luck. Cancer is a "chance task", but PT may convince people that it is in fact a "skill task", that cancer patients can influence the outcome. The essence of PT is that, through deliberate effort, people have "beaten cancer". The prevalence of success stories convinces people that the cause of beating cancer is stable (and therefore

repeatable by others in similar situations as according to attribution theory (Weiner, 1985), effort + success = stability). When the cancer patient does not endorse PT, that action is perceived as the absence of effort (Ruthig et al., 2010); and observers subsequently assign greater levels of controllability and responsibility, and presumably blame, to the patient.

Aside from the notion of positive thinking, there are additional factors that may influence observers' responses to health situations. One of these is gender of the observer, which will be discussed below. Also of particular interest to this study are the potential individual difference factors within the observer. Belief in a just world, dispositional optimism, and empathy are three such individual difference factors that may influence observers' attributions of control, responsibility, and blame within the context of social perceptions of cancer.

Gender Differences in Perceptions of Illness

Compared to men, women are generally perceived as being less responsible for their illness (including AIDS and cancer), and are offered more support during their illness (Borchert & Rickabaugh, 1995; Schulte, 2002. Moreover women are more likely to express pity and a willingness to help (regardless of the patient's gender) than are men (Mosher & Danoff-Burg, 2008).

Regarding perceptions of cancer, Ruthig et al. (2012) found that when participants were exposed to the idea of PT within the cancer blog, effort attributions became more salient, and observers subsequently assigned higher levels of controllability and responsibility to the patient. However, these results differed based on the observer's gender. Men perceived the male blogger as having more control and responsibility for the

cancer outcome, regardless of their PT exposure. Women perceived the female blogger as being more responsible for failing to recover only if she was exposed to PT and chose not to endorse it (Ruthig et al, 2012). Given the complicated relationship between same-gender versus cross-gender effects for the observer, in the current study participants were only be exposed to the same gender blogger, and gender was a main variable in analysis.

Just World Beliefs

The belief that good people are rewarded and evil people are punished exists in many cultures (Furnham, 1991). Because justice is an ideal for which people often strive, it is comforting to believe that life is structured to be fair. This perspective has come to be known as "belief in a just world". The "blame the victim" phenomenon arises from this set of beliefs; in a just world only evil people are punished, therefore if a person experiences misfortune then that person must have done something to deserve it.

Rubin and Peplau (1975) found a strong correlation between just world beliefs and endorsement of internal locus of control. The more participants believed that the world is just, the more likely they were to believe that the control of situations was within the actor. Lerner (1965) found that when two students worked equally on task and only one was selected by chance to be given a cash prize, observers assigned the winner higher ratings on effort than the other student. In other words, observers believed that because the winner received the prize, he must have deserved it, and therefore the winner must have worked harder than the other student (Lerner, 1965). When encountering victims of misfortune, people who believe the world is just often reject or derogate the victim (Rubin & Peplau, 1975). They are more likely to espouse the belief that the victim was in

some way responsible for their own victimization. They assign greater levels of blame to the victim as well (Lerner & Miller, 1978).

However, people differ in their levels of endorsement of just world beliefs. Some people do not perceive the world as a just place, and attribute misfortunes to fate or social contexts, rather than to the actions of the victim (Rubin & Peplau, 1975). In fact when people are prompted to be empathetic, for example if they are reminded “to imagine themselves in the other person’s place”, they are more likely to respond with compassion rather than rejection or derogation if the other person experiences misfortune (Aderman, Brehm, & Katz, 1974). The role of individual differences in level of just world belief endorsement in observers’ perceptions of cancer was examined in the current study, as well as individual differences in observers’ dispositional optimism, which is subsequently described.

Dispositional Optimism

Another individual difference factor that may influence social perceptions of cancer is dispositional optimism. In general optimists tend to hold positive expectations for the future, whereas pessimists tend to have negative expectations about the future (Scheier, Carver, & Bridges, 1994). Positive thinking holds a similar view to optimism, in that one of its main precepts is that positive expectations for the future will lead to positive outcomes. Schou, Ekeberg, and Ruland (2005) found that optimists tended to react to cancer with a "fighting spirit" response, similar to that endorsed by PT, whereas pessimists tended to react with a "hopeless/helpless" response. This suggests that dispositional optimists may more readily endorse PT, as it dovetails with beliefs they already hold.

Individuals who score higher in dispositional optimism also tend to score higher in measures of perceived control over stressful situations (Fontaine, Manstead, & Wagner, 1993). This can translate into optimistic bias, the belief that one is less likely than others to experience negative events (Hoorens & Smits, 2001). In fact, the more an individual believes he or she has control over the occurrence of a negative event, the less likely he or she believes there is a chance of experiencing that event (Klein & Helweg-Larson, 2002). However, evidence for how individuals perceive another person's control over their experience of negative events is inconsistent. Individuals often fail to accurately account for the other person's level of control (Hoorens & Smits, 2001). The role of individual differences in observers' dispositional optimism was examined in the current study, along with individual differences in observers' empathy, which is subsequently described.

Empathy

A third possible individual difference factor that may influence social perception of cancer is empathy. Empathy has traditionally been conceived of as two distinct, yet interacting components: a cognitive process and an emotional process (Davis, 1980). The cognitive process, the perception of the situation as deserving of concern, serves as the antecedent of the emotions experienced, such as sympathy or pity. These experienced emotions then mediate both empathic perspective taking and the assigning of causal attributions (Betancourt, 1990).

Adopting another person's perspective when he or she is in need, greatly increases the likelihood that an observer will recognize the other person's need and act to reduce it (Coke, Batson, & McDavis, 1978). Perspective taking mediates helping

behavior by increasing the feelings of empathic emotion; the greater the empathic emotion, the more likely the observer is to engage in helping behavior (Coke et al., 1978). There are two distinct explanations for why experiencing empathic emotion may provide the motivation for helping. One perspective is that experiencing empathic emotion is aversive, and by engaging in helping behaviors, one can reduce this emotional arousal (Coke et al., 1978). The second perspective is that experiencing empathic emotion creates an other-centered, altruistic desire to reduce the distress of the person in need (Coke et al., 1978). Archer, Diaz-Loving, Gollwitzer, Davis, and Foushee (1981) found that there was an interactive, predictive relationship between empathic concern and personal distress (both components of empathy) and volunteering. Those who experienced the most concern for the welfare of others experienced greater personal distress and this in turn predicted greater helping behavior. Even in cases where helping may jeopardize one's own welfare, those who experienced greater empathy were more willing to assist another.

When given the chance to help themselves at a cost to the actor or helping the actor at a cost to themselves, those who reacted most empathically behaved the most altruistically (Krebs, 1975). Based on Batson, Duncan, Ackerman, Buckley and Birch's (1981) work, Davis (1983b) found that emotional reactions to appeals for help were mediated by individual differences in empathy. Those individuals who were higher in dispositional empathy experienced significantly higher levels of emotional empathic concern. Higher empathic concern in turn predicted higher levels of helping behaviors.

Positive psychology views empathy as the antidote to judgmentalism (Haidt, 2006). Individuals make a particular causal attribution when they are the actor. But when

observing the behavior of others in the same situation, those individuals frequently make a different causal explanation. When acting as the observer, individuals often lack complete information about the actor's behavior and history, and are more likely to make dispositional attributions to the actor's behavior. When individuals experience empathy, they take the perspective of the other, and the attributions they assign for the other's behavior become more situational and less dispositional. That is, they view the other's behavior more like they view their own. They take into account more information, and give the other 'the benefit of the doubt', just as they would for themselves (Regan & Totten, 1975). Betancourt (1990) noted that there are similarities between the cognitions that mediate both causal attributions and empathic perspective taking. Observers who take the perspective of the actor give lower control attributions than those who are more objective. They also react with greater empathic emotion (Betacourt, 1990). As detailed in the following section, the current study examined the role of empathy, as well as belief in a just world and dispositional optimism, in the social perceptions of cancer.

The Current Study

The current study examined the role of positive thinking in social perceptions of cancer. Employing attribution theory (Weiner, 1985), the first main objective was to determine whether exposure to positive thinking (PT) influences effort, control, responsibility, and blame attributions, as well as willingness to help. Although past research has investigated observers' perceptions of a cancer patient's effort, control, and responsibility (Ruthig et al., 2012), observer's assignment of blame and willingness to help within this context has not been explored. This objective was addressed by using an experimental design that manipulates PT exposure within the context of a hypothetical

blog of a cancer patient as in prior research (Ruthig et al., 2012). The blogger described one of three scenarios that reflected varying levels of PT exposure: a "control/no PT" scenario (in which PT was not mentioned), a "PT exposure/did not try" scenario (in which the blogger learned about PT but did not to endorse it), or a "PT exposure/tried" scenario (in which the blogger learned about PT and fully endorsed it). All three scenarios ended with the blogger being informed by a physician that they still have cancer and further treatment was unlikely to be effective. After reading one of the three randomly assigned scenarios, participants indicated the extent to which the blogger's cancer outcome was due to the blogger's own (lack of) effort, control, and responsibility, as well as the extent to which they blamed the blogger for the cancer outcome, and how willing they were to help the blogger.

Hypothesis 1a: Regardless of PT exposure, based on attribution theory (Weiner 1985), higher effort ascriptions will be associated with higher control ascriptions, which in turn will be associated with higher responsibility ascriptions, which will be associated with higher blame ascriptions, and lower willingness to help.

Hypothesis 1b: Compared to participants in the PT exposure/try and no PT/control conditions, participants in the PT exposure/did not try condition will have higher ascriptions of the blogger's (lack of) effort, control, responsibility, and blame, as well as lower willingness to help the blogger.

The second main objective was to explore gender differences. Past research indicates that gender difference exist in terms of social perceptions of cancer. Specifically, Ruthig et al. (2012) found that men saw the male blogger as having more control and responsibility over his cancer outcome, regardless of whether or not the

blogger was exposed to the idea of PT. Conversely, women perceived the female blogger as more responsible for still having cancer if she chose not to try PT than if she tried it or PT was not mentioned. As such, in the current study participants were only be exposed to the same gender blogger, and gender was the other main variable in analysis. The design was a Gender of Participant/Blogger (male, female) x PT exposure (no PT/control, PT exposure/did not try, PT exposure/tried) 2 x 3 between subjects design.

Hypothesis 2a: Based on earlier findings (Ruthig et al., 2012), it was expected that compared to women's perceptions of the female blogger, men will perceive the male blogger has having greater control and responsibility, regardless of PT exposure.

Hypothesis 2b: Based on prior research (Ruthig et al., 2012), women were expected to perceive the female blogger has having more responsibility in the PT/did not try condition, compared to control/no PT condition.

The third objective of the current study was to examine the potential influence of individual differences in dispositional optimism, empathy, and just world beliefs on social perceptions of cancer. Specifically, it was determined whether these individual difference factors predict social attributions of effort, control, responsibility, and blame, as well as willingness to help.

Hypothesis 3a: Compared to men, women will report greater levels of empathy (Davis, 1983a).

Hypothesis 3b: Higher levels of dispositional optimism will predict higher levels of control attributions (Fontaine et al, 1993).

Hypothesis 3c: Higher levels of empathy will predict lower levels of blame, and higher levels of willingness to help (Betacourt, 1990; Aderman et al., 1974).

Hypothesis 3d: Higher levels of just world beliefs will predict higher levels of blame, and lower levels willingness to help (Rubin & Peplau, 1975).

Although no hypotheses were formulated, it was also determined whether the impact of dispositional optimism, empathy, and just world beliefs on social perceptions of cancer varied as a function of PT exposure.

CHAPTER II

METHOD

Participants & Procedure

The study included 233 undergraduate college students (150 women and 83 men). This sample size exceeded the proposed sample of N = 210 which was based on a power analysis for detecting a moderate effect size in which between-subject factors are examined while controlling for potential confounding variables in a multivariate analysis of covariance (MANCOVA). G*Power 3.1 (Buchner, Erdfelder, Faul, & Lang, 2009) was used to conduct the power analysis in which alpha was set at .05, power was set at .80. The participants ranged in age from 17 to 52 years old, with the average age at 19.99 years.

Participants were recruited to partake in an online study on social perceptions of cancer through the psychology department's SONA system. After clicking on the link within SONA participants were taken to an external webpage within the Qualtrics research suite where they were presented with an electronic consent form.

Consenting participants were presented with a hypothetical online blog to read which described the author's (a hypothetical college student) experience with cancer. Participants were randomly presented with one of three cancer scenarios to read. Each participant was assigned a blog written by a same-gender author (i.e. Alexander or Alexandra). After reading the blog, participants responded to questions about the blog. The measures of empathy, dispositional optimism, and just world beliefs were

counterbalanced, so half of the participants completed them before reading the blog, and the other half completed them after reading the blog. Participants were then debriefed and given a half credit to apply to the eligible psychology course of their choosing.

Hypothetical Cancer Scenario

As in prior research (Ruthig et al., 2012), participants read one of three randomly assigned hypothetical blogs about a college student with cancer: a "control/no PT" scenario, a "PT exposure/did not try" scenario (in which the blogger learned about PT but decided not to endorse it), and a "PT exposure/tried" scenario (in which the blogger learned about PT and decided to fully endorse it). In each scenario, the cancer outcome was unsuccessful (the blogger was told by the doctor that the treatment was unsuccessful, the cancer remained and was unlikely to be cured by any further medical treatment.

All three scenarios began with the same statement: "*My name is Alexander (Alexandra) and I'm a college student. About three months ago, I was diagnosed with cancer. After my diagnosis, I underwent several weeks of chemotherapy treatment in an attempt to cure my cancer. During this time, I followed all of the doctor's advice by maintaining a healthy diet, getting plenty of rest, and attending all of my treatment appointments.*"

The scenarios then differed based on condition:

Control/No PT Scenario: *"…During this time, I experienced both positive and negative thoughts and emotions and openly discussed my fears about having cancer."*

PT Exposure/Did Not Try Scenario: *"…I also checked out a website called "The Power of Positive Thinking". The website included people's personal stories about experiencing*

positive events (some people called them miracles) because they had attracted those events to them. Here are a few stories that really caught my attention:

- *After being fired from her job, Wilma claims she landed her dream job.*
- *Sally said that she is now healthy after suffering from "incurable" cancer.*
- *Bill talked about marrying the love of his life after several failed relationships.*
- *Peter told of how he had fully recovered from a life-threatening illness.*

The website was full of other personal stories of similar miracles. It struck me that each person talked about the importance of:

- forbidding negative thoughts, feelings, or fears from entering your mind or conversation with other people

- imagining your body healing itself and actually visualizing it healing

- maintaining a positive, fighting "never give up" attitude

Besides following my doctor's advice for diet, rest, and medical appointments, I thought about the website's message but rather than trying to maintain a positive attitude, I decided to let myself experience both positive and negative thoughts and emotions and to openly discuss my fears about having cancer."

PT Exposure/Tried Scenario: identical to the preceding PT Exposure scenario but with a different final paragraph: *"…I thought about the website's message. I really tried visualizing my body healing itself. I also tried keeping an "I'll beat this attitude", fighting any negative thoughts and fears, and focusing only on positive thinking. Even when it got very difficult, I fought any negative thoughts or fears that came about and only let myself think positively."*

The concluding paragraph of all three scenarios included a description of an unsuccessful outcome: *"About a month after finishing my chemotherapy treatment, I visited the doctor for a follow-up appointment. During the visit, the doctor told me that the treatment was unsuccessful - I still have cancer and further medical treatment is unlikely to result in me being cured of the cancer,"* (Ruthig et al., 2012).

Dependent Measures

Perceived control. To assess the participants' perceptions of the level of control the hypothetical student had over his/her cancer outcome, participants were asked: "How much control did/does Alexander (Alexandra) have over still having cancer?" The response range was 1 (*no control*) to 7 (*total control*) for both conditions (Ruthig, et al., 2012). Participants were asked, "How much personal influence did/does Alexander (Alexandra) have over still having cancer?" The response range was 1 (*no influence*) to 7 (*total influence*) (Ruthig, et al., 2012). Participants were also asked, "To what extent did Alexander (Alexandra) personally determine his/her cancer outcome?" The response range was 1 (*not at all*) to 7 (*totally*). The items assessing this variable were added together to create a single item for the variable, based on inter-item reliability ($\alpha = .79$).

Responsibility. To measure the extent to which participants held the hypothetical student responsible for his/her cancer outcome, participants were asked: "How responsible is Alexander (Alexandra) for still having cancer?" The response range was 1 (*not at all responsible*) to 7 (*totally responsible*) (Ruthig, et al., 2012).

Effort attributions. To assess the extent to which the unsuccessful cancer outcome was attributed to the hypothetical student's effort, participants were asked "Could Alexander's (Alexandra's) body have responded better if Alexander (Alexandra) had

tried harder to fight the cancer?" Responses ranged from 1 (*definitely not*) to 7 (*definitely yes*) (Ruthig, et al., 2012).

Blame. To assess the extent to which participants blamed the hypothetical student for the unsuccessful outcome, three items were developed. The first question was, "How much blame should Alexander (Alexandra) have for developing cancer?" Responses ranged from 1 (*no blame*) to 7 (*complete blame*). The second question was, "How much blame should Alexander (Alexandra) have for still having cancer?", with the same response options as the prior question. The third question was, "To what extent is it Alexander's (Alexandra's) fault for still having cancer?" Responses for this item ranged from 1 (*not at all*) to 7 (*entirely*). The three items assessing this variable were added together to create a total blame score ($\alpha = .92$).

Willingness to help. To assess participants' willingness to help the hypothetical student, three items were developed that asked participants: "If given the opportunity, how likely would you be to assist this person in some way?" Responses ranged from 1 (*not at all*) to 7 (*very likely*). Participants were also asked: "If given the opportunity, how likely would you be to help this person in some way" with the same response options as the prior question. To assess the participants' belief that they were capable of helping the hypothetical student, participants were asked, "Do you think you could help this person in some way if you wanted to?" Responses ranged from 1 (*not at all*) to 7 (*definitely*). The items assessing this variable were added together to create a total willingness to help score ($\alpha = .84$).

Dispositional optimism. To assess participants' dispositional optimism, the Life Orientation Test, Revised (LOT-R, Scheier et al., 1994) was administered. The LOT-R is

a six question self-report measure that participants respond to on a five point Likert scale. Half of the questions are positively worded; for example, “I’m always optimistic about my future.” Half of the questions are negatively worded, such as “I rarely count on good things happening to me.” These items are reverse scored. The scores are then summed, with scores ranging from 0 to 24. Higher scores indicate higher optimism. Scores tend to be stable across time, and the reported Cronbach’s alpha is .78 (Scheier et al., 1994). Scheier and Carver use an overall score for their primary analysis (Carver et al.., 1993, Scheier & Carver, 1985).

Empathy. To assess participant's level of empathy, the Interpersonal Reactivity Index (IRI, Davis, 1983a) was administered. The IRI is a 28 question self-report measure, consisting of four 7-item subscales, which participants respond to on a five point Likert scale. Only two of the subscales, the Perspective Taking Scale and the Empathic Concern scale were used, creating a 14 question measure. The Perspective Taking Scale (PTS) measures the tendency of participants to take the point of view of someone else in everyday life. A sample question from this scale is, "Before criticizing somebody, I try to imagine how I would feel if I were in their place." The Empathic Concern Scale (ECS) measures the tendency of participants to experience warmth, compassion, and concern for others. A sample question from this scale is, "When I see someone being taken advantage of, I feel kind of protective of them." Each subscale is summed separately, and higher scores on individual subscales indicate greater engagement of that component of empathy. For this study, the scores on the subscales were combined to create a single measure of empathy, with higher scores indicating higher empathy. Women tend to score

higher than men and the Cronbach's alphas range from .71 to .77 for the subscales (Davis, 1983a).

Just world beliefs. To assess participant's belief in a just world, the Just World Scale (JWS, Rubin & Peplau, 1975), was administered. The JWS is a 20 question self-report scale, consisting of statements of belief which participants indicate agreement with on a 6 point Likert scale. Eleven of the items state "just" beliefs, such as, "In almost any business or profession, people who do their job well rise to the top." Nine of the items state "unjust" beliefs, for example, "Many people suffer though absolutely no fault of their own." The "unjust" items are reverse scored. Higher scores indicate greater belief in a just world. There are no clear sex differences, though scores tend to decline as participants increase in age (Rubin & Peplau, 1975) and the Cronbach's alpha is .79 (Rubin & Peplau, 1973).

Potential Covariates

Because individual differences in personal risk of developing cancer and personal experience with someone who has cancer could play a role in participants' perceptions of PT and judgments of controllability/responsibility, participants' own perceived risk of developing cancer, perceived risk for a similar other, and knowing some who currently has cancer were included as covariates. Specifically, participants were asked: "Using the following scale: (no chance) 0% ----------100% (100% chance) what do you think the likelihood is that you will develop cancer at some point in the future?" Participants were asked: "Using the following scale: (no chance) 0% ----------100% (100% chance) what do you think the likelihood is that a college student of the same gender and age as you

will develop cancer at some point in the future?". Participants were also asked, "Does anyone you know currently have cancer?"

It is also possible that the degree to which participants endorse the idea of PT as a way to cope with cancer would influence their perceptions of another's cancer experience, as such PT endorsement was assessed as a potential covariate. To measure endorsement of PT, participants were asked to rate their agreement with four statements from the PT Endorsement Scale (Bruckbauer & Ward, 1993). Responses ranged from 1 (*Strongly disagree*) to 7 (*Strongly agree*). Statement 1: "Positive thinking/having a positive mental attitude can help a person *recover from* cancer." Statement 2: "Positive thinking/having a positive mental attitude can help *prevent* cancer." Statement 3: "Positive thinking/having a positive mental attitude can help *prevent the reoccurrence of* cancer." Statement 4: "Cancer patients should be encouraged to engage in positive thinking and have a positive mental attitude."

To assess overall endorsement of PT, participants were asked, “To what extent do you use PT in your own life?” Responses ranged from 1 (*not at all*) to 7 (*all the time*). Participants were asked, “Would you encourage someone you cared about to use PT in a situation like Alexander (Alexandra’s)?” Responses ranged from 1 (*not at all*) to 7 (*very likely*). Participants were also asked, “If it were you, would you use PT in Alexander’s (Alexandra’s) place?” Responses ranged from 1 (*not at all*) to 7 (*very likely*). Participants responses to these 3 items were added to the original, published 4-item scale to create 7-item scale, called Positive Thinking Endorsement, based on inter-item reliability (.81) and factor loadings of .517-.788, indicating a single factor. Finally, though not included

in the covariate measure of PT endorsement, participants were also asked the open-ended question, "Why do you believe PT works?"

Demographics

Participants were asked their gender and age, and whether they themselves have ever had cancer. The data from these participants indicating a prior personal experience with cancer was excluded from all subsequent data analysis. Participants were also asked if they had taken part in the previous Ruthig, et al. study. The data from these participants was also excluded.

CHAPTER III

RESULTS

Preliminary Analysis:

Data from five participants who indicated that they had personally had cancer were excluded from all subsequent analyses. Additionally, data from seven participants who indicated that they had participated in Ruthig et al.'s (2012) study were also excluded, leaving a total of 233 participants on which all subsequent analyses were based. See Table 1 for a summary of descriptive statistics for all study variables.

Bivariate correlations among effort attributions, control perceptions, judgments of responsibility, blame, and willingness to help were computed in order to test Hypothesis 1a, that regardless of PT exposure, effort ascriptions would be associated with higher control perceptions, which would be associated with greater responsibility ascriptions, which would be associated with more blame and lower willingness to help the blogger. Table 2 presents the bivariate correlations among all study variables.

As expected, higher effort ascriptions were associated with significantly stronger control perceptions; $r = .55$, $p = .01$; more responsibility; $r = .46$, $p = .01$; and more blame; $r = .56$, $p = .01$. Higher control perceptions were associated with more responsibility assigned; $r = .53$, $p = .01$; and more blame; $r = .41$, $p = .01$. Greater responsibility was significantly correlated with more blame; $r = .63$, $p = .01$, which was associated with less willingness to help; $r = -.23$, $p = .01$. Thus, Hypothesis 1a was fully

Table 1. Descriptive Statistics

Variable	*M(N)*	*SD (%)*	*Range*	*Possible Range*	*α*
Gender (M/F)	150 (F), 83 (M)	64.4, 35.6	---	---	---
Age	19.99	3.51	17-52	17+	---
Effort	2.28	1.418	1-7	1-7	---
Control	6.91	3.79	3-19	3-21	.79
Responsibility	1.59	1.101	1-7	1-7	---
Blame	4.21	2.58	3-16	3-21	.92
Ability to Help	4.48	1.721	1-7	1-7	---
Willing to Help	10.27	3.11	2-14	2-14	.84
Optimism	19.606	3.782	10-28	6-30	.98
Empathy	50.538	6.951	34-66	14-70	.99
Just World	71.975	7.018	48-93	20-120	.99
Own Risk	42.16	24.07	0-100	0-100	---
Other Risk	49.10	28.23	0-100	0-100	---
Comparative Risk	-6.94	26.51	-85-17	-100-100	---
Currently Know (Y/N)	105 (Y), 128 (N)	45.1, 54.9	---	---	---
PTE	32.78	7.23	7-49	7-49	.81

supported in that the more participants attributed the blogger's unsuccessful cancer outcome to his/her own lack of effort, the more control, responsibility, and blame they placed on the blogger for his/her cancer outcome. In turn, greater responsibility and blame were associated with less willingness to help the blogger.

Table 2. Bivariate Correlations

Variable	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*
1. Gender	—	-.140*	-.099	-.087	-.227**	.169**	.191**	.092	.076	-.097	.105	.073	.031	.308**
2. Effort		—	.552**	.455**	.562**	-.032	-.085	-.018	-.059	-.069	.236**	.026	-.051	-.112
3. Control			—	.527**	.414**	.044	.046	.038	-.088	-.035	.288**	.008	-.053	-.107
4. Responsibility				—	.629**	-.118	-.016	-.012	-.002	-.048	.058	-.083	-.140	-.211**
5. Blame					—	-.225**	-.117	-.017	-.088	.002	-.052	-.138	-.134	-.296**
6. Willing to Help						—	.079	.138*	-.076	-.006	.228**	.097	.193*	.215**
7. Own Risk							—	.496**	.380**	-.184**	-.031	-.130	-.118	.187*
8. Other Risk								—	-.615**	-.057	.081	-.093	.013	.173*
9. Comparative Risk									—	-.107	-.114	-.015	-.122	-.023
10. Currently Know										—	-.173**	-.012	.152	-.079
11. PTE											—	.246**	.320**	.141
12. Just World												—	.424**	.031
13. Optimism													—	.081
14. Empathy														—

* p < .05. **p < .01

The correlations between each dependent variable (effort attributions, control perceptions, responsibility, blame, and willingness to help) and potential covariates of comparative risk of developing cancer, knowing someone with cancer, and level of PT endorsement were examined. Greater PT endorsement was associated with greater effort; $r = .24$, $p = .01$, control, $r = .29$, $p = .01$; and willingness to help; $r = .23$, $p = .01$. Neither comparative risk of cancer, nor knowing someone with cancer were correlated with any of the dependent measures. As a result, PT endorsement was the only variable included as a covariate in the main analyses.

Main Analyses

A 2 Gender of Participant/Blogger (male, female) x 3 PT Exposure (control/no PT exposure, PT Exposure/did not try, PT Exposure/tried) MANCOVA (with the PT endorsement covariate) on effort attributions, control perceptions, responsibility, blame, and willingness to help was computed to test Hypothesis 1b, that compared to participants in the PT exposure/tried and control/no PT conditions, participants in the PT exposure/did not try condition would ascribe higher (lack of) effort, control, responsibility, and blame, to the blogger for his/her unsuccessful cancer outcome, as well as less willingness to help the blogger. This same MANCOVA was also used to test Hypothesis 2a, that compared to women's perceptions of the female blogger, men would perceive the male blogger as having greater control and responsibility over the unsuccessful cancer outcome, regardless of PT exposure; and Hypothesis 2b, that women would perceive the female blogger as having more responsibility in the PT exposure/did not try condition, compared to the control/no PT condition.

Significant main effects emerged in the overall MANCOVA for Gender of Participant/Blogger [Wilks's $\lambda = .927$, $F(5,221) = 3.49$, $p < .001$, $\eta_p^2 = .191$], for PT Exposure [Wilks's $\lambda = .901$, $F(10,442) = 2.37$, $p = .010$, $\eta_p^2 = .051$], and for the PT endorsement covariate [Wilks's $\lambda = .809$, $F(5,221) = 10.421$, $p < .001$, $\eta_p^2 = .191$]. There were no other significant main or interaction effects. Follow-up univariate analyses of covariance (ANCOVAs) were used to probe main effects for each dependent measure. Significant effects were probed by select simple contrast post-hoc tests.

Effort attributions. Significant main effects for both independent variables and the covariate emerged in the ANCOVA for effort attributions. As predicted, attributions of lack of effort were more salient in the PT exposure/did not try condition than in both of the PT exposure/tried condition [Did not try: $M = 2.64$ vs. Tried: $M = 2.29$, 95% CI (0.05, 0.95), $p = .03$] and the control/no PT exposure condition [Did not try: $M = 2.64$ vs. control/no PT exposure: $M = 1.91$, 95% CI (0.43, 1.31), $p = .001$]. There was no significant difference in effort attributions ascribed to the control/no PT exposure vs. PT exposure/tried conditions.

As expected, male participants assigned higher attributions of (lack of) effort to the male blogger than female participants assigned to the female blogger (*M*s = 2.54 vs. 2.13), $F(1, 225) = 8.03$, $p = .005$, $\eta_p^2 = .034$. Greater PT endorsement was associated with higher (lack of) effort ascriptions, $F(1, 225)=19.22$, $p < .001$, $\eta_p^2 = .038$.

Control perceptions. Significant main effects for both independent variables and the covariate emerged in the ANCOVA for control perceptions. As expected, control perceptions were significantly higher in the PT exposure/did not try condition than in the control/no PT exposure condition [Did not try: $M = 7.45$ vs. control/no PT exposure: $M =$

5.88, 95% CI (0.61, 2.94), p = .003]. Control perceptions were also significantly higher in the PT exposure/tried condition than in the control/no PT exposure condition [Tried: M = 7.48 vs. control/no PT exposure: M = 5.88, 95% CI (0.14, 2.4), p = .029]. There was no significant difference in control perceptions between the PT exposure/tried vs. PT exposure/did not try conditions.

As expected, male participants viewed the male blogger as having more control over his cancer outcome than female participants viewed the female blogger as having over her cancer outcome (Ms = 7.41 vs. 6.63), $F(1,225) = 4.57$, p = .034, η_p^2 = .020. Greater PT endorsement was associated with higher control perceptions, $F(1, 225)=23.41$, p = .000, η_p^2 = .094.

Responsibility. A significant main effect for PT exposure condition was found in the ANCOVA for responsibility. As expected, more responsibility was assigned to the blogger for his/her cancer outcome in the PT exposure/did not try condition than in the control/no PT exposure condition (Ms = 1.71 vs. 1.35), 95% CI (0.09, 0.81), p = .014. More responsibility was also assigned in the PT exposure/tried condition than in the control/no PT exposure condition (Ms = 1.75 vs. 1.35), 95% CI (-0.75, -0.04), p = .031. There was no significant difference in responsibility assigned between the PT exposure/tried vs. PT exposure/did not try conditions. There were no main effects for gender or PT endorsement.

Blame. There was a significant main effect for gender in the ANCOVA for blame. As expected, male participants blamed the male blogger for the unsuccessful cancer outcome to a greater extent than female participants blamed the female blogger

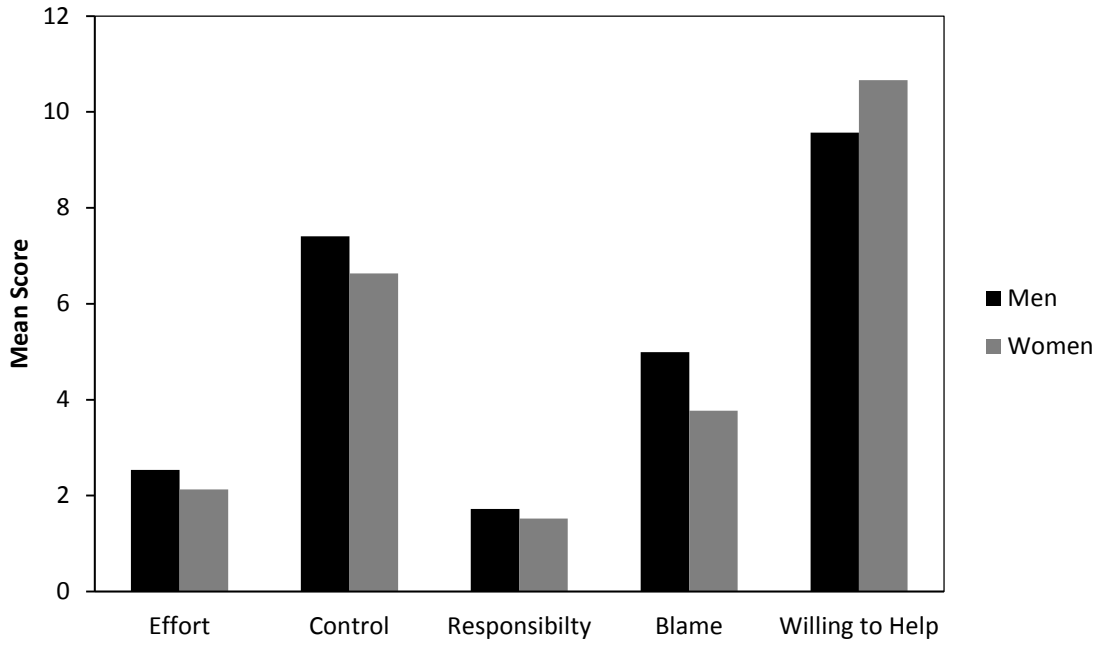
(*M*s = 4.99 vs. 3.77), $F(1,225) = 12.18$, $p = .001$, $\eta_p^2 = .051$. There were no other main effects for blame.

Willingness to help. ANCOVA results yielded significant main effects for gender and the PT endorsement covariate for willingness to help. As expected, male participants were less willing to help the male blogger than female participants were willing to help the female blogger (*M*s = 9.57 vs. 10.66), $F(1,225) = 5.03$, $p = .026$, $\eta_p^2 = .022$. Greater PT endorsement was associated with greater willingness to help $F(1, 225)=10.66$, $p = .001$, $\eta_p^2 = .045$.

In summary, Hypothesis 1b was supported for effort attributions; participants ascribed the unsuccessful cancer outcome to the blogger's own (lack of) effort more so in the PT exposure/did not try condition than in the control/no PT exposure or the PT exposure/tried conditions. This hypothesis was partially supported for both control and responsibility ascriptions; participants in the PT exposure/did not try condition and the PT exposure/tried condition assigned higher ascriptions of control and responsibility compared to those in the control/no PT exposure condition, but the PT exposure/did not try and the PT exposure/tried conditions did not significantly differ. There were no significant differences between the PT exposure conditions for either blame or willingness to help.

Hypothesis 2a was partially supported: men ascribed more control but not more responsibility to the male blogger, than women ascribed to the female blogger. See Figure 1 for all gender main effects.

Figure 1. Gender differences on effort, control, responsibility, blame, and willingness to help.



Hypothesis 2b was not supported, there was no significant difference in women's perceptions of responsibility for the female blogger in the PT exposure/did not try condition versus the control/no PT exposure condition.

Optimism, empathy, and just world beliefs. Due to an unanticipated technical glitch within the Qualtrics randomization tool, 72 female respondents (spread across all experimental conditions) were not given the opportunity to complete measures of empathy, optimism, or just world beliefs. Accordingly, all subsequent analyses are based on the remaining 78 female participants and all 83 male participants. It is also important to note that ANCOVA results indicated no significant differences on any of the dependent variables between female participants who completed these measures, and those who did not.

In order to assess gender differences on each of the individual difference variables of empathy, just world beliefs, and dispositional optimism, separate one-way ANCOVAs with gender as the independent variable and PT endorsement as the covariate were computed for each individual difference variable. There were no significant gender differences in either optimism or just world beliefs. However, as expected, there was a significant difference in empathy, with women reporting higher levels of empathy than men (M = 52.75 vs. 48.48), $F(1, 160) = 14.90$, $p < .001$, $\eta_p^2 = .087$.

Separate linear regression analyses in which dispositional optimism, empathy, and just world beliefs were predictors with gender and PT endorsement as the covariates were computed to predict effort attributions, control perceptions, responsibility, blame, and willingness to help the blogger. It was also determined whether these predictive relationships varied as a function of PT exposure by recomputing the regressions for each PT exposure condition separately. Results for the overall regression analyses and the same regression analyses split by PT exposure condition are reported below.

The overall regression model for effort attributions was significant, $R^2 = .07$, $F(4, 153) = 2.31$, $p = .046$. The only significant predictor was the covariate of PT endorsement. Greater endorsement of PT predicted higher (lack of) effort attributions ($\beta = .242$, $p = .004$). The subsequent regression analyses for each PT exposure condition on effort attributions did not yield significant findings beyond the overall model, nor did the findings vary as a function of PT exposure condition.

The overall regression model for control perceptions was significant $R^2 = .11$, $F(5, 153) = 3.81$, $p = .003$. Consistent with the findings for effort attributions, the only significant predictor was the covariate of PT endorsement: greater endorsement of PT

predicted higher control perceptions (β = .333, $p < .001$). As shown in Table 3, the subsequent regression analyses for each PT exposure condition on control perceptions varied. Within the control/no PT exposure condition, the overall model was significant $R^2 = .262$, $F(5, 48) = 3.41$, $p = .010$, and greater empathy predicted less perceived control (β = -.364, $p = .009$). Within the PT exposure/did not try condition the overall model was significant $R^2 = .30$, $F(5, 48) = 3.86$, $p = .005$, but this time, it was the covariates that were significant predictors. That is, women assigned less control than men did (β = -.301, $p < .001$) and consistent with the overall model, greater PT endorsement predicted greater control (β = .580, $p < .001$). The overall model for the PT exposure/tried condition was not significant.

Table 3. Regression Model of Individual Difference Predicting Perceived Control within each PT Exposure Condition

	PT Exposure								
	Control			*Did Not Try*			*Tried*		
Predictors	β	*t*	Sig.	β	*t*	Sig.	β	*t*	Sig.
Optimism	-.324	-2.08	.043	-.017	-0.12	.903	-.305	-1.92	.061
Empathy	-.364	-2.72	.009	.036	0.26	.798	-.020	-0.14	.886
Just World	.087	0.58	.567	-.063	-0.45	.653	-.036	-0.26	.799
Gender	-.141	-1.03	.311	-.301	-2.14	.038	.214	1.49	.144
PTE	.177	1.36	.181	.580	3.87	.000	.278	1.95	.057
R^2	.262			.30			.147		

The overall regression model for judgments of responsibility was marginal $R^2 = .07$, $F(5, 153) = 2.16$, $p = .061$.Greater empathy predicted less responsibility assigned to the blogger for his/her unsuccessful cancer outcome (β = -.214, $p < .01$). There were no

other significant predictors of responsibility. The subsequent regression analyses for each PT exposure condition on responsibility did not yield significant findings beyond the overall model, nor did the findings vary as a function of PT exposure condition.

The overall regression model for blame was significant $R^2 = .12$, $F(5, 153) = 4.24$, $p = .001$. Consistent with the findings for responsibility, greater empathy predicted less blame assigned to the blogger for his/her unsuccessful cancer outcome ($\beta = -.250$, $p < .002$). There were no other significant predictors of blame. The subsequent regression analyses for each PT exposure condition on blame did not yield significant findings beyond the overall model, nor did the findings vary as a function of PT exposure condition.

Table 4. Regression Model of Individual Difference Predicting Willingness to Help within each PT Exposure Condition

	PT Exposure								
	Control			*Did Not Try*			*Tried*		
Predictors	β	*t*	Sig	β	*t*	Sig	β	*t*	Sig
Optimism	.135	.864	.392	-.010	-.066	.948	.280	1.910	.062
Empathy	.384	2.853	.006	.178	1.134	.263	-.174	-1.339	.187
Just World	.057	.372	.712	.058	.374	.710	-.189	-1.450	.154
Gender	.073	.532	.597	.034	.215	.830	.164	1.229	.225
PTE	.201	1.540	.130	.231	1.388	.172	.301	2.285	.027
R^2	.255			.136			.271		

The overall regression model for willingness to help was significant $R^2 = .15$, $F(5, 153) = 5.47$, $p < .001$. The only significant predictor was the covariate of PT endorsement: greater endorsement of PT predicted more willingness to help ($\beta = .253$, $p = .002$). The

subsequent regression analyses for each PT exposure condition on willingness to help varied as a function of PT exposure condition. Table 4 presents the regression models for each of the three PT exposure conditions. Within the control/no PTE condition, the overall model was significant R^2 = .255, $F(5, 48) = 3.29$, p = .012, greater empathy predicted more willingness to help (β = .384, p = .006). The overall model for the PT exposure/did not try condition was not significant. The overall model for the PT exposure/tried condition was significant R^2 = .271, $F(5, 48) = 3.57$, p = .008. Like the overall model, the only significant predictor was the covariate of PT endorsement: greater endorsement of PT predicted more willingness to help (β = .301, p = .027).

In summary, Hypothesis 3a was supported: compared to men, women reported greater levels of empathy. Hypothesis 3b, that higher levels of dispositional optimism will predict higher levels of control attributions was not supported. Hypothesis 3c, was partially supported: greater empathy predicted lower levels of responsibility and blame attributed to the blogger for his/her unsuccessful cancer outcome. Greater empathy also predicted less perceived control and a greater willingness to help the blogger, but only within the Control/no PT exposure condition. Finally, Hypothesis 3d, that higher levels of just world beliefs will predict higher levels of blame, and lower levels willingness to help was not supported.

CHAPTER IV

DISCUSSION

An attributional framework (Weiner, 1985) was used in the current study to examine the impact of exposure to positive thinking (PT) on social perceptions of cancer. Specifically, within the context of a hypothetical online scenario in which the level of PT exposure was manipulated, undergraduate college students' indicated the degree to which they perceived a hypothetical blogger's own effort played a role in his/her unsuccessful cancer outcome, along with how much control and responsibility the blogger had over his/her cancer outcome, how much they blamed the blogger for the outcome, and how willing they were to help the blogger. In addition, the current study was used to examine how individual differences in participants' dispositional optimism, empathy, and just world beliefs influenced their perceptions of the blogger's cancer experience.

The study's main outcomes are summarized as follows: (1) exposure to PT enhanced effort attributions, control perceptions, and perceptions of responsibility for the unsuccessful cancer outcome; (2) gender differences emerged among participants in which men attributed more effort, control and responsibility to the male blogger than women attributed to the female blogger, but women were more willing to help the blogger than men were; and (3) individual differences in empathy impacted attributions of control, responsibility, and blame, as well as willingness to help. Each of these main study outcomes and their potential implications, are subsequently discussed below.

Impact of PT Exposure on Attributions

Weiner's (1985) theoretical framework was applied in this study to measure attribution-based perceptions of cancer patients' accountability for their unsuccessful cancer outcomes. The current findings showed that, consistent with attribution theory and Hypothesis 1a, participants who assigned higher levels of (lack of) effort to the blogger also assigned more perceived control; which in turn was associated with more responsibility and blame, which was associated with less willingness to help the blogger.

As predicted by Hypothesis 1b, when the blogger was exposed to PT but chose not to try it, participants ascribed greater (lack of) effort to the blogger. Also, exposure to PT resulted in greater control and responsibility ascribed to the blogger for his/her unsuccessful cancer outcome, regardless of whether or not the blogger tried PT. Additionally, the more participants endorsed the use of PT to "fight" cancer, the more (lack of) effort and control they ascribed to the blogger for his/her cancer outcome. In other words, greater endorsement of PT was associated with the social belief that since the cancer treatment was unsuccessful, the blogger must not have tried hard enough to "beat" it.

These findings are consistent with past research indicating that unsuccessful cancer outcomes tend to be attributed to the blogger's lack of effort more so if they chose not to try PT than if they chose to try it or if PT is not mentioned (Ruthig et al., 2012). Together with Ruthig et al.'s prior work, the current results suggest that when the blogger chose not to try PT and instead allowed him/herself to experience all positive and negative thoughts and emotions, participants believed that the blogger was not trying hard enough to "fight" the cancer. Similarly, exposure to PT contributes to the social

perception that the blogger has greater control and responsibility over the cancer outcome.

Although the current bivariate correlations showed support for the Weiner's (1985) attributional framework (i.e., greater effort attributions were associated with greater perceived control, which related to greater attributions of responsibility, greater blame, and less willingness to help), PT exposure, which implies internal locus of control, only predicted effort, control, and responsibility, but not blame or willingness to help the blogger.

A possible explanation for the lack of blame effect is the context of this study. Upon reading the blog of a cancer patient who just found out that his/her cancer treatment was unsuccessful and that the cancer was likely incurable, participants may have been reluctant to blame the blogger for "failing" to recover. That is, the word blame has strong negative connotations, and participants may have been hesitant to describe their reactions to the blogger using that particular word. Support for this reasoning comes from a supplemental comparison of overall mean ratings of perceived control versus blame that indicated ratings of blame were significantly ($p < .001$) lower than ratings of control. Moreover, the mean of blame was 4.21 with a possible range of 3-21, indicating a likely floor effect in responses.

A possible explanation for the lack of effect of PT exposure on willingness to help is that both social desirability (Crowne & Marlowe, 1960) and the social expectation of offering help to those who are ill (Berkowitz & Daniels, 1964) overwhelmed the effect of PT exposure. That is, participants may have wanted to “do the right thing” and help the blogger regardless of whether or not the blogger tried PT. A second possible explanation

for this lack of effect is that this willingness to help measure differed from the other attribution-related dependent measures in an important way. Specifically, all questions pertaining to effort, control, responsibility, and blame refer to the blogger; whereas the questions about willingness to help directly refers to the participants themselves. Thus, perhaps because the focus of the questions differed for willingness to help, the pattern of responding also differed and, in this case, resulted in a lack of effect for PT exposure.

Together with past research (Ruthig et al., 2012) the current findings suggest that exposure to the concept of PT makes effort, control, and responsibility attributions more salient. That is, exposure to PT contributes to the social perception that cancer patients have greater control and responsibility for their unsuccessful cancer outcome. Although participants who were exposed to the idea of PT did not explicitly blame the blogger for the unsuccessful cancer outcome, they did indicate that the blogger had control over and responsible for the outcome, which implies that they essentially perceived the blogger as culpable for failing to recover.

These personal accountability perceptions have practical implications for how people respond to cancer patients in real life. In particular, such perceptions may be detrimental to the relationship between cancer patients and their loved ones. For example, holding someone as personally accountable for their unsuccessful cancer outcome may result in negative interactions, withdrawing from the patient, or withholding social support. In turn, this tacit blame may contribute to feelings of guilt and alienation for the cancer patient. Additionally, health care providers may spend more time and effort on patients who they perceive as really trying hard to remain positive or as being "fighters" (Doan & Gray, 1992).

Considering the potential negative consequences of PT endorsement, it is important for cancer patients, loved ones, friends, and health care providers to be made aware of the presumed, implicit link between the notion of positive thinking and the exaggerated perception of control over and responsibility for the illness outcome. Although some aspects of positive thinking (e.g. cognitive reframing or benefit finding) can be effective in reducing stress associated with illnesses such as cancer (Gillham, Shatte, Reivich, & Seligman, 2002; Fredrickson, Mancuso, Branigan, & Tugade, 2000), it is important for patients, their loved ones, and health care providers to understand that those coping strategies do not influence the patient's actual control over their illness outcomes.

Additionally, people cope with illness in different ways. Some patients may prefer to use a technique such as PT, whereas other patients may prefer to freely express and discuss their negative emotions and concerns. Caregivers should be aware that not all patients cope in the same way, and should be accepting and supportive of however the patient chooses to cope.

Gender Differences

As predicted by Hypothesis 2a, men held the male blogger as more accountable for his cancer outcome than women held the female blogger. That is, compared to women's perceptions of the female blogger, men assigned greater (lack of) effort to the male blogger, viewed him as having greater control over the cancer outcome, blamed him to a greater extent for the unsuccessful outcome, and were less willing to help him. Moreover, these differences occurred regardless of exposure to PT. Contrary to Hypothesis 2a, there was no significant gender difference in responsibility attributed to

the blogger for his/her cancer outcome. These findings from the current study in line with past research (Ruthig et al., 2012), who also found that male participants attributed greater (lack of) effort to the male blogger and viewed him as more in control of the cancer outcome than female participants viewed the female blogger. Additionally, the current findings are in line with the social expectation that it is more socially acceptable for women to receive more health-related assistance (Bertakis, Azari, Helms, Callahan, & Robbins, 2000).

The gender differences in the current study may largely be explained by prevalent gender norms dictating that men should be strong, self-reliant, and willing to face a challenge (Bem, 1974; Eagly & Steffen, 1984). These stereotypical views may explain why the male participants judged the male blogger as having more control and responsibility for the cancer outcome. It is possible that male participants viewed the male blogger as stronger and more in control of the situation, and therefore not requiring help, whereas female participants viewed the female blogger as playing a less active role in her cancer trajectory in terms of not having control and being reliant on others for assistance. Women are both more likely to ask for and to receive help than men, possibly because it is less socially acceptable for men to be viewed as needing help (Eagly & Crowley, 1986). Additionally, the social norm of women being "caretakers" (Eagly & Crowly, 1986) may have influenced the women in this study to be more willing to offer help, regardless of their personal feelings.

These gender differences have implications for cancer patients. In particular, male patients may not receive the same level of support as female patients because male patients may be viewed as autonomous, and therefore not needing of support. This can

leave male cancer patients ill equipped in terms of psychological and social support during their cancer experience. Conversely, female patients may be overwhelmed by too much support- which can lead to resentment, overdependence, or feelings of inadequacy (Fisher, Nadler, & Whitcher-Alagna, 1982). Caregivers and healthcare providers should be aware of these gender differences in how cancer patients are perceived, as well as how such perceptions can potentially influence their behavior towards those patients.

Individual Differences

Three individual difference factors, namely dispositional optimism, empathy, and just world beliefs, were examined as predictors of social perceptions of cancer. Overall, and as expected (Hypothesis 3a) women reported higher levels of empathy than men did. This finding is consistent with past research showing that women report higher levels of empathy than men (Davis, 1983a, 1983b).

Empathy was also the only individual difference factor that emerged as a significant predictor of social perceptions of cancer and in some cases, its impact varied as a function of PT exposure. Specifically, within the control/no PT exposure condition empathy predicted less perceived control and a greater willingness to help. That is, when PT was not mentioned in the scenario, highly empathetic participants perceived the blogger as having less control over his/her cancer outcome and were more willing to help the blogger than were comparatively less empathetic participants. However, in the conditions in which PT exposure occurred, participants' empathy did not predict their control perceptions or willingness to help.

In contrast, empathy's contribution to perceptions of responsibility and blame were not impacted by level of PT exposure. That is, regardless of PT exposure condition,

empathetic participants perceived the blogger as less responsible and placed less blame on the blogger for his/her cancer outcome than did their comparatively less empathetic counterparts.

The current findings are consistent with past research, showing that greater empathy leads to more positive attitudes towards people who are ill (Batson et al., 1997). However, in the current study this was only true of participants who were not exposed to PT; when participants were exposed to PT, those higher in empathy were not more willing to help the blogger than those low in empathy. In other words, the effect of empathy seems to be overridden by exposure to PT. It is possible that exposing participants to PT, and its' precepts that patients have control and responsibility for their cancer outcomes, impedes willingness to help. Even if the person is highly empathetic, exposure to PT may emphasize the belief that the patient can, and should, help themselves. PT exposure may even diminish the belief that the patient needs assistance.

Neither dispositional optimism nor just world beliefs predicted any of the social perception dependent measures. Although optimists tend to have a greater sense of control over stressful situations (Fontaine, Manstead, & Wagner, 1993); the evidence for how individuals perceive another's control over a negative event is inconsistent (Hoorens & Smits, 2001). Optimism may simply have not been a significant factor in this situation, whereas other factors such as PT endorsement were more central to determining perceived levels of control.

There are at least two possible explanations for the finding that just world beliefs failed to predict blame or willingness to help. First, as mentioned previously, given the scenario of a cancer patient who just found out that his or her treatment was unsuccessful,

participants may have responded in accordance with the social responsibility norm and experienced reluctance to express blame and an obligation to help the blogger.

A second possible explanation is that participants high in just world beliefs should presumably engage in victim blaming (Rubin & Peplau, 1975), i.e. assuming that the blogger deserved the unsuccessful outcome as a result of not trying PT or not trying hard enough. It is possible that participants who endorsed just world beliefs were instead engaged in benefit finding- making meaning out of negative events by reinterpreting the outcome into something positive (Bower, Moskowitz, & Epel, 2009). By reinterpreting the outcome as something positive, such as the victim becoming a better, stronger person or bringing a family together, belief in a just world can be maintained without derogating or blaming the victim (Bower et al. 2009)

Limitations

There are some limitations to this study. First, the sample was drawn from a relatively homogenous, Midwestern, college population, thereby limiting its generalizability. Future research should explore social perceptions of cancer patients in a larger and more diverse sample. For example, a sample drawn from an older population might include more people who have known someone who had cancer, and that person might have been closer to them (for instance, a spouse, sibling, or parent). As such, older participants' social perceptions of cancer experience might vastly differ from those of college student who, as a consequence of less life experience, have likely had considerably less experience with cancer.

A second limitation concerns an unanticipated technical glitch in the Qualtrics system that caused half of the female participants to not be presented with the individual

difference measures of dispositional optimism, empathy, and just world beliefs. Fortunately, analyses showed that there were no significant differences between female participants who did receive the individual difference surveys and those who did not. Therefore, the results would likely have been the same if the glitch had not occurred.

Third, this study employed a hypothetical blog. Participants may have been aware of the general procedures used in psychological research, including the use of hypothetical situations, and so have responded differently, perhaps with less emotional involvement, because of this awareness than they would have if presented with a real cancer patient. However, previous research using a similar hypothetical blog has indicated that participants were invested in the scenario, and viewed it as genuine (Ruthig et al., 2012).

Finally, although this study assessed participants' willingness to help the blogger, there were limited questions about their willingness to help. Additionally, the way the questions were worded may have accessed gender norms about helping that cued female participants to indicate a greater willingness to help. Generally, women are expected to help care for the personal and emotional needs of others, such as offering encouragement or a shoulder to cry on, whereas men are expected to be helpful in a more physical way, such as assisting with difficult physical labors or engaging in acts of heroism (Eagly & Crowly, 1986). Given the context of the current study, the type of help participants could imagine giving the blogger probably tended more towards the personal or emotional support than physical, which might have encouraged female participants to respond with greater willingness to help.

Future Directions and Conclusion

The current findings highlight several directions for future research examining the link between positive thinking and social perceptions of cancer. Future research should draw from a larger and more diverse sample, to determine whether the impact of PT exposure found among the current sample of college students generalizes to non-college students of various ages and sociodemographic backgrounds.

It would also be informative to study cross-gender blogger and participant effects. Like previous research (Ruthig et al., 2012) the current study used same-gender blogger and participants. It would be interesting to determine how perceptions of the blogger differ between participants judging a same-gender blogger versus a different-gender blogger. In judging a same-gender blogger, participants may have been engaging in defensive attribution style (Shaver, 1970). The defensive attribution perspective states that people protect themselves from distress associated with negative events, which they are potentially vulnerable to experiencing, by viewing the victims of negative events as responsible for them (Burger, 1981). By reading the blog of a same-gender cancer patient, participants who felt more vulnerable to potentially having cancer may have been more likely to find PT appealing, because it allowed them to blame the victim as a defense against potentially being the same situation. Having participants judge a cross-gender blogger ay diminish this effect.

Additionally, it would be beneficial to use a more detailed blog, possibly with several posts over a span of time, showing the use of PT during treatment. Participants might respond differently to a blogger who never expresses any negative emotions while using PT versus a blogger who sometimes does express negative emotions while using

PT. Or more generally, they might become more invested in an ongoing blog as opposed to a one-blog.

It would also be worthwhile to manipulate the type of cancer the blogger has, and possibly the relationship of the blogger to the participant (e.g., a friend versus a relative), which would enable examination of how different relationships impact social perceptions of cancer. Different types of cancer evoke different responses, as some cancers are associated with controllable causes, such as lung cancer and smoking, while other cancers are associated with uncontrollable causes, such as breast cancer (Chapple, Ziebland, & MacPherson, 2004). PT exposure encourages an exaggerated perception of control, but its effect on social perceptions might vary based on existing perceptions of the controllability of different types of cancer.

Future research should also examine willingness to help with a more objective, behavioral measure rather than relying on self-report. The current study's questions on willingness to help were intentionally vague, so it is unknown what type of helping behavior participants were willing to engage in. Using a more objective measure, such as observing the types of helping behaviors participants actually engage in, would be more informative in terms of diminishing the potential effect of socially desirable responding.

Finally, it was shown that higher levels of empathy predicted less responsibly and blame attributed to the blogger for the cancer outcome, and a greater willingness to help. This suggests that one way to offset the reactions that PT evokes, namely the exaggerated perceptions of control and responsibility for the cancer outcome, would be to encourage empathy in the caregiver or family member. Future research could explore techniques used to induce empathy, such as perspective taking, which has been shown to lead to

more positive attitudes and greater willingness to help (Batson et al, 1997; Batson, Chang, Orr, & Rowland, 2002). Perhaps through inducing empathy, the impact of PT exposure can be reduced.

Despite the aforementioned limitations and need for additional research, the current study made important contributions to the area of social perceptions of illness in terms of demonstrating the link between PT exposure and perceived controllability of cancer outcomes. It also built upon past attribution theory research by applying Weiner's (1985) theory to the cancer context to assess social perceptions of effort, control, responsibility, blame, and willingness to help. Finally it furthered research on PT and social perceptions of cancer by examining the moderating roles of individual differences in optimism, empathy, and just world beliefs. This study re-affirmed the previous findings that PT promotes a belief in control over and responsibility for the outcome of a potentially terminal illness, and the need to be aware of (and beware of) this tendency.

APPENDICES

Appendix A
Consent Form

STUDY INFORMATION SHEET: SOCIAL PERCEPTIONS OF CANCER

You are invited to be in a research study about social perceptions of cancer. The purpose of this study is to ask individuals about their feelings and reactions to other people's experiences with cancer. This information will contribute to learning about social views of cancer and how to improve social support provided to people with cancer. Approximately 210 psychology students will take part in this study.

Your participation in the study will take about 15-20 minutes and will consist of completing a brief survey by responding to questions and statements. If you choose to participate in this study, you are free to skip any questions that you would prefer not to answer.

You may benefit from being in this study in terms of better understanding how you think about cancer and about people dealing with this increasingly common illness. Other people might also benefit from this study in terms of understanding society's views of cancer and how to better support individuals dealing with the illness.

You will not have any costs for being in this research study. You will receive compensation for participating in this study in the form of 1/2 hour of extra credit toward your psychology course. The University of North Dakota and the research team are receiving no payments from other agencies, organizations, or companies to conduct this research study.

Your responses in the study are completely anonymous and you will not be asked to include any personal information with your responses. Your participation is voluntary. You may choose not to participate or you may discontinue your participation at any time without penalty or loss of benefits to which you are otherwise entitled. Your decision whether or not to participate will not affect your current or future relations with the University of North Dakota.

The researcher conducting this study is Kelly Jones. You may ask any questions you have now. If you later have questions, concerns, or complaints about the research please contact Kelly Jones at 443-386-1582 during the day or after hours. Or, if you have questions regarding your rights as a research subject, or if you have any concerns or complaints about the research, you may contact the University of North Dakota Institutional Review Board at (701) 777-4279. Please also call this number if you cannot reach research staff or if you wish to talk with someone else.

Appendix B
Debriefing

Dear UND student, Thank you for participating in our study. The purpose of this research is to learn about social reactions to a person's experience with cancer and cancer treatment. The personal story that you read is fictitious but it represents a realistic account of what people may experience when they have cancer. In addition to dealing with the cancer itself, there are many unique challenges that cancer patients face such as fear and negative emotions, stress, strained social relationships, financial difficulties, and uncertain future outcomes. Thus, it is important to understand how to best support these people in coping with their illness. One way to approach this is to examine society's views of cancer and coping with cancer. This research will provide us with a sense of people's reactions to someone else's cancer experiences and your responses will help to inform us about how we can improve the study and questions for future research. We are hoping the results of this research may be able to assist health care providers, caregivers, and the general public in understanding social views of cancer, cancer treatment, and how to provide the best support for those who are dealing with the disease. If you have any questions regarding this research, please feel free to contact the principle investigator: Kelly Jones (kelly.jones@my.und.edu) or Dr. Joelle Ruthig (joelle.ruthig@email.und.edu) – Department of Psychology. If you are experiencing problems of any kind, UND's Student Counseling Center offers many helpful services for students, and can offer useful advice and assistance. You can find further information at the following website: http://und.edu/health-wellness/counseling-center/

Appendix C
Questionnaire

Read each question or statement carefully then circle the number that best represents your response. Feel free to reread or refer back to Alexander's/Alexandra's story above as needed.

1. How much control did/does Alexander/Alexandra have over still having cancer?

   1 2 3 4 5 6 7

   (*no control*) (*total control*)

2. How much personal influence did/does Alexander/Alexandra have over still having cancer?

   1 2 3 4 5 6 7

   (*no influence*) (*total influence*)

3. To what extent did Alexander/Alexandra personally determine his/her cancer outcome?

   1 2 3 4 5 6 7

   (*not at all*) (*totally*)

4. How responsible is Alexander/Alexandra for still having cancer?

   1 2 3 4 5 6 7

   (*not at all responsible*) (*totally responsible*)

5. Could Alexander's/Alexandra's body have responded better if Alexander/Alexandra had tried harder to fight the cancer?

   1 2 3 4 5 6 7

   (*definitely not*) (*definitely yes*)

6. How much blame should Alexander/Alexandra have for developing cancer?

   1 2 3 4 5 6 7

   (*no blame*) (*complete blame*)

7. How much blame should Alexander/Alexandra have for still having cancer?"

   1 2 3 4 5 6 7

   (*no blame*) (*complete blame*)

8. To what extent is it Alexander's/Alexandra's fault for still having cancer?"

1 2 3 4 5 6 7

(*not at all*) (*entirely*)

9. If given the opportunity, how likely would you be to assist Alexander/Alexandra in some way?"

1 2 3 4 5 6 7

(*not at all*) (*very likely*)

10. If given the opportunity, how likely would you be to help Alexander/Alexandra in some way?"

1 2 3 4 5 6 7

(*not at all*) (*very likely*)

11. Do you think you could help Alexander/Alexandra in some way if you wanted to?"

1 2 3 4 5 6 7

(*not at all*) (*definitely*)

12. Have you ever had cancer? (circle one) Yes No

13. Has anyone you know ever had and recovered from cancer? (circle one) Yes No

If yes, how close is this person to you? (If more than one person, respond regarding the person you are closer to).

1 2 3 4 5 6 7

Not close *Somewhat* *Very close*

14. Has anyone you know died from cancer? (circle one) Yes No

If yes, how close was this person to you? (If more than one person, respond regarding the person you are closer to).

1 2 3 4 5 6 7

Not close *Somewhat* *Very close*

If yes, how old was this person when he/she died? Years old

If yes, how long ago was this? Years

15. Does anyone you know *currently* have cancer? (circle one) Yes No

If yes, how close is this person to you? (If more than one person, respond regarding the person you are closer to).

1 2 3 4 5 6 7
Not close *Somewhat* *Very close*

16. Using the following scale: (no chance) 0% ----------100% (100% chance) What do you think the likelihood is that you will develop cancer at some point in the future?

17. Using the following scale: (no chance) 0% ----------100% (100% chance) What do you think the likelihood is that a college student of the same gender and age as you will develop cancer at some point in the future?

*****For Questions 18-21, please indicate the extent to which you agree or disagree with the following statements:**

18. Positive thinking/having a positive mental attitude can help a person *recover from* cancer.

1 2 3 4 5 6 7
Strongly Disagree *Strongly Agree*

19. Positive thinking/having a positive mental attitude can help *prevent* cancer.

1 2 3 4 5 6 7
Strongly Disagree *Strongly Agree*

20. Positive thinking/having a positive mental attitude can help *prevent the reoccurrence of* cancer.

1 2 3 4 5 6 7
Strongly Disagree *Strongly Agree*

21. Cancer patients should be encourage to engage in positive thinking and have a positive mental attitude.

1 2 3 4 5 6 7
Strongly Disagree *Strongly Agree*

22. To what extent do you use Positive Thinking in your own life?

1 2 3 4 5 6 7
Not at all *All the time*

23. Would you encourage someone you cared about to use Positive Thinking in a situation like Alexander's/Alexandra's?

1 2 3 4 5 6 7
Not at all *Very Likely*

24. If it were you, would you use Positive Thinking in Alexander's/Alexandra's place?

1	2	3	4	5	6	7
Not at all						*Very Likely*

25. Do you believe Positive Thinking works? _____

    If yes, why? _____

26. What is your age? _____

27. Have you previously participated in an online study about a blogger with cancer? _____

28. What type of cancer do you think Alexander/Alexandra has? _____

Appendix D
Just World Beliefs Scale

Using the following scale, please indicate the extent to which you agree or disagree with the following statements.

1	2	3	4	5	6
Disagree Completely					*Agree Completely*

1. I've found that a person rarely deserves the reputation he has.
2. Basically, the world is a just place.
3. People who get "lucky breaks" have usually earned their good fortune.
4. Careful drivers are just as likely to get hurt in traffic accidents as careless ones.
5. It is a common occurrence for a guilty person to get off free in American courts.
6. Students almost always deserve the grades they receive in school.
7. Men who keep in shape have little chance of suffering a heart attack.
8. The political candidate who sticks up for his principles rarely gets elected.
9. It is rare for an innocent man to be wrongly sent to jail.
10. In professional sports, many fouls and infractions never get called by the referee.
11. By and large, people deserve what they get.
12. When parents punish their children, it is almost always for good reason.
13. Good deeds often go unnoticed and unrewarded.
14. Although evil men may hold political power for a while, in the general course of history good wins out.
15. In almost any business or profession, people who do their job well rise to the top.
16. American parents tend to overlook the things most to be admired in their children.
17. It is often impossible for a person to receive a fair trial in the USA.
18. People who meet with misfortune have often brought it on themselves.
19. Crime doesn't pay.
20. Many people suffer through absolutely no fault of their own.

Appendix E
Life Orientation Test- Revised

Using the following scale, lease indicate the extent to which you agree or disagree with the following statements.

1	2	3	4	5
Strongly Disagree				*Strongly Agree*

1. In uncertain times, I usually expect the best.
2. It's easy for me to relax.
3. If something can go wrong for me, it will.
4. I'm always optimistic about my future.
5. I enjoy my friends a lot.
6. It's important for me to keep busy.
7. I hardly ever expect things to go my way.
8. I don't get upset too easily.
9. I rarely count on good things happening to me.
10. Overall, I expect more good things to happen to me than bad.

Appendix F
Interpersonal Reactivity Index

The following statements inquire about your thoughts and feelings in a variety of situations. For each item, using the following scale, indicate how well it describes you.

1	2	3	4	5
Does not describe me well				*Does describe me well*

1. I often have tender, concerned feelings for people less fortunate than me.

2. I sometimes find it difficult to see things from the "other guy's" point of view.

3. Sometimes I don't feel very sorry for other people when they are having problems.

4. I try to look at everybody's side of a disagreement before I make a decision.

5. When I see someone being taken advantage of, I feel kind of protective towards them.

6. I sometimes try to understand my friends better by imagining how things look from their perspective.

7. Other people's misfortunes do not usually disturb me a great deal.

8. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments.

9. When I see someone being treated unfairly, I sometimes don't feel very much pity for them.

10. I am often quite touched by things that I see happen.

11. I believe that there are two sides to every question and try to look at them both.

12. I would describe myself as a pretty soft-hearted person.

13. When I'm upset at someone, I usually try to "put myself in his shoes" for a while.

14. Before criticizing somebody, I try to imagine how I would feel if I were in their place.

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