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## A PATH ANALYTIC INVESTIGATION OF EMPATHIC RESPONSES TO FILM

By

Jennifer Ann Mettler

## **A THESIS**

Submitted to Michigan State University in partial fulfillment of the requirements for the degree of

MASTER OF ARTS

Department of Communication

#### ABSTRACT

#### A PATH ANALYTIC INVESTIGATION OF EMPATHIC REACTIONS TO FILM

By

#### Jennifer Ann Mettler

This thesis proposes a model to explain the relationships among four dimensions of empathy (perspective taking, empathic concern, emotional contagion, and fictional involvement) and how these variables are related to emotional responses to film. This model was tested under two conditions, one using a film clip with positive emotional connotations the other with negative emotional connotations. Tests of the model suggest that some dimensions of empathy are important predictors of emotional responses to negatively charged film; individuals high on these dimensions tend to have stronger negative emotional reactions to such stimuli. There appear, however, to be differences in reactions to positive and negative stimuli. The findings in this investigation suggest empathy may not be an important concept in understanding emotional reactions to positive stimuli. This model was extended to predict relevant attitudes and behaviors under the two conditions. Tests of the extended model yielded mixed findings.

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#### Chapter 1: Theory and Literature Review

Empathy has been of interest to scholars in a wide range of disciplines. It has been an important variable in the study of moral development (Piaget, 1932; Hoffman, 1970), socialization (Sullivan, 1953), altruistic behavior (Batson, Duncan, Ackerman, Buckley, & Birch, 1981; Coke, Batson, & McDavis, 1978; Krebs, 1975; Stiff, Dillard, Somera, Kim, & Sleight, 1988), stress and burnout among human service workers (Miller, Stiff, & Ellis, 1988), and aggression (Mehrabian & Epstein, 1972). Recently, mass media researchers have investigated the role of empathy in emotional responses to various kinds of filmed stimuli. Zillmann (in press), for example, has suggested that the high iconicity of audio-visual representations make them powerful elicitors of affect because they lead individuals to imagine those representations in terms of past experiences that were arousing for the individual. Tamborini and Mulcrone (1987) have examined empathy as a mediating factor in the enjoyment of graphic horror featuring female victimization. Wilson and Cantor (1985) have investigated differences in fear arousal in

children based on their level of empathic development.

This study examines the role of empathy in emotional reactions to emotionally charged film stimuli. A path model is proposed to explain the relationships among four dimensions of empathy perspective taking, empathic concern, emotional contagion, and fictional involvement - and how these variables are related to emotional reactions to film. The study examines reactions to both negatively and positively charged film. The stimuli used in this study were clips taken from the movie <u>If You Could See</u> <u>What I Hear</u>, a story about a blind man. Of secondary interest in this study is the way such reactions impact related attitudes, in this case attitudes toward blindness, and altruistic behavior such as volunteering to help the blind.

#### Conceptualizing Empathy

Throughout its history, empathy has been defined in a variety of ways. Some conceptualizations have been primarily cognitive, while others have been affective. More recent conceptualizations have included both affective and cognitive dimensions. All definitions of empathy are in some way concerned with an individual's reaction to the observed experience of another.

Early definitions suggested that empathy was a

reflexive response to another's emotions. Lipps (1906), for example, suggested that individuals automatically imitate observed others with slight movements in posture and facial expression. This motor mimicry, through afferent feedback, was said to contribute to the understanding and experiencing of the other's emotions. Similarly, McDougall (1908) described empathy as a "primitive process of emotional contagion."

Similar ideas have been incorporated into Zillmann's (in press) three-factor theory of empathetic joy and distress. According to this model, emotional behavior is the result of interaction between three behavior-controlling forces: dispositional, excitatory and experiential. The dispositional component involves immediate motor reactions to stimuli which are not cognitively mediated. In the case of empathy, the stimuli are the observed or anticipated emotional experiences of another. Empathic responses at the dispositional level generally involve motor mimicry which can be reflexive or conditioned. The excitatory component refers to heightened activity in the sympathetic nervous system which prepares the individual to react but does not determine goal specific behaviors. This also occurs without cognitive mediation. The final component - the experiential factor - refers to the

individual's conscious experience of the first two components which fosters appraisal of the situation. Thus, the experiential component can serve a corrective function. At the experiential level, the individual is cognitively aware of his or her experiences and monitors them for social and moral appropriateness. If a reaction is deemed appropriate it is allowed to unfold; if deemed inappropriate, it can be suppressed or redirected.

Stotland (1969) defines empathy as an observer's emotional reaction in response to the perception or anticipation of another's emotional experience. Unlike most conceptualizations of empathy, this definition allows for any type of emotion in response to another. In a discussion based on this definition, Stotland, Mathews, Sherman, Hansson and Richardson (1978) distinguish between simple and contrast empathy. Simple empathy occurs when the observer's response is valently consistent with that of the person being observed. For example, a waiter who observes a co-worker spill soup on a patron may feel embarrassment or concern for the coworker. Such a reaction would be concordant with that of the observed. Contrast empathy, on the other hand, is a discordant response to another. So, if the waiter dislikes his co-worker he might feel a sense of

satisfaction at witnessing the soup mishap. Such a response would constitute contrast empathy as it is valently opposite of the other's response.

Other conceptualizations of empathy have focused primarily on a cognitive understanding of the emotions of others. Mead (1934) described empathy as a process in which one arouses in him or herself the attitude of another. From Mead's perspective, empathy springs from an individual's capacity to role take. According to him, to empathize with another means to take his or her attitude toward and role in the given situation, and thus respond implicitly as the one observed does or is about to do explicitly. This process involves taking the perspective of another and using that perspective to make predictions about the type of response the other would find desirable.

Piaget (1932) conceived of empathy as a kind of social cognition, a mature, nonegocentric stage of cognitive development which involves role-taking skills and the understanding of complex social situations. Along similar lines, others (e.g. Dymond, 1949; Rogers, 1957) have operationally defined empathy as accuracy in predicting the thoughts, feelings, and behaviors of others.

Rogers (1957) has suggested that empathy is one of

several conditions necessary for therapeutic personality change. According to him, an effective therapist must be able to sense the client's private world as if were his or her own "but without ever losing the 'as if' quality" (p.99). Rogers has recommended a sorting task to operationalize empathy. Specifically, therapist and client independently sort a list of items describing the client's feelings following a session. The correlation between the sortings represents the therapist's degree of empathy.

Dymond (1949) defines empathy as the imaginative transposition of oneself into the thinking, feeling, and acting of another and so structuring the world as the other does. From this definition, Dymond operationalized empathy as the extent to which a person accurately predicted another's response on several rating scales. Subjects first rated themselves on six characteristics (self-confidence, superiority, selfishness, friendliness, leadership, sense of humor) using six five-point scales. Subjects then rated another person on the same six characteristics. Next, the subjects rated the other as he or she (the subject) believed that other person would rate him or herself. Finally, the subject rated him or herself as he or she believed the other would. Empathy scores were based on

the correspondence between a subject's predictions about the other's ratings and that person's actual ratings. The greater the accuracy of predictions, the more empathy an individual was said to have.

Such predictive approaches have been criticized on several grounds. Stotland (1969) notes that predictive ability is not necessarily empathy because it does not require the observer to experience the emotion he or she observes. Citing Cronbach (1955), he argues that accurate prediction of another's response to a personality inventory or attitude scale may result from shared response biases, knowledge of what the other person is like, or simply being the same type of person.

Most current researchers have adopted a multidimensional approach to empathy which includes both affective and cognitive dimensions. Feshbach (1975), for example, has argued that purely cognitive approaches to empathy are limited because they fail to consider the widely recognized affective qualities of empathy. She defines empathy as an affective match between an observer and the observed and proposes a three component model to explain the process by which it results.

The first two components are cognitive in nature and involve the ability of an individual to discriminate

the perspective and role of another. According to Feshbach, this second component (role discrimination) represents a more advanced level of cognitive competence. The third component of the model is emotional capacity and responsiveness.

In discussing the relationship between these three components, Feshbach notes that the experience of empathy requires some cognitive social understanding, though the reverse is not true. What Feshbach emphasizes as essential in her conceptualization is the affective component. While one can cognitively understand the emotional experiences of another, this alone does not constitute empathy. Empathy, in her view, requires the affective experience as well.

Feshbach has used the Affective Situation Test (Feshbach & Roe, 1969) in her work to measure empathy in children. Children were individually exposed to a series of slides depicting another child in various affective situations such as a having a birthday party, being lost, experiencing social rejection, and being wrongly accused. After each affective sequence, the child was asked how he or she felt. Empathy was measured by the degree of affective match between the child and the observed child. Children's comprehension of each slide sequence was also measured by asking them

how the child in the slides felt.

Coke, et al. (1978) adopt a conceptual position similar to that of Feshbach in the formulation of their two-stage model of empathic mediation of helping. They suggest that both cognitive and affective elements of empathy mediate altruistic behavior. Specifically, they argue that taking the perspective of one in need leads to an increased empathic emotional response which in They turn increases the observer's motivation to help. have operationalized perspective taking by giving subjects directions to either imagine the condition of a particular person in need (high perspective taking) or to pay attention to the technical characteristics of the message (low perspective taking). Emotional empathy was manipulated using an arousal misattribution technique in one experiment and a false feedback of arousal technique in another. A similar misattribution technique was used by Batson, et al. (1981).

Like Feshbach (1975) and Coke, et al. (1978), Hoffman's (1977) conceptualization of empathy is multidimensional. Hoffman defines empathy in terms of the arousal of affect in an individual that is a vicarious response to another. Hoffmann's conceptualization focuses on the process by which this vicarious affect arousal occurs. The process he

proposes consists of an affective, cognitive, and motivational component. Initially, an individual experiences empathic arousal which can be the result of reflexes, conditioned responses, motor mimicry, or imagination of what an experience is like. This initial arousal is the affective component of Hoffman's conceptualization.

The cognitive element of Hoffman's model is concerned with an individual's ability to understand the source of his or her arousal (i.e. the experience of another) as well as some understanding of the other's affective response. This ability, and consequently the way individuals experience empathy, depends on their level of cognitive development. Hoffmann argues that initial empathic responses are parallel to those of the observed, but for mature empathizers these responses are transformed at least in part to feelings of concern. Finally, Hoffmann argues that empathy is a motivational force for prosocial behavior.

While there are some differences among these various multidimensional conceptualizations of empathy, there are a number of points on which most researchers concur. Most agree, for example, that perspective taking is one key dimension of empathy. Perspective taking can be defined as the ability of an individual to

see things from the viewpoint of another (Coke, et al., 1978; Davis, 1983; Deutsch & Madle, 1975; Dymond, 1949; Feshbach, 1975; Krebs, 1975; Mead, 1934; Piaget, 1932). Perspective taking is a cognitive dimension of empathy.

In addition to the perspective taking dimension, most current conceptualizations of empathy also include an affective dimension which will be referred to here as empathic concern. Empathic concern can be defined as a general concern and appreciation for the well being of others (Stiff, et al, 1988). This dimension has been given a variety of labels in the literature - humanistic orientation (Dillard & Hunter, 1987), sympathetic arousal (Hoffman, 1977), altruistic motivation (Coke, et al, 1978), and sympathy (Bennett, 1979). Whatever label is employed, this dimension refers to an individual's emotional sensitivity.

Like most current definitions, the conceptualization of empathy adopted for this work is multidimensional and includes both cognitive and affective elements. Perspective taking is recognized as an important element of empathic responses and, consequently, is a key variable in this study. Consistent with the conceptualization of Feshbach (1975), it is also recognized that empathy requires

some kind of emotional response. Such an affective response may take the form of empathic concern as discussed earlier. In addition to feeling concern, an individual might experience emotions parallel to those of the observed. Thus, a second affective dimension of interest in this work is emotional contagion.

Emotional contagion refers to the adoption of the same emotions as those of the observed person (Coke, et al., 1978; Davis, 1980, 1983; Deutsch & Madle, 1975; Feshbach, 1975; Stotland, 1969). Contrast this with empathic concern. Suppose, for example, that my best friend's dog dies. I may experience empathic concern, in which case I am concerned or worried about my friend, but not experiencing the same emotions. If I experience emotional contagion, my reaction will be the same as his. So rather than experiencing concern, I may experience loss, depression, emptiness, loneliness, and so forth.

A fourth dimension not considered necessary for the empathic experience but relevant to this work is fictional involvement. Fictional involvement refers to the transportation of oneself by imagination into the feelings and actions of fictitious characters. This dimension is derived from the work of Stotland, et al. (1978), which involves the development and validation

of a measuring instrument they call the fantasy-empathy scale. Stotland and Canon (1972) have explained the phenomenon of fictional involvement using a social schema theory. They suggest that individuals develop schemata about the techniques of observing or imitating other people. They suggest that role playing in fantasy is a good source of information for developing these social schemata. Furthermore, such role playing exercises may result in self-instruction in role taking and experiencing the emotions of others. Thus, fantasy can serve as a means of developing empathic skills.

Stotland, et al. (1978) suggest that the imaginative self-involvement of the observer is a basic element in the process of empathy. Fictional involvement has both cognitive and affective elements as it involves both imagination and the adoption of feelings. While such a dimension may seem to be redundant with other dimensions of empathy, the fictional context is an important distinction. People who respond empathically (either cognitively or affectively) to real people would not necessarily be expected to respond the same way to fictional characters. The knowledge that an observed event is fictitious and thus has no real consequences may prevent elicitation of an empathic response. Thus,

fictional involvement is something more than perspective taking, empathic concern or emotional contagion. It is an extension of such experiences into fictional contexts.

This thesis addresses the relationships among these four dimensions of empathy and how they affect emotional reactions to filmed stimuli, relevant attitudes, and helping behavior.

#### Empathic Reactions to Mediated Stimuli

Tamborini, Mettler, Heidel & Choi (1988) have noted that much of the work on empathic reactions to media stimuli has focused on individuals' responses to negative stimuli such as graphic horror (Tamborini, Stiff, & Heidel, 1987; Tamborini & Mulcrone, 1987) and other fear arousing content (Wilson & Cantor, 1985). In their study, they examined empathic responses to both negative and positive media stimuli. Subjects first completed measures of seven dimensions of empathy. Several weeks later they were exposed to one of two film clips. Both clips centered on the experiences of a blind man, one clip featuring positive experiences the other featuring negative experiences. After viewing, subjects completed measures of emotional reactions to the film, attitudes about blindness and willingness to donate money and volunteer to help the

blind.

They found subjects who scored high on the fictional involvement dimension of empathy were more upset in the negative condition than subjects who scored low on fictional involvement. They also found that fictional involvement was a better predictor of related attitudes in the negative condition than in the positive condition. Subjects scoring high on fictional involvement also reported greater enjoyment of the film regardless of which condition they were in.

This work extends their study, using the same data. The current research differs from the Tamborini, et al. (1988) study primarily in two ways. First, the initial study tested dimensions of empathy as individual and direct predictors of emotional reactions, attitudes, and volunteering behavior. The current study examines how dimensions of empathy interrelate to impact empathic reactions to film and relevant attitudes and behaviors, rather than testing them as separate independent variables. Second, these relationships are tested using path analysis techniques, whereas the initial study used regression and analysis of variance techniques.

A model of empathic reactions to filmed stimuli is proposed to deal with both negative and positive

stimuli. The model is presented in Figure 1. In this model perspective taking and emotional contagion are predictors of empathic concern. Perspective taking and empathic concern are predictors of fictional involvement. Each of these paths is positive such that the higher an individual on one dimension the higher he or she will be on the other. Emotional contagion and fictional involvement are predictors of concordant reactions to the film such that in the positive condition the higher an individual on these two dimensions the more positive his or her reaction will be. Likewise, in the negative condition, the higher the individual on these two dimensions the more negative his or her reaction will be.

### Perspective Taking to Empathic Concern

The first path proposed in this model is one linking perspective taking and empathic concern. There seems to be little question that the perspective taking and empathic concern dimensions of empathy are related. The more important issue is the nature of this relationship, particularly its direction. It seems reasonable to suggest that perspective taking does not require empathic concern. A person may be very capable of understanding the position of another yet not feel particularly concerned about it. For example, while





driving to work I may observe someone who has been pulled over and be able to imagine how that person feels (angry, embarrassed, nervous) though I may not really care. Furthermore, it makes little sense to suggest that empathic concern would precede perspective taking. Suppose I do feel concerned about the other driver. It seems unlikely that my first response would be concern, followed by perspective taking. Rather, concern for the driver should arise as a result of cognitively considering the experiences of the driver.

Thus, it does seem reasonable to suggest that perspective taking ability is a precursor to empathic concern. To feel concern about the plight of another, one must first understand that person's situation. In other words, cognitive understanding must precede an affective response of concern. This argument parallels that offered by proponents of the primacy of cognition. As Lazarus (1984) writes, "Cognitive activity is a necessary precondition of emotion because to experience an emotion, people must comprehend - whether in the form of primitive evaluation perception or a highly differentiated symbolic process - that their well-being is implicated in a transaction, for better or worse." There is, of course, debate over this argument (e.g. Zajonc, 1980, 1984), and it may be the case that

cognition is not required for all emotions. Yet in the case of empathic concern, it makes sense to suggest that for one to be concerned for another, he or she must first have some cognitive understanding that the other is in a situation which calls for concern.

The perspective taking - empathic concern link has received support in the literature. Various empathy researchers have suggested that taking another's perspective should increase the intensity of empathic emotion (e.g. Krebs, 1975; Stotland, 1969). Likewise, Feshbach (1975) has argued that empathy presupposes some degree of social understanding. Others have demonstrated empirical support for this link. Work by Coke, et al. (1978) is consistent with the notion that perspective taking increases empathic emotion. Similarly, Stiff, et al. (1988) found a significant link between perspective taking and empathic concern in testing altruistic and egoistic models of social behavior.

Thus, the path proposed between perspective taking and empathic concern is positive; perspective taking ability increases empathic concern. These variables have been measured as personality traits rather than emotional states and as such should be related in such a way independent of the context in which the empathic

response occurs. Thus, this relationship should be observed in both the negative and positive conditions under which the model will be tested.

#### Perspective Taking to Fictional Involvement

The ability of an individual to adopt the perspective of another seems to be essential for that individual to be able to put themselves in the place of a fictional character. To a large extent, fictional involvement is perspective taking in fictional settings. The ability to adopt the perspective of a fictional character should depend on that person's ability to take another's perspective in general. Thus, a positive path is proposed between perspective taking and fictional involvement. As in the case of the perspective taking empathic concern link, this link will be the same for both models.

#### Empathic Concern to Fictional Involvement

As perspective taking is a cognitive precursor to fictional involvement, empathic concern may function as an affective precursor. The tendency to feel concerned about or happy for fictional characters would imply that an individual first has a tendency to react that way to people in general. Not all individuals who respond empathically to others may be expected to respond that way to fictional characters. But those individuals who do tend to respond empathically toward fictional characters would be expected to respond that way toward others in general. In other words, empathic concern may be necessary though not sufficient for fictional involvement. The tendency to feel concern about others in general could increase the observer's attention to and involvement with filmed stimuli depicting emotional responses, which in turn could trigger the imaginative process of fictional involvement. Thus, the affective component of fictional involvement can be thought of as empathic concern for fictional characters.

## Fictional Involvement to Concordant Emotional Reaction

As empathic concern impacts the way people respond to the experiences of others, so should fictional involvement affect the way people respond to the experiences of fictional characters. An imaginative process such as fictional involvement suggests that an individual who becomes imaginatively engrossed in the experiences of others would have a strong emotional reaction when observing the emotionally charged experiences of a fictional character. Whether it is because of an increased ability to understand the situation the other is experiencing, or a sense of how it would feel if these events were to happen to the observer, this individual should experience reactions

concordant with those being witnessed. If the observed event is a happy one, the individual's imaginative involvement should lead to feelings of joy. If the observed event is a tragic one, the individual should experience sorrow (Tamborini, et al., 1988).

The path proposed between fictional involvement and concordant affective reaction to the film is positive. For positive media stimuli, the greater an individual's fictional involvement, the more positive his or her affective reaction to the film will be. In other words, a person high in fictional involvement will have strong positive emotional reactions to the observation of a happy event. For negative stimuli, the greater an individual's fictional involvement the more negative his or her reaction will be to the observation of an unpleasant filmed event.

### Emotional Contagion to Concordant Emotional Reaction

A second variable proposed to have a direct impact on emotional response to film is emotional contagion. Emotional contagion is thought to function in two ways in these models: a) directly impacting emotional reactions through reflexive mechanisms and b) indirectly impacting reactions through its influence on empathic concern. First, it is thought to function initially in a reflexive manner. Zillmann (in press) discusses the work of several researchers who have adopted reflexive approaches to empathy. McDougall (1908), for example, proposed that individuals have an innate response disposition (which he refers to as "primitive passive sympathy") that drives the individual to experience the emotions of observed others. Lipps' (1906) work dealt with motor mimicry. He proposed that individuals mimic the postural and gestural expressions of others. Afferent feedback from this mimicry liberates empathic affect.

Zillmann's (in press) three-factor theory of empathetic joy and distress also incorporates a reflexive component. According to this theory, emotional behavior results from the interaction of three forces: dispositional, excitatory, and experiential. In the case of empathy, the dispositional factor is comprised of reflexive and learned (conditioned) skeletal-motor reactions that result from observation of the emotional behavior (manifest or anticipated) of another. The emotional contagion dimension may represent such a reflexive reaction. Emotional contagion is the tendency to experience immediate, parallel reactions without prior cognition. The person experiencing such an emotional reflex will not make any immediate distinction between real people and fictional

characters. So, emotional contagion should have a direct impact on emotional reactions to filmed stimuli, rather than being mediated by fictional involvement.

As in the case of fictional involvement, the sign of this path is positive. The observation of positive affect should result in strong positive emotional reactions on the part of those high in emotional contagion. For negative events, the greater an individual's emotional contagion, the more negative his or her emotional reaction to the stimulus will be.

It is important to contrast the relationship between emotional contagion and emotional reaction with the relationship between empathic concern and emotional reaction to films. No direct path is hypothesized between these two variables. People high on empathic concern would not necessarily be expected to have strong emotional reactions to filmed stimuli. People may experience empathic concern in response to the experiences of real people yet not those of fictional characters. That is not to say, however, that empathic concern has no impact on emotional reactions to film. Rather, we would expect that people high on empathic concern will have strong emotional reactions to the extent that they get caught up in the film. In other words, the impact of empathic concern on emotional
reactions will be mediated by fictional involvement. Emotional Contagion to Empathic Concern

A second way emotional contagion is thought to function is through its impact on empathic concern. Hoffman's (1978) review of empathy research suggests that empathy is developmental in nature. In early stages of development, children experience empathy-like reactions which are fixed and involuntary. As further development occurs, cognition begins to play an increasingly more important role in empathy until the individual not only learns but comes to actively mediate empathic responses. Through the course of empathic development, the individual acquires the capacity to label empathic reactions and attribute them to his or her observations of others. Thus, while there may be some initial reflexive reaction, there is also expected to be an understanding of the source of arousal. Once the observer understands that the source of his or her emotional experience is the observed experience of another, the observer may experience empathic concern for that observed other.

For example, while observing a visibly nervous person give a presentation, an individual may experience the same kind of nervousness. He or she may feel tense, uncomfortable, and even share certain physiological

responses like sweating or a jittery stomach. He or she may feel anxious for the presentation to come to an end, and relieved when it finally does. These reactions are emotional contagion. In addition, the observer may become very well aware that this response is due to the nervousness of the presenter. This understanding of the presenter's experiences may lead the observer not only to feel nervous but also concerned about the presenter.

Thus, a path is proposed from emotional contagion to empathic concern, and by this path emotional contagion is thought to function indirectly to impact fictional involvement and emotional reactions. This path is positive such that increased emotional contagion will lead to increased empathic concern. Again, because these are trait rather than state measures, this relationship is independent of the nature of the filmed stimuli to which individuals are exposed.

## An Extended Model

While this model of empathic reactions to film is the primary focus of this study, the model can be extended to explain not only emotional reactions but relevant attitudes and behaviors. Attitude has been defined in a number of ways. The conceptualization that will be adopted for this work is that offered by Fishbein and Ajzen (1975). They suggest that attitudes

are the interaction of our beliefs about something and our evaluation of those beliefs. The behaviors of interest in this study are altruistic behaviors. Altruism has been defined as behavior performed with the intent of benefiting another (Coke, et al., 1981).

This extended model is presented in Figure 2. In this extended model, emotional reaction to the film is a predictor of relevant attitudes. Emotional reactions may serve to strengthen related attitudes. These attitudes, in turn, may lead to attitude consistent behaviors, in this case volunteering behavior. Empathic concern is also a proposed predictor of attitudes and volunteering behavior.

## Emotional Reaction to Attitudes

The nature of an individual's emotional reactions to media stimuli is hypothesized to have some impact on his or her attitudes about the relevant content. Given that attitudes may be fairly stable, we would not necessarily expect emotional reactions to have a strong impact on attitudes. This may very well be the case for this particular study. The film used in this study deals with the experiences of a blind man and the attitudes of interest are attitudes toward blindness. It seems likely that most people have very negative attitudes about blindness and that those attitudes are



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Figure 2 Extended Model of Empathic Reactions, Attitudes and Volunteering Behavior

very stable. Given that fairly stable attitudes about blindness may exist in subjects prior to exposure, we would not necessarily expect to see emotional reactions to the film have a strong impact on these attitudes.

Nevertheless, several issues are worth mentioning here. While there may be no significant attitude change, emotional reactions may make attitudes more salient. By virtue of observing events related to the attitude, the attitude may temporarily become more salient. While most of us have attitudes about blindness, we may not think about them much. Observation of the experiences of a blind man, however, could bring those attitudes to our attention, making them more salient than they would be otherwise. The salience of attitudes is one factor that has been hypothesized to increase attitude-behavior consistency (Fazio, 1986). In this case, emotional reactions may not be particularly significant in terms of attitude change, but they may be important in increasing the salience of relevant attitudes and consequently the likelihood of helping behavior. Therefore, a path is proposed between emotional reactions and attitudes toward blindness such that the more positive an individual's reaction to the stimulus, the less negative his or her attitudes toward blindness will be.

#### Empathic Concern to Attitudes

In addition to the impact of emotional reactions to filmed stimuli on relevant attitudes, empathic traits are also expected to affect attitudes. Two variables expected to be related to attitudes are empathic concern and perspective taking. People will already hold some attitude toward blindness before exposure to the stimulus material, but where did these attitudes come from? In cases where individuals have no direct experience with blindness, it is reasonable to suggest that these attitudes were formed at least in part from an individual's ability to imagine what it must be like to be blind. Thus, we would expect perspective taking to have some impact on individual's attitudes about blindness. Similarly, we would expect empathic concern to have some impact on these attitudes. Not only do we imagine all the things we could not do if we lost our sight, we evaluate those losses. So, not only would I not be able to read or play tennis, I would be unhappy and frustrated about it.

Thus, by engaging in such imaginative processes, individuals may come to believe that blindness causes suffering. This belief that blind people suffer could, in turn, lead to feelings of concern which impact attitudes. If we adopt the popular conceptualization of

attitudes as beliefs about an object (in this case blindness) and evaluations of those beliefs (Fishbein & Ajzen, 1975), we can see that beliefs about blindness may result in part from perspective taking and evaluations in part from empathic concern. Therefore, a positive path from empathic concern to negative attitudes about blindness is proposed, such that the greater an individual's empathic concern, the more negative his or her attitudes toward blindness will be. The impact of perspective taking on attitudes is proposed to be indirect, operating through empathic concern; as perspective taking increases empathic concern increases and attitudes toward blindness become more negative. Thus, no direct path from perspective taking to attitudes is proposed as perspective taking is hypothesized to operate through empathic concern to affect attitudes.

#### Empathic Concern to Volunteering Behavior

In addition to affecting attitudes toward blindness, empathic concern is hypothesized to have a direct effect on helping behavior. Empathy has been studied by numerous researchers as an antecedent to altruistic behavior (e.g. Batson, et al., 1981; Coke, et al., 1978; Krebs, 1975). It has been suggested that observing the distress of another produces vicarious

physiological arousal. If the observer labels this arousal as a response to another's situation, the result will be empathy (Schachter, 1964; Stotland, 1969). There has been some debate, however, over whether motivation to help is driven by a need to reduce another's distress (the altruistic model of helping behavior) or a need to reduce one's own distress (the egoistic model).

Stiff, et al. (1988) tested an altruistic, an egoistic, and a dualistic model of helping behavior. In the altruistic model, helping behavior was posited to be driven by empathic concern, while in the egoistic model it was driven by emotional contagion. In the dualistic model, both empathic concern and emotional contagion were hypothesized antecedents to helping behavior. In their first study, they found significant paths between empathic concern and communicative responsiveness and empathic concern and volunteering behavior. Emotional contagion was found to be negatively related to communicative responsiveness and unrelated to volunteering behavior. The negative relationship between emotional contagion and communicative responsiveness suggests that people who are strongly susceptible to the feelings of others may become so emotionally involved in a situation that they are unable to help. Stiff, et al. (1988) found similar results in a replication to test their revised model. Results of these studies are consistent with an altruistic explanation for prosocial behavior in which empathic concern is a motivation for helping behavior.

In light of these findings, the model under investigation in this study includes a path from empathic concern to helping behavior. This path is positive such that the greater an individual's empathic concern, the more likely he or she is to engage in altruistic behaviors. It is important to note that this path is direct rather than mediated by fictional involvement. If an individual is naturally concerned about the well-being of others, he or she should not require a filmed stimulus to prompt altruistic behavior, although a media stimulus may make a particular issue more salient for the observer. Because this is a direct path (i.e. independent of exposure to filmed stimuli) the direction is hypothesized to be the same under both the positive and negative conditions.

#### Attitudes to Volunteering Behavior

Finally, a direct path is proposed between attitudes toward blindness and volunteering behavior. The attitude-behavior link has been one of the most questioned phenomena in persuasion research. Early

definitions of attitude were based on the assumption that the attitude-behavior link existed (e.g. Allport, 1935). Others questioned this assumption and set out to test it. In the classic study by La Piere (1934), no significant relationship was found between attitudes about Chinese people and willingness to accommodate them in restaurants and hotels. While this study has been criticized methodologically, it was an important catalyst for investigation of the attitude-behavior relationship.Others have found results similar to those of La Piere. Cory (1937), for example, failed to demonstrate attitude-behavior consistency with regard to cheating on examinations. Findings such as these led some to question the usefulness of the attitude construct and to suggest its abandonment (e.g. Wicker, 1971).

More recently, persuasion scholars have investigated the conditions under which attitudes accurately predict behavior. Some of this work has focused on measurement issues. Several researchers have noted that to demonstrate attitude-behavior consistency both must be measured at the same level of specificity (Davidson & Jaccard, 1979; Liska, 1974). Other researchers have focused on factors mediating the attitude-behavior relationship. This work has included

investigation of method of attitude acquisition (Fazio & Zanna, 1981), method of attitude relevant information processing (Kelman, 1961; Petty & Cacioppo, 1986), attitude accessibility (Fazio, 1986), and ability to perform relevant behaviors (Ajzen, 1986). This body of research provides strong support for the attitude-behavior link, and such a link is proposed for the model under investigation here. Specifically, the more negative an individual's attitude toward blindness, the more likely he or she is to volunteer.

These models can be summarized as follows. Perspective taking impacts emotional responses to the film clips through its relationship to fictional involvement. When the stimulus is positive, fictional involvement will increase positive reactions to the film. When it is negative, emotional responses will also be more negative. These emotional responses, in turn will affect attitudes and subsequently behavior. Perspective taking is also proposed to increase empathic concern which in turn increases fictional involvement. Empathic concern has direct links to both attitudes and behavior such that the higher individuals are on this dimension, the more negative their attitudes toward blindness and the more willing they will be to volunteer. Emotional contagion is suggested to increase empathic concern and also have a direct effect on emotional reactions to the film. In the positive condition, emotional contagion will lead to more positive reactions, while in the negative condition, it will lead to more negative reactions.

#### Chapter 2: Methodology

### Subjects

There were 142 participants in the study, 62 males and 79 females. One subject did not report gender. Seventy eight subjects were assigned to the positive film condition, and 64 were assigned to the negative condition. Subjects were selected from undergraduates enrolled in the introductory communication course at Michigan State University, and they participated in the study for extra credit. Prior to participation, each subject signed an informed consent form.

#### Procedure

The data used in this study were collected as part of a larger study. The full study involved three phases of data collection. In the first phase, participants completed a questionnaire designed to measure nine dimensions of empathy: perspective taking, empathic concern, emotional contagion, fictional involvement, personal distress, humanistic orientation, wandering imagination, emotional responsiveness, and communicative responsiveness. Only four of these dimensions were included in the current investigation: empathic concern,

perspective taking, emotional contagion, and fictional involvement. Given that the humanistic orientation, emotional responsiveness, and personal distress dimensions are very similar to the empathic concern and emotional contagion dimensions, they were not included in this study. It was felt that the inclusion of these variables compromises the model's parsimony while adding little to it conceptually. Likewise, the wandering imagination dimension was excluded because it seemed to add little to the cognitive elements of the model already addressed by the perspective taking and fictional involvement dimensions. The communicative responsiveness dimension deals with an individual's perception of his or her ability to respond appropriately to others. Given that this is an interpersonal skill and the current investigation is concerned with mediated contexts, this dimension seemed irrelevant and was therefore not included in the study.

Several weeks following completion of the questionnaire, subjects received one of three experimental treatments. In each condition, subjects were asked to perform two tasks. The first task involved finding a block of a given shape on a table full of blocks. The second task involved shooting baskets with a Nerf basketball set. In two of the

conditions, subjects performed the tasks while blindfolded. Some subjects received positive feedback while others received negative feedback. Subjects in the third condition were not blindfolded and received no feedback. Following task completion, subjects filled out a questionnaire designed to assess their moods and feelings about the tasks.

The 38 subjects who participated in this phase of data collection were not included in the current investigation. The purpose of this investigation is to determine the impact of various dimensions of empathy on emotional responses to filmed stimuli. Participation in the second phase of the study could affect subjects' reactions to the film clips and would thus contaminate the data for the purposes of this study. Thus, 142 of the original 180 subjects were used in this study.

Approximately seven weeks after administration of the empathy questionnaire, subjects viewed a film clip with either positive or negative emotional connotations. Viewing took place following regular class meetings. After viewing the film clips, subjects completed a questionnaire measuring their emotional reactions to the film, their attitudes toward blindness, and their willingness to donate money or do volunteer work for the blind. Subjects were also asked whether they had seen the film before. This question was used to determine if having seen the film before would affect subjects' reactions to the clips.

#### Stimulus Materials

A full length movie (<u>Can You See What I Hear?</u>) was edited to create two clips, one positive and one negative. Both clips revolve around the experiences of a blind man. In the negative clip, the man has been left with the care of a young child. He is sitting at the side of a pool and gets up to answer the telephone. While he is on the phone, the child falls into the pool. The man discovers what has happened and begins searching the pool for the child. After a lengthy and alarming search, he finds the child and attempts to revive her. The clip ends with the man's attempt to revive the child; subjects are not shown whether he is successful or not.

The positive clip combines several pleasant scenes from the movie including romantic moments between the man and his girlfriend, a family dinner, and a golf game in which the man demonstrates more skill than his sighted opponents. Each clip was approximately seven minutes and 30 seconds in length.

#### **Empathy Measures**

Several weeks prior to exposure the film clip, subjects completed a five point, 58 item Likert scale designed to measure nine dimensions of empathy. These dimensions were: empathic concern, perspective taking, emotional contagion, fictional involvement, personal distress, humanistic orientation, wandering imagination, emotional responsiveness, and communicative responsiveness. Only the first four of these dimensions were used in this study. Items for the empathic concern scale were selected from measures developed by Davis (1983), Stiff (1984), and Tamborini, et al. (1987). The items measuring emotional contagion were chosen from the work of Stiff (1984). Items on the fictional involvement scale were developed by Davis (1983), Stotland (1978), and Tamborini, et al. (1987). The perspective taking items were from the work of Davis (1983). Scores were calculated for each subject by averaging their responses to each item for a given dimension. Confirmatory factor analyses were conducted on scales for the four dimensions used in this study. Dependent Measures

After exposure to the film clips, subjects completed a three part questionnaire to measure their emotional reactions to the film clips, attitudes toward

blindness, and willingness to do volunteer work for the blind. Confirmatory factor analyses were conducted on each of these measures. Emotional reactions to the film were measured with a seven point, twelve item semantic differential. Subjects' scores were calculated by averaging their responses on each item. Attitudes toward blindness were measured with a five point, ten item Likert scale. Scores on this measure were also calculated by averaging responses to individual items. Volunteering behavior was measured by the total number of hours subjects reported they were willing to spend doing various services for the blind. These included such services as reading to the blind, training seeingeye dogs, and leading a sports program for blind children. Subjects were also asked how much money they would be willing to donate to help the blind, but this variable was not included in the current study. То maintain model parsimony, only one volunteering variable was desired. Because the donation item is not conceptually the same as the volunteering items, it was not included in this scale. Volunteering was chosen over donating as a measure of helping behavior because this may be a better indicator of helping behavior for these subjects. College students may have little money to donate even if they are willing to do so.

Volunteering a few hours a week for some activity, however, may be more feasible.

#### Analyses

Confirmatory factor analyses were conducted using a subroutine of PACKAGE (Hunter & Lim, 1987) on the empathic concern, emotional contagion, perspective taking, and fictional involvement dimensions of empathy, emotional reactions to the film clips, attitudes toward blindness, and volunteering behavior scales.

Several significance tests were performed. Emotional reactions in the positive and negative conditions were compared using a t-test to determine if there was a significant difference on the emotional reaction variable for subjects in the two conditions. This test was conducted as a manipulation check. Emotional reactions were also compared between subjects who had and had not seen the film prior to this study. A number of subjects reported having seen the film used in this study before and there was concern that prior exposure to the stimulus material could affect the outcome of the study. Therefore, a t-test was conducted to determine if there was any significant difference in reactions to the film between subjects who had and had not see the movie prior to the experiment. Finally, significance tests were conducted to determine if

subjects in the two conditions were equal on the empathy scales at the beginning of the study to check for selection threats to internal validity, as subjects were not randomly assigned to the film conditions. Random assignment was not used because viewing of the film clips immediately followed regular class meetings of the subjects. Thus, subjects were not individually assigned to groups.

Finally, path analyses were conducted using a subroutine of PACKAGE (Hunter & Lim, 1987) on the models proposed in this study. Models were tested in both the negative and positive conditions.

#### Chapter 3: Results

#### Factor Analyses

Confirmatory factor analyses were conducted on four dimensions of the empathy scale (perspective taking, empathic concern, emotional contagion, and fictional involvement), and scales for emotional reactions to the film, attitudes toward blindness, and volunteering behavior. Using a subroutine of PACKAGE (Hunter & Lim, 1987), Cronbach's alpha was calculated for each scale. Scale validity was assessed using the internal consistency and parallelism criteria suggested by Hunter (1980).

According to these criteria, for a scale to be internally consistent it must meet the Spearman and flatness conditions. The Spearman condition requires that the correlation between any two items on a scale equal the product of their factor loadings. Expected correlations are subtracted from observed correlations. To the extent that deviations are within sampling error, a scale is said to meet the Spearman condition of internal consistency.

The flatness condition requires that correlations

between scale items are equal within sampling error. As in the case of the Spearman test, expected correlations are subtracted from observed correlations. It should be noted that differential item strength can cause significant deviations in flatness tests, thus it is also important to examine item communalities.

In addition to internal consistency, a valid scale requires parallelism. In other words, items on the scale should relate the same way to outside variables. Parallelism was assessed by correlating the perspective taking, emotional contagion, fictional involvement, attitudes toward blindness and volunteering scales with the emotional reaction scale. The empathic concern scale was tested for parallelism by correlating it with the volunteering scale. The volunteering scale was used because the correlation matrix with the emotional reaction scale was too large to be read into the parallelism routine of PACKAGE. As with the internal consistency test, the deviation matrix between the observed and expected matrices is inspected for significant deviations.

The items and factor loadings and internal consistency tests for the original perspective taking scale are presented in Tables 1-3. One item was dropped from this scale because it has a low factor

Alpha = .79	Loading
Before criticizing someone, I try to imagine how I would feel if I were in their place.	.67
If I'm sure I'm right about something I don't waste much time listening to other people's arguments.	.55
I sometimes try to understand my friends better by imagining how things look from their perspective.	.63
I believe that there are two sides to every question and I try to look at them both.	.67
I sometimes find it difficult to see things from the other person's point of view.	.46
I try to look at everybody's side of a disagreement before I make a decision.	.75
When I'm upset at someone I usually try to "put myself in his or her shoes" for a while.	.60
It is hard for me to see how some things upset people so much. *	.18

Table 1 Items, Factor Loadings, and Reliability for Initial Perspective Taking Scale

\* items dropped from initial scale

.00							
07	.00						
.08	06	.00					
04	.02	.07	.00				
08	.01	03	.01	.00			
03	03	.04	.11	.05	.00		
.07	.04	01	06	07	02	.00	
.08	.09	08	12	.11	11	.04	.00
•••••••							
*: 5	ignific	cantly o	leviates	from	mean r a	t p=.05	
**: s	ignific	cantly o	deviates	from	mean r a	t p=.01	
Table	3 Flat	tness To	est Resi	dual M	atrix an	d Rank (	Drdered
	Com	nunalit	ies for	Initia	l Perspe	ctive Ta	aking
	Sca]	le					
~ ~							
.00							
.00 01	.00						
.00 01 .19*	.00 02	.00					
.00 01 .19* .10	.00 02 .08	.00 .18*	.00				
.00 01 .19* .10 08	.00 02 .08 05	.00 .18* 05	.00	.00			
.00 01 .19* .10 08 .16*	.00 02 .08 05 .07	.00 .18* 05 .20*	.00 .01 .30**	.00 .09	.00		
.00 01 .19* .10 08 .16* .16*	.00 02 .08 05 .07 .06	.00 .18* 05 .20* .06	.00 .01 .30** .03	.00 .09 10	.00	.00	
.00 01 .19* .10 08 .16* .16* 11	.00 02 .08 05 .07 .06 12	.00 .18* 05 .20* .06 28*	.00 .01 .30** .03 *31**	.00 .09 10 12	.00 .12 29**	.00	.00
.00 01 .19* .10 08 .16* 11	.00 02 .08 05 .07 .06 12	.00 .18* 05 .20* .06 28*	.00 .01 .30** .03 *31**	.00 .09 10 12	.00 .12 29**	.00 16*	.00
.00 01 .19* .10 08 .16* 11	.00 02 .08 05 .07 .06 12	.00 .18* 05 .20* .06 28*	.00 .01 .30** .03 *31**	.00 .09 10 12	.00 .12 29**	.00 16*	• 00
.00 01 .19* .10 08 .16* 11 *: s	.00 02 .08 05 .07 .06 12	.00 .18* 05 .20* .06 28*	.00 .01 .30** .03 *31** deviates	.00 .09 10 12	.00 .12 29** mean r a	.00 16*	.00
.00 01 .19* .10 08 .16* 11 *: s	.00 02 .08 05 .07 .06 12 ignific	.00 .18* 05 .20* .06 28* cantly of	.00 .01 .30** .03 *31** deviates	.00 .09 10 12 from 1	.00 .12 29** mean r a mean r a	.00 16* t p=.05 t p=.01	.00
.00 01 .19* .10 08 .16* 11 * : s **: s	.00 02 .08 05 .07 .06 12 ignific	.00 .18* 05 .20* .06 28** cantly of	.00 .01 .30** .03 *31** deviates deviates	.00 .09 10 12 from 1	.00 .12 29** mean r a mean r a	.00 16* t p=.05 t p=.01	.00
.00 01 .19* .10 08 .16* 11 *: s **: s	.00 02 .08 05 .07 .06 12 ignific ignific	.00 .18* 05 .20* .06 28* cantly of cantly of	.00 .01 .30** .03 *31** deviates deviates	.00 .09 10 12 from 1 from 1	.00 .12 29** mean r a mean r a	.00 16* t p=.05 t p=.01	.00
.00 01 .19* .10 08 .16* 11 *: s **: s Items 6 (h2	.00 02 .08 05 .07 .06 12 ignific ignific rank on =.56)	.00 .18* 05 .20* .06 28* cantly ( cantly (	.00 .01 .30** .03 *31** deviates deviates	.00 .09 10 12 from 1 from 1	.00 .12 29** mean r a mean r a	.00 16* t p=.05 t p=.01	.00
.00 01 .19* .10 08 .16* 11 *: s **: s Items 6 (h <sup>2</sup> 1 (h <sup>2</sup>	.00 02 .08 05 .07 .06 12 ignific ignific rank on =.56) =.45)	.00 .18* 05 .20* .06 28* cantly ( cantly (	.00 .01 .30** .03 *31** deviates deviates	.00 .09 10 12 from 1 from 1	.00 .12 29** mean r a mean r a	.00 16* t p=.05 t p=.01	.00
.00 01 .19* .10 08 .16* 11 *: s **: s Items 6 (h <sup>2</sup> 1 (h <sup>2</sup> 4 (h <sup>2</sup>	.00 02 .08 05 .07 .06 12 ignific ignific rank of =.56) =.45) =.44)	.00 .18* 05 .20* .06 28* cantly of cantly of cantly of	.00 .01 .30** .03 *31** deviates deviates	.00 .09 10 12 from 1 from 1	.00 .12 29** mean r a mean r a	.00 16* t p=.05 t p=.01	.00
.00 01 .19* .10 08 .16* 11 *: s ***: s Items 6 (h <sup>2</sup> 1 (h <sup>2</sup> 1 (h <sup>2</sup> 3 (h <sup>2</sup>	.00 02 .08 05 .07 .06 12 ignific ignific rank on =.56) =.45) =.44) =.40	.00 .18* 05 .20* .06 28* cantly (	.00 .01 .30** .03 *31** deviates deviates	.00 .09 10 12 from 1 from 1	.00 .12 29** mean r a mean r a	.00 16* t p=.05 t p=.01	.00
.00 01 .19* .10 08 .16* 11 * : s **: s Items 6 (h <sup>2</sup> 1 (h <sup>2</sup> 4 (h <sup>2</sup> 3 (h <sup>2</sup> 7 (h <sup>2</sup> )	.00 02 .08 05 .07 .06 12 ignific ignific rank on =.56) =.45) =.44) =.40) =.36)	.00 .18* 05 .20* .06 28* cantly (	.00 .01 .30** .03 *31** deviates deviates	.00 .09 10 12 from from from from from from from from	.00 .12 29** mean r a mean r a	.00 16* t p=.05 t p=.01	.00
.00 01 .19* .10 08 .16* 11 * : s **: s Items 6 (h <sup>2</sup> 1 (h <sup>2</sup> 4 (h <sup>2</sup> 3 (h <sup>2</sup> 7 (h <sup>2</sup> 2 (h <sup>2</sup>	.00 02 .08 05 .07 .06 12 ignific ignific ignific rank on =.56) =.45) =.44) =.40) =.36) = 30)	.00 .18* 05 .20* .06 28* cantly of cantly of	.00 .01 .30** .03 *31** deviates deviates	.00 .09 10 12 from 1 from 1	.00 .12 29** mean r a mean r a	.00 16* t p=.05 t p=.01	.00

an Test Pesidual Matrix for Initial Table 2 Snoat

loading. (Items dropped from each scale are noted in tables presenting the original set of scale items.) The final perspective taking scale has an alpha of .81, and factor loadings for the items range from .43 to Scale items and factor loadings for the final .79. scale are presented in Table 4. Results of the internal consistency and parallelism tests are presented in Tables 5-7. There are no significant deviations in the Spearman matrix and three in the flatness matrix. Two of these deviations, however, appear to be the result of item strength. Thus, the scale appears to be internally consistent. It also meets the parallelism criterion as there are no significant deviations in this residual matrix.

The initial empathic concern items and factor loadings are presented in Table 8, and internal consistency tests are presented in Tables 9 and 10. Three items were dropped from this scale due to low factor loadings. Factor loadings for the revised empathic concern scale range from .54 to .65 and alpha equals .84 (Table 11). Tables 12-14 present the results of the internal consistency and parallelism tests. There is only one significant deviation each in the Spearman, flatness, and parallelism matrices, suggesting the scale is internally consistent and parallel.

Alpha = .81	Loading
Before criticizing someone, I try to imagine how I would feel if I were in their place.	.65
If I'm sure I'm right about something I don't waste much time listening to other people's arguments.	.52
I sometimes try to understand my friends better by imagining how things look from their perspective.	.66
I believe that there are two sides to every question and I try to look at them both.	.71
I sometimes find it difficult to see things from the other person's point of view.	.43
I try to look at everybody's side of a disagreement before I make a decision.	.79
When I'm upset at someone I usually try to "put myself in his or her shoes" for a while.	. 58

# Table 4 Items, Factor Loadings and Reliability for Final Perspective Taking Scale

	Persp	ective I	aking Sc	ale		
.00 04 .08 04 05	.00 05 .02 .04	.00 .03 02	.00	.00		
04	03 .07	01 01	.05 07	.06 04	.00 03	.00
* : **:	significa significa	intly dev	iates fr iates fr	om mean om mean	r at p= r at p=	.05 .01
Table	e 6 Flatr Commu Scale	ness Test Inalities P	Residua for Fin	l Matriz al Persj	k and Rai pective (	nk Ordered Taking
.00						
08 .12 .03 15	.00 09 .01 *12	.00 .11 12	.00 06	.00		
.09 .09	.00 01	.13 01	.23** 04	.02 17*	.00 .05	.00
* : **:	significa significa	ntly dev ntly dev	iates fr iates fr	om mean om mean	r at p= r at p=	.05 .10
Items	s ranked c	ordered b	y commun	ality:		
6 (h 4 (h 3 (h 1 (h 7 (h 2 (h 5 (h	$2^{2}=.62)$ $2^{2}=.50)$ $2^{2}=.43)$ $2^{2}=.42)$ $2^{2}=.34)$ $2^{2}=.27)$ $2^{2}=.19)$					

Table 5	Spearman	Test	Residual	Matrix	for	Final
	Perspecti	ve Ta	aking Scal	le		

	Per	spectiv		J Scale			
.07	03	.02	05	.05	01	.11	
.06	03	03	.01	.07	.03	.07	
.08	03	.05	05	.05	.05	.06	
.05	09	.05	07	.07	.02	.01	
.05	07	.06	.01	.05	01	.01	
05	04	04	10	04	03	.06	
.02	06	04	07	.08	05	01	
.03	11	.02	11	06	09	03	

Table 7Parallelism Test Residual Matrix for FinalPerspective Taking Scale

\* : significantly deviates from mean r at p=.05
\*\*: significantly deviates from mean r at p=.10

Table 8Items, Factor Loadings and ReliabilityInitial Empathic Concern Scale	for
Alpha = .84	Loading
I am the type of person who is concerned when others are unhappy.	.62
I like to watch other people open presents. *	.29
I tend to get emotionally involved with another friend's problems.	.59
When someone else is upset, I almost always try to console them.	.60
When a friend starts to talk about his/her problems, I try to steer the conversation to something else. *	.38
When I see someone being taken advantage of, I feel kind of protective towards them. *	.39
When I see someone being treated unfairly, I sometimes don't feel very much pity for them.	.54
I often have tender concerned feelings for peopless fortunate than me.	le .59
I would describe myself as a pretty soft-hearted person.	1.54
I sometimes don't feel very sorry for people whe they are having problems.	en .53
Other people's misfortunes do not usually distume a great deal.	cb.64
I am often touched by things I see happen.	.60
Hearing about someone else's misfortune makes me feel sad.	.65

\* items dropped from the initial scale

Table 9Spearman Test Residual Matrix for InitialEmpathicConcern Scale

.00												
03	.00											
.07	.11	.00										
.10	.05	.06	.00									
. 03	.01	.17	*01	.00	•							
. 02	10	06	.05	10	.00							
02	10	15	12	11	.22	**.00						•
06	.05	09	06	02	01	.10	.00					
.02	01	02	01	04	02	.03	.00	.00				•
04	04	02	06	.08	05	.17	*01	.07	.00			
08	.08	.02	05	.05	02	07	. 08	09	.05	.00		
02	02	04	01	01	.02	.02	04	.10	03	.00	.00	
.00	.00	05	.07	06	. 05	.02	. 07	03	11	.03	.02	.00

\* : significantly deviates from mean r at p=.05
\*\*: significantly deviates from mean r at p=.10

.

Table 10Flatness Test Residual Matrix for InitialEmpathic Concern Scale

.00 -.14 .00 .15\*-.01 .00 .18\*-.07 .12 .00 -.02 -.17\* .10-.07 .00 -.03 -.28\*\*.12-.01 -.24\*\*.00 .03 -.23\*\*.12-.09 -.19\* .14 .00 .02 -.07 -.03 .00 -.09 -.07 .13 .00 .07 -.14 .01 .02 -.12 -.10 .03 .03 .00 .00 -.18\* .00-.03 -.01 -.13 .17\* .01 .07 .00 .03 -.03 .11 .04 .00 -.06 -.02 .17\*-.03 .10 .00 .07 -.14 .03 .06 -.07 -.03 .06 .03 .14 .00 .09 .00 .11 -.10 .04 .16\*-.10 .01 .08 .16\* .03 -.06 .15\* .12 .00

\* : significantly deviates from mean r at p=.05
\*\*: significantly deviates from mean r at p=.01

Items rank ordered by communality:

 $(h^2=.42)$ 13  $(h^2=.41)$ 11 1  $(h^2 = .39)$ 12  $(h^2 = .36)$  $(h^2 = .35)$ 4 8  $(h^2=.35)$  $(h^2 = .35)$ 3  $(h^2=.30)$ 9 7  $(h^2=.29)$  $(h^2 = .28)$ 10  $(h^2=.15)$ 6  $(h^2=.14)$ 5 2  $(h^2 = .08)$ 

Alpha = .84	Loading
I am the type of person is concerned when others are unhappy.	.62
I tend to get emotionally involved with another friend's problems.	.55
When someone else is upset, I almost always try to console them.	.58
When I see someone being treated unfairly, I sometimes don't feel very much pity for them.	.54
I often have tender concerned feelings for people less fortunate than me.	.59
I would describe myself as a pretty soft- hearted person.	.56
I sometimes don't feel very sorry for people when they are having problems.	.54
Other people's misfortunes do not usually disturb me a great deal.	.62
I am often touched by things I see happen.	.61
Hearing about someone else's misfortune makes me feel sad.	.65

.

# Table 11 Items, Factor Loadings and Reliability for Final Empathic Concern Scale

.00									
.10	.00								
.11	.09	.00							
02	13	11	.00						
06	07	05	.10	.00					
.01	01	02	.02	01	.00				
05	01	05	.17*	02	.06	.00			
07	.06	03	06	.09	09	06	.00		
02	02	.00	.02	04	.09	04	.00	.00	
01	03	.07	.02	.06	05	12	.04	.01	.00

Table	12	Spearman	Test	Residual	Matrix	for	Final
		Empathic	Conce	ern Scale			

\*: significantly deviates from mean r at p=.05
\*\*: significantly deviates from mean r at p=.10

Table	13	Flatness	5 Test	Residual	. Mat	rix a:	nd Rank
		Ordered	Commu	nalities	for	Final	Empathic
		Concern	Scale				

.00									
.10	.00								
.13	.07	.00							
02	17*	10	.00						
03	08	05	.08	.00					
.02	04	03	02	02	.00				
05	05	08	.12	04	.02	.00			
02	.06	01	07	.12	08	.05	.00		
.02	02	.01	.01	02	.09	05	.04	.00	
.06	01	.11	.03	.11	02	11	.10	.07	.00

\* : significantly deviates from mean r at p=.05
\*\*: significantly deviates from mean r at p=.10

Items rank ordered by communality

10  $(h^2=.42)$  $(h^2 = .39)$ 1  $(h^2=.38)$  $(h^2=.37)$ 8 9  $(h^2=.35)$ 5  $(h^2=.34)$ 3  $(h^2=.32)$ 6  $(h^2 = .30)$ 2  $(h^2=.29)$  $(h^2=.29)$ 4 7

02	.01	.02	10	.07	.03	02
10	07	.05	06	12	01	02
08	.00	.05	05	05	.03	.05
.00	.03	.01	01	.02	11	03
15	01	.06	.07	05	05	08
06	10	05	03	07	08	13
03	.13	.12	.06	.09	01	.19*
.02	.12	.09	.05	.10	.07	.00
01	.04	.14	02	06	08	.06
.01	.11	.12	02	06	04	.02

Table 14Parallelism Test Residual Matrix for FinalEmpathic Concern Scale

\* : significantly deviates from mean r at p=.05
\*\*: significantly deviates from mean r at p=.10

Items and factor loadings and internal consistency tests for the original emotional contagion scale are presented in Tables 15-17. One item was dropped from this scale because it had a low factor loading. The final emotional contagion scale has an alpha of .71, with factor loadings ranging from .46 to .65. Items and factor loadings are presented in Table 18, and results of the internal consistency and parallelism test are presented in Tables 19-21. There are no significant deviations in the Spearman and flatness matrices, and only one in the parallelism matrix. Thus, the internal consistency and parallelism criteria are met by this scale.

The initial fictional involvement scale items and factor loadings are presented in Table 22. Internal consistency tests appear in Tables 23 and 24. Two items were dropped from this scale, one because of a low factor loading and the other to improve the scale's internal consistency. Alpha for the revised fictional involvement scale is .82, and factor loadings range from .63 to .76 (Table 25). Tables 26-28 present results of the internal consistency and parallelism tests. There are no significant deviations in the Spearman matrix and one in the flatness matrix. There are no significant deviations in the parallelism matrix. Thus, the scale appears to meet the internal consistency and parallelism
Alpha = .70LoadingI tend to lose control when I am bringing bad.32news to people. *.32I am able to remain calm even though those around.61me worry61I cannot continue to feel OK if people around me.45are depressed45I don't get upset just because a friend is acting.57upset57I become nervous if others around me seem nervous65The people around me have a great influence on my.59moods59	Table 15Items, Factor Loadings and ReliabilityInitial Emotional Contagion Scale	for
I tend to lose control when I am bringing bad .32 news to people. * I am able to remain calm even though those around .61 me worry. I cannot continue to feel OK if people around me .45 are depressed. I don't get upset just because a friend is acting .57 upset. I become nervous if others around me seem nervous65 The people around me have a great influence on my .59 moods.	Alpha = .70	Loading
I am able to remain calm even though those around .61 me worry	I tend to lose control when I am bringing bad news to people. *	.32
I cannot continue to feel OK if people around me .45 are depressed	I am able to remain calm even though those around me worry.	d.61
I don't get upset just because a friend is acting .57 upset. I become nervous if others around me seem nervous65 The people around me have a great influence on my .59 moods.	I cannot continue to feel OK if people around me are depressed.	.45
I become nervous if others around me seem nervous65 The people around me have a great influence on my .59 moods.	I don't get upset just because a friend is acting upset.	g.57
The people around me have a great influence on my .59 moods.	I become nervous if others around me seem nervous	<b>s</b> 65
	The people around me have a great influence on my moods.	<b>y .</b> 59

.

\* items dropped from initial scale

#### Packay Tandi-1. 1

Emotional Contagion Scale				
. 00				
.12 .00				
0109 .00				
0301 .01 .00				
.0303 .0303 .00				
11 .00 .06 .06 .00 .00				
t : significantly deviates from mea	n r at n = 05			
<pre>**: significantly deviates from mea</pre>	n r at p=.10			
Table 17 Flatners Most Posidual Wat	riv and Dank			
Ordered Communalities for	Initial Empathic			
Concern Scale				
······································				
.00				
.04 .00				
1509 .00				
13 .0601 .00				
04 .09 .04 .06 .00				
20* .08 .04 .11 .10 .00				
t i gignifigantlu doviatog from mos				
* : Significantly deviates from mea	n r at p=.05			
"". Significanciy deviaces from mea				
Items rank ordered by communality:				
5 $(h^2=.42)$				
$2 (h^2 = .38)$	•			
6 $(h^2=.35)$				
4 $(h^2 = .32)$				
$(h^2=.20)$				
$1 (h^2=.10)$				

Table 16 Spearman Test Residual Matrix for Initial

Table 18 Items, Factor Loadings and Reliabil Final Emotional Contagion Scale	ity for
Alpha = .71	Loading
I am able to remain calm even though those around me worry.	.54
I cannot continue to feel OK if people around me are depressed.	.46
I don't get upset just because a friend is acting upset.	.59
I become nervous if others around me seem nervous.	.63
The people around me have a great influence on my moods.	.65

Table 19Spearman Test Residual Matrix for FinalEmotional Contagion Scale

.01	.02	.01	03	.00		
.03	.03	03	.00			
.02	.00	.00				
06	.00					
.00						

\*\*: significantly deviates from mean r at p=.10

Table	e 20 Fla Orc Cor	atness T lered Co ntagion	est Res: mmunali Scale	idual ties :	Matrix for Fir	and al I	l Rank Emotional
.00 14 .01	.00	.00					
.04	01 01	.01 .06	.00 .05	.00			
*:	signific signific	cantly d cantly d	eviates eviates	from from	mean 1 mean 1	r at r at	p=.05 p=.10
Items	s rank or	dered b	y commu	nality	t		
5 (1 4 (1 3 (1 1 (1 2 (1	$h^2=.43)$ $h^2=.40)$ $h^2=.35)$ $h^2=.30)$ $h^2=.21)$						
Table	e 21 Pai Emo	callelis otional	m Test I Contagio	Residu on Sca	ual Mat ale	rix	for Final
.05	.01	08	.09	.06			
.03	.10	01	.09	.01			
.03	.02	14	01	02			
.07	- 05	- 03	.04	- 02			
03	01	12*	01	06			
08	.03	14	.04	02			
*:	signific	cantly d	eviates	from	mean 1	at :	p=.05
**:	signific	cantly d	eviates	from	mean 1	: at	p=.10

Natrix and Dank mah 1

Initial Fictional Involvement Scale	
Alpha = .81	Loading
I really get involved with the feelings and characters in a novel.	.76
When I am reading an interesting story or novel, I imagine how I would feel if the event in the story were happening to me.	.63
After acting in a play myself, or seeing a play or movie, I have felt partly as chough I were one of the characters.	.65
When I watch a good movie, I can very easily out myself in the place of the leading character.	.70
If I see something very sad or very beautiful on television, I sometimes cry because it makes me feel very happy or very sad. *	.31
I become very involved when I watch a movie.	.67
Becoming involved in books or movies is a little silly. *	.57

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\* items dropped from initial scale

# Table 22 Items, Factor Loadings and Reliability for

Table	23	Spea Fict	irman iona	Test l Inv	Res: olve	ndual ment S	Mat Scal	rix .e	ÍOI	r Init	1al
.00		_									
.07	.00	)									
03	.04	•	00	~~							
09	.01	L •	18 *	.00	•	•					
- 09	- 03	· -·	08 .	0/	- 00	0 c c	0				
03	04	·	11 .	09	0	0 .( 1 .1	13	. 00	נ		
* : **:	signi signi	fica	ntly ntly	devi devi	ates ates	from from	mea mea	in r in r	at at	p=.05 p=.01	
Table	24	Flat Comm Invo	ness unal: lvem	Test ities ent S	Res: for cale	idual Initi	Mat lal	rix Fict	and	l Rank nal	Ordered
.00											
.18*	• .0	00									
.10	.0	8	.00								
.07	.0	8	.27	** .	00						
.01	2	23**	25	**	22**	.00					
.06	.0	)1	.06	•	16*	22	<b>t *</b>	.00			
.05	0	)4	11		06	08		.14		.00	
*:	signi signi	fica	ntly ntlv	devi devi	ates ates	from from	mea mea	n r	at at	p=.05 p=.01	
Items 1 (h 4 (h 6 (h	$1^2 = .58$ $1^2 = .49$ $1^2 = .49$	c ord	ered	by c	ommui	nality	7				
3 (h	12 = 42	// 2)									
2 (h	$1^2 = .39$	))									
7 (h	$1^2 = .33$	<b>1</b> 5									
5 (h	$n^2 = .10$	))									
		•									

. . ••• . . .... - -. \_ \_ . . . . n

Final Fictional Involvement Scale	101
Alpha = .82	Loading
I really get involved with the feelings and characters in a novel.	.68
When I am reading an interesting story or novel, I imagine how I would feel if the event in the story were happening to me.	.65
After acting in a play myself, or seeing a play or movie, I have felt partly as though I were one of the characters.	.73
When I watch a good movie, I can very easily put myself in the place of the leading character.	.76
I become very involved when I watch a movie.	.63
Table 26 Spearman Test Residual Matrix for Fina Fictional Involvement Scale	1

.00	03	03	.05	.00	
08	05	.08	.00		
03	03	.00			
.11	.00				
.00					

significantly deviates from mean r at p=.05 significantly deviates from mean r at p=.10\* : \*\*:

#### Factor Loadings and Reliability for Table 25 Ttome

Table	27	Flatness Ordered Involvem	Test Res: Communali ent Scale	idual ties :	Matrix and for Final 1	i Rank Fictional
.00 .07 01 04 05	.( ( 1	00 03 .00 03 .16 1005	* .00 .05	.00		
* : **:	signi signi	ificantly ificantly	deviates deviates	from from	mean r at mean r at	p=.05 p=.10
Items	s ranl	k ordered	by commu	nalit	Y	
4 (1 3 (1 1 (1 2 (1 5 (1)	$n^2 = .58$ $n^2 = .52$ $n^2 = .42$ $n^2 = .42$ $n^2 = .32$	3) 3) 7) 3) 9)				
Table	28	Parallel Fictiona	ism Test 1 l Involve	Resid ment a	ual Matrix Scale	for Final
.00 .02 01 05 03 .00 10 01	( ( ( ( (	$\begin{array}{ccccccc} 01 &02 \\ 01 & .11 \\ 01 &01 \\ 03 &07 \\ 01 &01 \\ 02 &01 \\ 08 &10 \\ 05 &05 \end{array}$	.03 .10 02 03 .01 .10 09 02	.11 .14 .04 01 .05 .15 05 .01		
* : **:	sign: sign:	ificantly ificantly	deviates deviates	from from	mean r at mean r at	p=.05 p=.10

.

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criteria.

Items, factor loadings, and internal consistency tests for the original emotional reaction scale are presented in Tables 29-31. Four items were dropped from this scale to improve internal consistency. The revised scale measuring emotional reactions to the film clips has an alpha of .96 with factor loadings ranging from .77 to .93. Scale items and factor loadings for this scale are presented in Table 32. Internal consistency and parallelism test results are presented in Tables 33-35. There is only one significant deviation in the Spearman matrix, but ten in the flatness matrix. A number of these deviations, however, may be the result of item strength. There are no significant deviations in the parallelism matrix.

The initial items for the attitude toward blindness scale and their factor loadings are presented in Table 36. Internal consistency test results appear in Tables 37 and 38. One item was dropped from this scale because of a low factor loading, and two others were dropped to improve internal consistency. The final attitude toward blindness scale has an alpha of .80 with factor loadings ranging from .43 to .69 (Table 39). Tables 40-42 present the results of the internal consistency and parallelism tests on this scale. There is one

	Initial Emotional Acadelion to film Board						
Alpl	na =	= .9	6	Loa	ding		
not	at	all	joyful extremely joyful *		.92		
not	at	all	upset extremely upset		.90		
not	at	all	happy extremely happy		.91		
not	at	all	panicked extremely panicked		.83		
not	at	all	inspired extremely inspired *		.39		
not	at	all	troubled extremely troubled		.89		
not	at	all	victorious extremely victorious	*	.70		
not	at	all	frightened extremely frightened		.85		
not	at	all	amused extremely amused		.81		
not	at	all	disturbed extremely disturbed		.88		
not	at	all	triumphant extremely triumphant	*	.71		
not	at	all	terrified extremely terrified		.83		

\* items dropped from initial scale

70

# Table 29Items, Factor Loadings and Reliability forInitial Emotional Reaction to Film Scale

Table 30Spearman Test Residual Matrix for Initial<br/>Emotional Reaction to Film Scale

.00 .01 .00 .04 -.04 .00 -.06 .07 .02 .00 .00 -.07 .09 -.01 .00 -.06 .04 -.05 .08 -.01 .00 .05 -.09 .08 -.12\* .15\*\*-.11\* .00 -.07 .05 -.05 .08 -.06 .10 -.09 .00 .10 -.01 .00 -.06 -.07 -.05 .05 -.02 .00 -.04 .07 -.07 .03 -.09 .11\*-.12\* .08 .01 .00 .05  $\div$ .08 .06 -.11\* .21\*\*-.12\* .31\*\*-.13\* .03 .09 .00 -.01 .04 -.06 .07 -.14\*\* .07 -.11\* .11\* .03 .12\*-.12\* .00

\* : significantly deviates from mean r at p=.05
\*\*: significantly deviates from mean r at p=.01

Table 31Flatness Test Residual Matrix and RankOrdered Communalities for Emotional Reactionto Film Scale

<	
.00	
.20** .00 .23** .14** .00	
.06 .17** .13** .00	·
28**36**20**33** .00 .11* .20** .11* .17**31** .00	. ·
.0510 .0718**22**13* .00	· · · · · · · · · · · · · · · · · · ·
.07 .17** .08 .14**37** .21**14** .00 .20** .08 .090340** .0303 .03	.00
.13** .22** .09 .12*39** .25**14** .19*	• .08 .00
.11* .15** .05 .12*46** .17**17** .18*	* .0621**17** .00
	• •

\* : significantly deviates from mean r at p=.05
\*\*: significantly deviates from mean r at p=.01

Items rank ordered by communality

 $(h^2=.85)$  $(h^2=.82)$  $(h^2=.81)$  $(h^2=.78)$  $(h^2=.78)$  $(h^2=.72)$  $(h^2=.69)$  $(h^2=.65)$  $(h^2=.50)$  $(h^2=.49)$  $(h^2=.15)$ 

Table 32Items, Factor Loadings and ReliabiliFinal Emotional Reaction to Film Sca	ty for le
Alpha = .96	Loading
not at all upset extremely upset	.92
not at all happy extremely happy	.84
not at all panicked extremely panicked	.86
not at all troubled extremely troubled	.92
not at all frightened extremely frightened	.90
not at all amused extremely amused	.77
not at all disturbed extremely disturbed	.93
not at all terrified extremely terrified	.88

Table 33Spearman Test Residual Matrix for Final<br/>Emotional Reaction to Film Scale Items

.00						
.05	.00					
02	.02	.00				
03	.01	.02	.00			
•08*	05	04	02	.00		
04	04	.04	.00	.01	.00	
05	.00	.00	.03	.02	.03	.00
	.00 .05 02 03 .08* 04 05	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

\* : significantly deviates from mean r at p=.05
\*\*: significantly deviates from mean r at p=.10

Reaction to Film Scale								
.00 .01 .04 .07 .04 05 .09 .09	.00 .00 *02 05 04 **04 08*	.00 .04 .01 16** 01 01	.00 .08* 10** .12** .04	.00 10** .06 .05	• .00 05 07*	.00 .08*	.00	
* : **:	signific signific	antly d antly d	leviates leviates	from m from m	lean r a lean r a	t p=.05 t p=.10		
Items	s rank or	dered h	y commu	nality				
7 (1 4 (1) 1 (1) 5 (1) 8 (1) 3 (1) 2 (1) 6 (1)	$n^{2}=.86)$ $n^{2}=.85)$ $n^{2}=.85)$ $n^{2}=.80)$ $n^{2}=.78)$ $n^{2}=.74)$ $n^{2}=.70)$ $n^{2}=.60)$							
Table	e 35 Par Emc	allelis tional	m Test Reactio	Residua on to Fi	l Matri: .lm Scalo	x for Fi e	nal	
16 .03 06 10 10 16 13 16	01 .20* .09 .06 .04 03 .02 06	11 .07 07 05 02 13 10 16	02 .12 .05 .05 .03 08 .01 11	03 .11 .03 .05 .00 04 01 06	.04 .14 .10 .15 .10 .00 .07 .01	.07 .15 .03 .14 .03 .02 .12 02		
* : **:	signific signific	antly d antly d	leviates leviates	from m from m	ean ra lean ra	t p=.05 t p=.10		

Table 34Flatness Test Residual Matrix and RankOrdered Communalities for Final EmotionalReaction to Film Scale

inicial Accicute Itwalu Bilhuness Scale						
Alpha = .83	Loading					
Blind People really get around without much problem. *	.29					
Being blind is a horrible thing. *	.61					
There is no way to compensate for the loss of one's sight.	.45					
Being blind helps you enjoy things others might not.	.59					
Being blind is one of the most frustrating things that could ever happen.	s.68					
Even if people are blind, they can still be happy	y58					
Blind people can compensate for their lack of sight by developing their other senses more fully. *	.50					
Being blind is depressing.	.70					
Many things in life are worse than blindness.	.64					
Blindness is the worst thing that can happen to someone.	.63					

\* items dropped from initial scale

### Table 36 Items, Factor Loadings and Reliability for Initial Attitude Toward Blindness Scale

.00									
.11	.00								
.02	.08	.00							
08	04	.11	.00						
.23*	* .09	05	02	.00					
08	18*	05	.04	14	.00				
11	14	.00	.09	16*	.35*	* .00			
.12	.20*	*07	13	.09	04	10	.00		
11	07	07	.03	07	.08	.05	.01	.00	
10	06	.02	.00	.02	.02	.02	07	.15	.00

Table 37Spearman Test Residual Matrix for InitialAttitude Toward Blindness Scale

\* : significantly deviates from mean r at p=.05
\*\*: significantly deviates from mean r at p=.10

						· · · · · · · · ·		
. 00								
03	.00							
17*	.04	.00						
23**	.00	.06	.00					
.11	.19*	06	.06	.00				
23**-	15*	11	.06	07	.00			
29**-	15*	09	.06	14	.32*	* .00		
.00	.31**	*07	04	.25**	.05	07	.00	
24**	.00	10	.09	.04	.13	.05	.23**	.00

Table 38	Flatness Test Residual Matrix and F	Rank
	Ordered Communalities for Initial A	Attitude
	Toward Blindness Scale	

\* : significantly deviates from mean r at p=.05
\*\*: significantly deviates from mean r at p=.01

Items rank ordered by communality:

Alpha = .80	Loading
There is no way to compensate for the loss of one's sight.	.43
Being blind helps you enjoy things that others might not.	.61
Being blind is one of the most frustrating things that could ever happen.	.63
Even if people are blind, they can still be happy.	.56
Being blind is depressing.	.64
Many things in life are worse than blindness.	.69
Blindness is the worst thing that can happen to someone.	.69

Table 39Items, Factor Loadings and Reliability forFinal Attitude Toward Blindness Scale

	At	titude To	oward B	lindnes	s Scale		
.00	<u></u>						
.12	.00						
01	.00	.00					
03	.04	10	.00				
02	11	.17*	.01	.00			
08	01	07	.07	.02	.00		
.02	05	.02	.01	07	.08	.00	
* :	signifi	.cantly de	eviates	from m	lean r at	p=.05	
**:	signifi	cantly de	eviates	from m	lean r at	p=.10	
Table	e 41 Fl Cc Bl	atness To mmunalit: indness S	est Res ies for Scale	idual M Final	atrix an Attitude	d Rank ( Toward	Ordered
							······
.00							
.01	.00						
11	.01	.00					
16	* .01	12	.00				
12	09	.20**	.00	.00			
15	* .04	01	.08	.09	.00		
06	.00	.08	.02	.00	.18*	.00	
* :	signifi	.cantly de	eviates	from m	ean r at	p=.05	
**:	signifi	cantly de	eviates	from m	lean r at	p=.10	
Ttom	z rank o	rdored h		nalitu			
T CCW2		Treter D		narrcy			
6 ()	$n^2 = .48$ )						
7 (ł	$1^2 = .47$						
5 À	$n^2 = 41$						

Table	40	Spearman Attitude	Test Towa	Residual rd Blindno	Matrix ess Scal	for Le	Final

.

 $(h^2=.41)$  $(h^2=.40)$  $(h^2=.37)$  $(h^2=.31)$  $(h^2=.18)$ 3 2 4 1

80	04	.12	01	.26**	.03	.08
06	07	.03	.00	.24**	04	05
. 04	04	.03	12	.10	08	10
. 07	12	.02	14	.14	09	09
02	07	.01	18*	.14	08	07
14	09	.05	07	.14	08	07
80	10	.09	13	.21*	12	04
07	11	.05	11	.06	08	.04

Table 42Parallelism Test Residual Matrix for Final<br/>Attitude Toward Blindness Scale

\* : significantly deviates from mean r at p=.05
\*\*: significantly deviates from mean r at p=.10

significant deviation in the Spearman matrix and four in the flatness matrix, three of which appear to be the result of item strength. There are four deviations in the parallelism matrix.

Items on the volunteering scale have factor loadings from .63 to .85 and an alpha of .91. Items and their factor loadings are presented in Table 43. Results of the internal consistency and parallelism tests are presented in Tables 44-46. No items were dropped from this scale. There are no deviations in the Spearman matrix. There are four significant deviations in the flatness matrix, two of which appear the result of item strength. There is only one significant deviation in the parallelism matrix.

### Descriptives

Means, variances, and standard deviations were calculated for each variable. The results of these analyses are presented in Table 47.

#### Significance Tests

A t-test was conducted to compare emotional reactions to the film clips between subjects in the positive and negative conditions. This was done as a manipulation check to ensure that the negative clip was perceived as negative and the positive clip as positive. There is a significant difference (t=22.07, df=135, p

Alpha = .91	Loading
How many hours a week would you be willing to spend training dogs for the blind?	.64
How many hours a week would you be willing to spend reading books for the blind?	.85
How many hours a week would you be willing to spend baby-sitting for the blind?	.80
How may hours a week would you be willing to spend helping the blind elderly?	.85
How many hours a week would you be willing to spend leading a sports program for blind children?	.82
How many hours a week would you be willing to spend participating in a transportation program for the blind on campus?	.79
How many hours a week would you be willing to spend participating in the Radio Talking Book program of the MSU public radio?	.63

Table 43 Items, Factor Loadings and Reliability for Volunteering Scale

Tabi	Vol	lunteeri	ing Scale	8	Maclix	101	
.00							
.00	.00						
.01	.02	.00					
.00	.00	.01	.00				
.04	05	.03	02	.00			
.00	02	05	.00	.02	.00		
05	.04	03	.02	03	.04	.00	
* :	signific	antly d	leviates	from	mean r	at $p=.05$	
**:	signific	cantly d	leviates	from	mean r	at p=.10	
Table	e 45 Fla Cor	ntness I Mounalit	lest Resi ies for	idual Volu	Matrix	and Rank Scale	Ordered
.00							
04	.00						
06	.12*	.00					
05	.13*	.10	.00				
02	.06	.10	.09	.00			
08	.07	.00	.08	.08	.00		
24	**01	11*	04	10	05	.00	
* :	signific	cantly d	leviates	from	mean r	at p=.05	
**:	signific	cantly d	leviates	from	mean r	at p=.10	
Ttom	s rank ou	dered t		nality	<b>.</b>		
1001				larrej	t		
2 (]	$h^2 = .73)$						
4 (]	h <sup>2</sup> =.72)						
5 (l	h <sup>2</sup> =.67)						
3 (1	h4=.65)						
6 (]	h4=.63)						
1 (1	h <sup>2</sup> =.41)						
7 (1	n4=.40)						

Table 4	44	Spearman	Test	Residual	Matrix	for
		Volunteer	cing S	Scale		

Volunteering Scale								
16	01	11	02	03	.04	.07		
.03	.20*	.07	.12	.11	.14	.15		
06	.09	07	.05	.03	.10	.03		
10	.06	05	.05	.05	.15	.14		
10	.04	02	.03	.00	.10	.03		
16	03	13	08	04	.00	.02		
13	.02	10	.01	01	.07	.12		
16	06	16	11	06	.01	02		

Table 46 Parallelism Test Residual Matrix forVolunteering Scale

\* : significantly deviates from mean r at p=.05
\*\*: significantly deviates from mean r at p=.10

Table 47 Descriptives

	M	S2	S
Total Sample			
Perspective Taking	3.55	0.40	0.63
Empathic Concern	3.82	0.29	0.54
Emotional Contagion	2.99	0.47	0.68
Fictional Involvement	3.70	0.47	0.68
Emotional Reactions	4.32	4.01	2.00
Blindness Attitude	3.68	0.45	0.67
Volunteering Behavior	2.52	2.52	1.50
Positive Condition			
Perspective Taking	3.53	0.39	0.62
Empathic Concern	3.83	0.29	0.54
Emotional Contagion	3.09	0.47	0.68
Fictional Involvement	3.68	0.38	0.62
Emotional Reactions	5.92	0.83	0.91
Blindness Attitude	3.85	0.35	0.59
Volunteering Behavior	2.44	2.19	1.48
Negative Condition			
Perspective Taking	3.57	0.41	0.64
Empathic Concern	3.80	0.28	0.53
Emotional Contagion	2.87	0.45	0.67
Fictional Involvement	3.72	0.58	0.76
Emotional Reactions	2.37	0.94	0.97
Blindness Attitude	3.47	0.50	0.71
Volunteering Behavior	2.63	2.36	1.53

.001) between mean scores of subjects in the negative condition (M=2.37) and those in the positive condition (M=5.92), suggesting that the manipulation was effective.

Mean comparisons were also made between the emotional reactions of subjects who had and had not seen the film prior to this study. This comparison was made to determine if subjects who had seen the film previously had different responses to the treatments than those who were unfamiliar with the film. No significant differences (t=.09, df=135, p >.05) were observed between those who had seen the film previously (M=4.33) and those who had not (M=4.30).

Finally, subjects in the positive and negative conditions were compared on the four dimensions of empathy to check for selection threats to internal validity. Because subjects were not randomly assigned to groups, it was necessary to make these comparisons to determine if the two groups were equal at the beginning of the study. No significant differences were found between the two groups on any of the dimensions of empathy. These results are summarized in Table 48.

### Path Analyses

Correlation matrices used in the path analyses were corrected for attenuation due to measurement

	positive condition means	negative condition means	t	df	q
perspective taking	3.53	3.57	0.39	139	>.05
empathic concern	3.83	3.80	0.27	139	>.05
emotional contagion	3.08	2.87	1.92	139	>.05
fictional involvement	3.68	3.72	0.33	139	>.05

Table 48Mean Comparisons of Subjects in Positive and<br/>Negative Conditions on Empathy Scales

error. The corrected matrices are presented in Table 49.

Three criteria were used to assess the fit of the models. First, path coefficients were examined. Low path coefficients were taken as indicators that relationships did not exist where they had been hypothesized. Second, Chi square tests were conducted to assess the over all fit of the model. Finally, residual matrices were inspected for significant errors. Significant errors were used as indicators of relationships that may exist where none were hypothesized.

#### Model of Empathic Responses to Emotionally Charged Film

The hypothesized model was tested in both the negative and positive conditions. Path coefficients for the model in the negative condition model (Figure 3) are as follows: perspective taking to empathic concern (.52), perspective taking to fictional involvement (.46), empathic concern to fictional involvement (-.07), emotional contagion to empathic concern (.29), fictional involvement to concordant emotional reaction (.28), and emotional contagion to concordant emotional reaction (.28).

Significance tests show that the path from empathic concern to fictional involvement is not significant

		4						
Positive	Condition							
	1	2	3	4	5	6	7	
1	1.0							
2	.48	1.0						
3	05	.49	1.0					
4	.11	.49	.12	1.0				
5	.16	.04	.04	.07	1.0			
6	.29	.10	20	.10	.34	1.0		
7	.28	.43	.17	.16	.10	.28	1.0	
Negative	Condi	tion						
	1	2	3	4	5	6	7	
1	1.0							
2	.57	1.0						
3	.17	.38	1.0					
4	.42	.19	.24	1.0				
5	25	04	35	35	1.0			
6	.05	.27	.11	.41	06	1.0		
7	.21	.40	09	.09	.19	05	1.0	

Table 49 Corrected Correlation Matrices for Path Analyses

## Key:

- 1 = Perspective Taking
- 2 = Empathic Concern
- 3 = Emotional Contagion
- 4 = Fictional Involvement
- 5 = Emotional Reaction
- 6 = Attitude Toward Blindness
- 7 = Volunteering Behavior



\* not statistically significant at p=.05

Residual Matrix

1	2	3	4	5		
.00						
.00	.00					
.00	.00	.00				
.00	.00	.19	.00			
08	.12	05	05	.00		
* sta	atisti	cally	signif	icant	at	p=.05

- 1 = perspective taking
- 2 = empathic concern
- 3 = emotional contagion
- 4 = fictional involvement
- 5 = concordant emotional reaction

Figure 3 Model of Empathic Reactions to Emotionally Charged Film in the Negative Condition. (t=.09, df=56, p >.05). No errors in the residual matrix are significant. The model does not differ significantly from the data (Chi square=3.65, df=4, p >.05). The sum of squared errors for this model is .063.

The test of this model in the positive film condition yields somewhat different results (Figure 4). Path coefficients for the model in this condition are: perspective taking to empathic concern (.51), perspective taking to fictional involvement (-.16), empathic concern to fictional involvement (.57), emotional contagion to empathic concern (.52), fictional involvement to concordant emotional reaction (.07), and emotional contagion to concordant emotional reaction (.03).

Three path coefficients in this test of the model are not statistically significant: perspective taking to fictional involvement (t=1.38, df=72, p >.05), fictional involvement to emotional reaction (t=0.60, df=72, p >.05), and emotional contagion to emotional reaction (t=0.25, df=72, p >.05). There are no significant errors in the residual matrix. Chi square for this model is 3.85 (df=4, p >.05), indicating the model does not differ significantly from the data. The sum of squared errors for this model is .052.



\* not statistically significant at p=.05

Residual Matrix

2 1 3 4 5 .00 .00 .00 .00 .00 .00 .00 .00 -.17 .00 .15 -.01 -.01 -.01 .00 \* statistically significant at p=.05 1 = perspective taking 2 = empathic concern 3 = emotional contagion4 = fictional involvement 5 = concordant emotional reaction

-----

Figure 4 Model of Empathic Reactions to Emotionally Charged Film in the Positive Condition. The differences between these two models are interesting. Neither fictional involvement nor emotional contagion are significant predictors of concordant emotional reactions in the positive condition as they are in the negative condition. These findings suggest that empathy may play a different role under positive and negative conditions.

Other differences between the two models are more puzzling. Perspective taking and fictional involvement have a strong positive relationship in the negative condition, while they have a weak negative relationship in the positive condition. Given that perspective taking and fictional involvement were measured as personality traits prior to film clip exposure, the relationship between these two variables should be the same regardless of the film condition under which the model is tested. Furthermore, it makes little sense conceptually to suggest that perspective taking would be negatively related to fictional involvement. Another peculiar difference between these two conditions is the relationship between empathic concern and fictional involvement. In the negative condition there appears to be little relationship between the two, while in the positive condition there is a strong positive relationship. Again, there is no reason to expect these

kind of differences between conditions.

These differences may be an indication that subjects in the two groups are not the same kinds of people. The significance tests comparing the two groups on the four dimensions of empathy indicated no significant differences. While there may not be differences with respect to each individual dimension, there may be differences in the response patterns across the dimensions. In other words, while there are no significant differences on individual dimensions, there appear to be differences in the way dimensions are related to each other in the two conditions. Such differences would not be expected as these variables are personality traits measured before receiving any treatment.

#### Model Revisions

No revisions were made for the model in the negative condition despite the low path coefficient between empathic concern and fictional involvement. Results from the positive condition are consistent with the hypothesis that these two variables are related. Since there is no conceptual reason why the relationship should be different in the negative condition and keeping the path makes more conceptual sense than removing it, the path was not removed.

Insignificant path coefficients for the model tested in the positive condition suggest several revisions. First, the path from empathic concern to fictional involvement could be dropped. This path, however, was not dropped. A strong relationship was observed between these two variables in the negative condition, and again, there is no reason to expect differences in this relationship between the two conditions. Retaining the path in light of the negative condition findings has more conceptual appeal than dropping the path from the model. The paths from emotional contagion and fictional involvement to concordant emotional reactions could also be dropped because their path coefficients are very small. Testing such a model, however, would not be any more informative than the initial test. It is apparent from the first test of the model that these dimensions of empathy are not important in predicting emotional reactions in the positive condition. Testing a revised model without these paths would simply indicate the same thing. Thus, despite an insignificant Chi square, it is apparent that the model does not adequately represent the relationships among these variables in the positive condition. Given that there appear to be no predictors of the dependent variable of interest in this study, a

revised model was not tested.

#### The Extended Model

As with the basic model, the extended model was tested in both the negative and positive condition. The results of the negative condition test are reported in Figure 5. Path coefficients for this model are as follows: perspective taking to empathic concern (.52), perspective taking to fictional involvement (.46), empathic concern to fictional involvement (-.07), emotional contagion to empathic concern (.29), fictional involvement to concordant emotional reaction (.28), emotional contagion to concordant emotional reaction (.28), emotional reaction to negative attitude toward blindness (-.05), empathic concern to negative attitude (.27), negative attitude to volunteering behavior (-.17), and empathic concern to helping behavior (.44).

Three of these paths are not significant: empathic concern to fictional involvement (t=0.09, df=56, p >.05), emotional reaction to attitude (t=0.37, df=56, p >.05) and attitude to volunteering (t=1.29, df=56, p >.05). Two errors in the residual matrix are larger than would be expected from sampling error alone fictional involvement to attitude and emotional contagion to behavior. This model does not deviate

Emotional Contagion .29 .28 Empathic Concern . 44 .52 07\* Negative Perspective Concordant Volunteer Fictional Emotional Involvement \*Attitude Taking **Behavior** .28 Reaction .46 .-.17\* -.05\*

ì

\* not statistically significant at p = .05

**Residual Matrix** 

1 2 3 4 5 7 6 .00 .00 .00 .00 .00 .00 .18 .00 .00 .00 -.08 .12 -.05 -.05 .00 .34\* -.11 -.01 -.01 .03 .00 -.02 .00 -.24\* .02 .25 .00 .00

\* statistically significant at p = .05

- 1 = perspective taking
- 2 = empathic concern
- 3 = emotional contagion
- 4 = fictional involvement
- 5 = concordant emotional reaction
- 6 = negative attitudes toward blindness
- 7 = volunteering behavior
- Figure 5 Extended Model of Empathic Reactions, Attitudes and Volunteering Behavior in the Negative Condition
significantly from the data (Chi square=17.86, df=11, p >.05). The sum of squared errors for this model is .308.

Path coefficients for the extended model in the positive condition (Figure 6) are as follows: perspective taking to empathic concern (.51), perspective taking to fictional involvement (-.16), empathic concern to fictional involvement (.57), emotional contagion to empathic concern (.52), fictional involvement to concordant emotional reaction (.07), emotional contagion to concordant emotional reaction (.03), positive emotional reaction to negative attitudes toward blindness (.34), empathic concern to attitudes (.09), attitudes to volunteering behavior (.24), and empathic concern to volunteering (.41).

The following paths are not significant: perspective taking to fictional involvement (t=1.38, df=72, p >.05), fictional involvement to emotional reaction (t=0.60, df=72, p >.05), emotional contagion to emotional reaction (t=0.25, df=72, p >.05), and empathic concern to attitude (t=0.77, df=72, p >.05). No errors in the residual matrix are significant at the .05 level. Chi square for this model is 14.13 (df=11, p >.05). The sum of squared errors for this model is .191.

In addition to the differences between the two



\* not statistically significant at p = .05

**Residual Matrix** 

1	2	3	4	5	6	7
.00						
.00	.00					
.00	.00	.00				
.00	.00	17	.00			
.15	01	01	01	.00		
.25	.00	26	.03	.00	.00	
.07	.00	04	06	.00	.00	.00

- \* statistically significant at p = .05
- 1 = perspective taking
- 2 = empathic concern
- 3 =emotional contagion
- 4 = fictional involvement
- 5 = concordant emotional reaction
- 6 = negative attitudes toward blindness
- 7 = volunteering behavior

Figure 6 Extended Model of Empathic Reactions, Attitudes and Volunteering Behavior in the Positive Condition conditions already noted, several other differences are apparent in comparing the extended models. First, there are differences in terms of hypothesized paths. Empathic concern appears to be a predictor of attitude toward blindness in the negative condition but not the positive condition. There are also differences between the two conditions with regard to the relationships between emotional reaction and attitude and attitude and volunteering. These paths are significant in the positive condition but not the negative condition.

There are also differences between the conditions in terms of new paths that would improve the fit of the The model in the negative condition appears to model. also require a negative link from emotional contagion to helping behavior, though such a link does not appear necessary in the positive condition. This difference makes some conceptual sense. An emotionally contagious person who has been exposed to a negatively charged stimulus may be so upset that he or she would avoid volunteering. Such a reaction would not be expected of an emotionally contagious person exposed to a positively charged stimulus. The error matrix in the negative condition also suggests the addition of a path from fictional involvement to attitude toward blindness. There does not, however, seem to be any reasonable

conceptual justification for such a revision so this path was not added.

## Extended Model Revisions

A number of revisions were made to the extended model in the negative condition. A path was added from emotional contagion to volunteering behavior. The paths from emotional reaction to attitude and attitude to volunteering were dropped from the model because of low path coefficients.

The revised model is presented in Figure 7. The path coefficients for this model are: perspective taking to empathic concern (.52), perspective taking to fictional involvement (.46), empathic concern to fictional involvement (-.07), fictional involvement to concordant emotional reaction (.28), emotional contagion to empathic concern (.29), emotional contagion to emotional reaction (.28), empathic concern to attitude toward blindness (.27), empathic concern to volunteering behavior (.51), and emotional contagion to volunteering (-.28). As already noted, the path from empathic concern to fictional involvement is not significant. All other paths are significant, and there are no significant errors in the residual matrix. Chi square for the model is 15.31 (df=12, p >.05), indicating the model does not deviate significantly from the data. The



\* not statistically significant at p = .05

Residual Matrix

1	2	. 3	4	5	6	7
.00						
.00	.00					
.00	.00	.00				
.00	.00	.19	.00			
08	.12	05	05	.00		
10	.00	.01	.36*	02	.00	
03	.00	.00	.01	.19	16	.00

- 1 = perspective taking
- 2 = empathic concern
- 3 = emotional contagion
- 4 = fictional involvement
- 5 = concordant emotional reaction
- 6 = negative attitudes toward blindness
- 7 = volunteering behavior
- Figure 7 Revised Extended Model of Empathic Reactions, Attitudes and Volunteering Behavior in the Negative Condition

sum of squared errors for the model is .264.

Several revisions to the model were made for the positive condition as well. Paths from fictional involvement and emotional contagion to concordant emotional reactions were dropped. The path from empathic concern to attitude was also dropped. No new paths were added to the model. This model is presented in Figure 8.

Path coefficients for the revised extended model in the positive condition are as follows: perspective taking to empathic concern (.51), perspective taking to fictional involvement (-.16), empathic concern to fictional involvement (.57), emotional contagion to empathic concern (.52), emotional reaction to negative attitude (.34), attitude to volunteering behavior (.24), and empathic concern to volunteering (.41). All paths except perspective taking to fictional involvement are significant, and there are no significant errors in the residual matrix. Chi square for the model is 11.54 (df=14, p >.05), and the sum of squared errors for the model is .156.



\* not statistically significant at p = .05

```
Residual Matrix
```

1	2	3	4	5	6	7
.00						
.00	.00					
.00	.00	.00				
.00	.00	17	.00			
.00	06	.00	.04	.00		
.24	.07	21	.09	.00	.00	
.07	.02	03	04	02	.03	.00

\* statistically significant at p = .05

- 1 = perspective taking
- 2 = empathic concern
- 3 = emotional contagion
- 4 = fictional involvement
- 5 = concordant emotional reaction
- 6 = negative attitudes toward blindness
- 7 = volunteering behavior

```
Figure 8 Revised Extended Model of Empathic Reactions,
Attitudes and Volunteering Behavior in the
Positive Condition
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### Chapter 4: Discussion

In the first part of this chapter, the initial model of empathic reactions to film will be discussed. The next section will focus on the extended model that includes relevant attitudes and behaviors. The final part discusses limitations of this investigation and directions for future research.

### Model of Empathic Reactions to Film

The findings of this study suggest that various dimensions of empathy are important factors in understanding emotional reactions to filmed stimuli. Furthermore, they suggest the role of empathy differs from negatively to positively charged stimuli.

Tests of the primary model are consistent with the relationships hypothesized among the dimensions of empathy examined in this study. In both conditions perspective taking and emotional contagion were strong predictors of empathic concern. Perspective taking appears to be a precursor to empathic concern such that the greater one's perspective taking ability, the more likely he or she is to feel empathic concern. Likewise, emotional contagion is a predictor of empathic concern;

individuals who tend to experience emotional contagion also tend to experience empathic concern.

Other findings are less clear. Perspective taking is a strong predictor of fictional involvement in the negative condition though not the positive condition. The reverse is true of empathic concern; empathic concern is a strong predictor of fictional involvement in the positive condition but not in the negative condition. As noted earlier, there is no reason to expect such differences between the two conditions as the empathy measures are trait measures. Thus, the relationships among them should be independent of the stimulus condition. Given the differences between the conditions, it is not clear if these dimensions do in fact predict fictional involvement. It does, however, make more conceptual sense to suggest that there are such relationships than to suggest that there are not, and the data are at least partially consistent with this suggestion.

Perhaps more interesting findings of this investigation are differences in the relationships observed between dimensions of empathy and concordant emotional reactions in the two conditions. In the negative condition, the proposed path from fictional involvement to emotional reactions is consistent with

the data; the higher subjects on the fictional involvement dimension the more negative their reactions were to the negative film clip. Subjects high on emotional contagion also had more negative emotional reactions to the film in this condition. This was not the case, however, in the positive condition. Neither fictional involvement nor emotional contagion were significant predictors of concordant emotional reactions to the positive clip, suggesting that dimensions of empathy may play little role in emotional responses to filmed stimuli featuring pleasant experiences.

Several explanations can be offered for these differences. They may be simply be due to the stimulus materials used in this study. While the two clips differ in terms of their emotional connotations, they both focus on the experiences of a blind man. Thus, subjects in the positive condition may have responded more to the fact that the man was blind than to the fact his experiences were pleasant. A second possible explanation for these findings is measurement problems. Most of the items in the empathic concern and emotional contagion scales ask about how individuals respond to the negative experiences of others. Thus, these scales may be related more strongly to negative stimuli than positive. Furthermore, most of the items in the

emotional reaction scale are negatively worded. Thus, it may be the case that this scale is better at tapping negative reactions than positive reactions.

Another explanation is that empathy, by its nature, is a concept associated only with the negative experiences of others. As noted in Chapter 1, most of the research on empathy has focused on responses to the unpleasant experiences of others. Thus, empathy may not be relevant to responses to positively charged stimuli. The context may also be important here. In the context of filmed stimuli, it may be that individuals find negative stimuli more arousing than positive stimuli. Positive stimuli, while enjoyable, may be more relaxing for individuals while negative stimuli may be more arousing and engrossing. Negative events may induce fear, frustration, or anxiety. Such arousal may trigger empathic responses that would not be triggered by positively charged stimuli.

# The Extended Model

The extended model examines how empathy and emotional reactions to film are related to relevant attitudes and behaviors. The findings on this model are mixed.

Findings on the emotional reaction - attitude relationships differ in the two conditions. There is a

significant relationship between the two in the positive condition such that the more positive an individual's emotional reaction the more negative his or her attitudes toward blindness, a relationship opposite the direction proposed. In the negative condition, however, emotional reactions to the film appear to have little impact on subjects' attitudes toward blindness. Thus, it is difficult to be confident that emotional reactions have an impact on attitudes. This finding, however, does not necessarily come as a surprise. Past research on attitude change would not necessarily lead one to expect exposure to a short film clip, particularly one that is not persuasive in nature, to have much impact on attitudes. This may be especially true given the attitude object in this study -- blindness. It is clear that most subjects had very negative attitudes toward blindness. Furthermore, it is likely that those attitudes were very negative prior to this investigation. Subjects' attitudes toward blindness may very well have been so negative prior to viewing the film that viewing a short film clip about the unpleasant experiences of a blind man would do little to alter them. The film may have only reinforced already existing negative attitudes rather than making them more negative. If the attitude object had been something individuals were less likely

to have strong attitudes about initially, a stronger relationship between emotional reactions and attitudes might have been found.

The relationship of empathic concern to attitudes also differs in the two conditions. In the negative condition, subjects high on the empathic concern dimension also had more negative attitudes toward blindness as hypothesized. This relationship, however, was not observed in the positive condition though no differences would be expected between conditions. These mixed findings make it difficult to conclude whether or not empathy has a role in attitude formation.

Findings are also mixed with regard to the relationship between attitudes and volunteering behavior. The relationship is as hypothesized in the positive condition - the more positive individuals' attitudes, the less likely they are to volunteer. In the negative condition, however, this relationship was insignificant.

It is also interesting to note that in the revised model in the negative condition, a negative path was added from emotional contagion to volunteering behavior such that the higher an individual on the emotional contagion dimension, the less likely he or she was to volunteer. This revision is consistent with the

findings of past research on empathic motivations for altruistic behavior. Stiff, et al. (1988), for example, found a negative relationship between emotional contagion and altruistic behavior. Miller, et al. (1988) found similar results in their study of stress and burnout among individuals in caregiving professions. They found that caregivers who are high in emotional contagion feel they are less communicatively responsive and consequently experience stress and burnout because they feel ineffective in their jobs. Findings such as these suggest emotional contagion is a hindrance to helping behavior. When an individual takes on the feelings of others who are suffering, the experience may be so upsetting that they become incapable of helping or seek to avoid the situation entirely. Thus, subjects who were high on the emotional contagion dimension may have sought to avoid helping the blind because doing so would be too upsetting for them. This reasoning is consistent with the finding that individuals who were high in emotional contagion experienced more negative reactions to the negative film clip.

While the relationship between emotional contagion and volunteering is negative, the relationship between empathic concern and volunteering is positive. Subjects who were high on the empathic concern dimension were more likely to volunteer to help the blind, suggesting that people who are highly concerned about the welfare of others will be more likely to engage in helping behaviors. This finding is also consistent with past research on empathy and altruism (Batson, et al., 1981; Coke, et al., 1978; Stiff, et al., 1988). This finding was consistent across both conditions as expected given that this is a direct path and the relationship should exist regardless of the film clip viewed. Individuals who tend to feel concerned about the welfare of others should be more inclined to engage in helping behaviors in general.

# Limitations and Directions for Future Research

A number of limitations in the current investigation should be noted. First, there is some concern about the nature of the sample. As discussed earlier, there may be selection problems. In addition, subjects were drawn from students in an introductory communication course which raises concerns about external validity.

Second, there are some concerns about the stimulus materials employed in this study. The use of clips featuring experiences of a blind man may not have

provided a fair test of the model under positive conditions. Despite featuring positive experiences, subjects may have still responded to the man's blindness. A stimulus that minimizes the negative cues to which subjects might respond could result in different findings.

A third area of concern is in the measurement of some variables. The emotional reactions scale, for example, was constructed primarily of negatively worded items. The same is true of the emotional contagion and empathic concern scales. If these scales had been more balanced in terms of positive and negative items, stronger effects may have been found in the positive condition. Another measurement concern is the level at which variables are measured. The empathy and volunteering variables are measured at an interpersonal level, while attitudes toward blindness is not. Had attitudes been measured at the interpersonal level as well (i.e. attitudes toward blind people rather than blindness) stronger effects may have been found. This, however, does not explain the different effects found in the two model conditions.

These limitations suggest changes that could be made in future tests of the models proposed. These same models could be tested again with different

subjects, different stimulus materials, and more balanced scales. Such tests might clear up some of the inconsistencies observed in this study.

In addition to retesting these models, this investigation points to a number of other directions for future research. The findings in this study suggest that empathy may play a role in the emotional reaction to filmed stimuli of negative hedonic valence but not those of positive of hedonic valence. Future research should further investigate the nature of empathy and empathic reactions to filmed stimuli. If indeed empathy is only related to the negative experiences of others, why? Is this the case across contexts, or just mediated contexts? Are there special characteristics of negatively charged stimuli that make them greater elicitors of empathic responses?

A second direction for future research is testing of these models with different types of mediated stimuli. Zillmann (in press) suggests that the visual nature of film makes it a powerful elicitor of empathic reactions. Do stimuli that are not visual in nature, such as print or audio messages, evoke similar empathic responses? In addition to examining differences among media, future research could focus on different types of content. Do individuals respond differently to

entertainment content than other types of content such as news? Does content featuring the experiences of real people result in different or more powerful responses than content featuring fictional characters?

In summary, the current investigation suggests that some dimensions of empathy are important predictors of emotional responses to negatively charged film. Individuals high on these dimensions tend to have stronger negative emotional reactions to such stimuli. Furthermore, there appear to be important differences in reactions to positively and negatively charged stimuli. The results of this study suggest empathy may not be an important concept in understanding emotional reactions to positive stimuli, though there are a number of limitations that make it difficult to draw confident conclusions. The findings of this study, while mixed, point to a number of directions for future research on the role of empathy in responding to mediated stimuli.

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