Mortality Salience and Dimensions of Disabilities

by

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Abstract

The goal of this study was to investigate the link between dimensions of disabilities and mortality salience, operationalized as closeness to death. Towards this end, 211 undergraduate students responded to a series of surveys regarding the perceived closeness to death and dimension of a variety of disabilities. The dimensions utilized were a combination of Stone and Colella's (1996) theoretically suggested dimensions (course, peril, aesthetic, responsibility, concealability, disruptiveness) and Thomas' (2001) empirically derived dimensions (risk, response, overtness), resulting in nine total dimensions. Policy capturing analyses demonstrated that some dimensions were predictive of groups of disabilities (i.e. peril was predicative of mental disabilities). Implications for organizational interventions and future research are considered.

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Introduction

Mortality salience (MS) occurs when an individual is reminded of his or her own death. In a research setting, participants may be primed for thoughts of death in a variety of ways, including writing a description of emotions felt when asked to think about one's own death (e.g. Sani, Herrera, & Bowe, 2009), or being interviewed in sight of a funeral home (Jonas, Schimel, Greenberg, & Pyszczynski, 2002). Results from studies of MS show that, in a variety of situations, reminders of an individual's mortality can alter individual outcomes. For example, after completing word fragments with death-related words, men were more likely to desire a higher number of children than men that had not received the MS prime (Wisman & Goldenberg, 2005). Fritsch and colleagues (2007) manipulated mortality saliency by having participants respond to two open-ended questions regarding emotional and physical feelings related to death. Similar to the findings of Wisman and Goldenberg (2005), Fritsch and colleagues (2007) found that after the completion of the mortality salience prime, men and women participants completed word stems with more offspring-related thoughts than participants that had not been exposed to the mortality salient manipulation.

In addition to more personal beliefs, MS can affect a myriad of prosocial behaviors. For example, Jonas, Schimel, Greensberg, and Pyszczynski (2002) reported that charities were viewed more favorably when participants were interviewed near a funeral home compared to when participants were interviewed at a more neutral location several blocks away. In a follow-up study, participants were asked if they would rather donate money to an American charity or an international charity. When participants were interviewed near a funeral home, the MS

manipulation, they stated they would donate an increased amount of money to the American charity, while the amount donated to the international charity remained unchanged (Jones et al, 2002). Although donation is a prosocial behavior regardless of who is receiving the donation, the preference shown to the participant's current country demonstrates a potential ingroup bias towards one's own culture.

Ingroup Bias

Most people inherently prefer to feel like they belong to a group, that they are similar to other people in some way. This feeling of belonging to an ingroup implies the existence of an outgroup. This is perhaps most easily seen in high schools where students create cliques of similar types of people and show differential treatment to students in differing cliques. People that are viewed as being in the same ingroup are normally evaluated more favorably compared to people viewed as belonging to the outgroup (Reyonlds, Turner, & Haslam, 2000). This is not necessarily an intentional discrimination of dissimilar individuals, but rather a more unconscious shift. When paired with a MS condition, an ingroup bias can be seen as a type of defense against the reminder of death by providing a sense of commonality or security when faced with one's own death. For example, Castano and colleagues (2002) had participants respond to a survey regarding, among other things, ingroup bias. In this study, the ingroup bias questionnaire asked participants to compare individuals of their nationality to individuals with a differing nationality. Participants that experienced a MS condition prior to completing the questionnaire displayed a stronger ingroup bias than participants in the control group. Martens, Greenberg, Schimel, and Landau (2004) examined the affects of MS on ageism and discovered that elderly people can be viewed as an out-group. A unique distinction belonging to elderly people is that this out-group is one that people move closer to joining each day. In their study, Martens and colleagues (2004)

found that even the participants that previously identified with elderly people rated themselves as less similar to the elderly after a MS manipulation. More specific to the current study, Hirschberger, Florian, and Mikulincer (2005) found that men and women responded to people with disabilities differently after being presented with a MS stimulus. After the MS manipulation, women responded more compassionately than men towards a person with a disability when compared to those not exposed to the MS manipulation. However, this difference was only observed when the person with a disability was viewed as a member of the in-group (Hirschberger et al, 2005).

It has also been noted that individuals viewed as an outgroup by others may create their own ingroup and outgroup dichotomy within the larger outgroup. In a study involving individuals classified as having either a physical or mental disability, individuals with disabilities rated a person without a disability more favorably than an individual with a disability. This seems counterintuitive since people normally rate those similar to themselves more positively than those different from themselves. However, the researchers posited that this trend could demonstrate that a stigmatized group may be influenced by society's view of the group. Interestingly, when asked to compare an individual without a disability to an individual with a disability that had been successfully rehabilitated, individuals with mental disabilities rated their similarly disabled peer more favorably than the individual without a disability. The effect was not found with individuals with physical disabilities as they continued to rate an individual without a disability more favorably than a successfully rehabilitated individual with a physical disability (Zernisky-Shurka, 1987).

Ben-Naim, Aviv, and Hirschberger (2008) mentioned that individuals with physical disabilities served as a reminder to individuals without physical disabilities that they could

become disabled. However, this concept could apply to individuals with a wider range of disabilities. Martens et al. (2004) demonstrated that some groups of individuals might actually serve to prime a MS-type reaction in other people. Since a MS condition is one in which individuals are reminded of death, it is feasible that individuals with disabilities being viewed as outgroup members might also induce an ingroup bias in people without disabilities.

Background on Individuals with Disabilities

The current study aims to discover which aspects of disabilities can invoke thoughts of death in an individual without a disability, thus creating a morality salient situation. These results are valuable when exploring the selection of people with various disabilities for jobs. In 2006, 18% or 51.2 million Americans were classified as having a disability, with 12% (32.5 million) of these individuals falling into the category of severely disabled (United States Census Bureau, 2006). In 2005, 56% of 16 to 64 year old people with disabilities were employed compared to 88% of individuals within the same age range without disabilities (United States Census Bureau, 2006). Perhaps, individuals with disabilities remind other individuals of mortality salience, or their own eventual death, which could result in an ingroup bias such that a person with a disability may not be hired for a job for which he or she is otherwise qualified. This may not be an intentional discrimination on the part of the employer, but perhaps an unrecognized reaction. Before such a relationship could be considered, it would be useful to discern the aspects of a disability that might lead to a higher level of MS, and in turn, potential differential treatment.

Dimensions of Disabilities

Stone and Colella (1996) proposed one model of hypothesized factors that may influence the treatment that people with disabilities receive in organizations. This comprehensive model included factors of legislation, organizational characteristics, attributes of an individual with a

disability, attributes of observers, and psychological consequences for observers to name a few. The attributes of the individual with a disability that are most relevant to the present study are described in more detail below.

First, aesthetic quality refers to the attractiveness of a disability. Stone and Colella (1996) proposed "the more unattractive or repulsive the disability, the more negative will be others' reactions" (p 362). For example, others may view an individual with a facial disfigurement as unattractive if the disfigurement disrupts what others view as desirable. The second attribute deals with the amount of responsibility observers place on the person for having the disability, and is referred to as origin. If a person with a disability is perceived as responsible for his or her disability, others will view that individual more negatively. For example, an individual with lung cancer may be perceived as being responsible for the disability because of something the individual did, such as smoking cigarettes, even though there are other causes of lung cancer. Third, the future course of the disability, referred to simply as course, will lead to negative responses when the course of the disability was viewed as progressive, chronic, or incurable. For example, an inoperable brain tumor is a disability with a negative course since a brain tumor is normally considered to be progressive, and inoperable implies incurable. Fourth, concealability, or the visibility of the disability, is more likely to elicit negative responses when the disability is highly visible. For example, an individual with a prosthetic leg may receive differing reactions from others depending on if the individual is wearing pants that cover the prosthetic leg, or shorts that allow the prosthetic to be visible to others. Some disabilities may cause uncertainty or strain in social interactions and a disability that causes more uncertainty or strain would lead to more negative responses from observers. This fifth attribute is labeled disruptiveness. An individual with Tourette's syndrome may be considered disruptive to others since the syndrome

is characterized by vocal or motor tics. The final attribute is peril, the "perceived level of threat, danger, or contagion they pose to others" (Stone & Colella, 1996, p 365). Disabilities ranking higher on peril may be more likely to be treated negatively by others. Although not as ostracized as they once were, individuals with leprosy are often viewed as highly contagious individuals.

Although the theoretical approach to attributes of a person with disabilities that may influence perceptions and treatments in organizations seems fairly comprehensive, some attributes may be overlooked. Thomas (2001) approached this issue in a more empirical way. First, a group of participants were asked to list all possible concerns they could think of when considering a person with a disability. These concerns were then reduced to one-word phrases and presented to a second group of participants, who then categorized the initial concerns into sixteen overarching categories of concerns. In a follow-up experiment, participants were asked to state how associated an individual with different disabilities were to each of the sixteen concerns. These concerns were further reduced statistically to three factors that affect the perception of people with disabilities: overtness, risk, and response.

The first factor, overtness, included not just the visibility of the disability, but also if the person with a disability requires special accommodation. Individuals with quadriplegia, or the loss of use of all limbs, require special assistance in order to perform tasks others take for granted, such as brushing their teeth. Risk, the second factor, encompassed the degree of uncertainty associated with this disability, as well as the novelty of the origins of the disability. Some disorders, such as multiple sclerosis, often seem unpredictable since the symptoms of the disability may vary in severity from day to day. The final factor, response, related to the way in which the person with a disability responds to the environment around them (i.e. oversensitivity, not responding well to stressful situations). For example, an individual with hearing

impediments, such as deafness, benefit from learning sign language. Refusal to learn sign language would be a maladaptive response for such an individual.

Although some factors suggested by Thomas (2001) seem to be in line with the attributes suggested by Stone and Colella (1996), for example risk and peril, the terms encompass different aspects of a disability. Risk is more focused on uncertainty, while peril contains negative effects the disability may have on a person without that disability. It is possible that a disability that is highly associated with risk could be not at all associated with peril. By combining the factors empirically derived by Thomas (2001) and the theoretical attributes suggested by Stone and Colella (1996), the current study may be better able to understand the dimensionality of perceptions of individuals with disabilities. Also, by combining the two models, a comparison between the two can be made which might allow for improvements such that one unified model, based in both theory and data, could be used to further the study of personal attributes influencing perceptions of individuals with disabilities.

Prior Research regarding Individuals with a Disability

Research on observers' attitudes towards individuals with disabilities is not a new concept, nor is research on differences in attitudes towards individuals with disabilities. Tringo (1970) proposed a hierarchy of preference in which people were found to prefer to interact, both personally and professionally, with people with certain disabilities, such as an individual with an ulcer or an individual with arthritis, to individuals with other disabilities, such as individuals with alcoholism or individuals with a mental illness. Jones and Stone (1995) reported a similar hierarchy of preference for working with individuals with disabilities. More specifically, Jones and Stone found individuals expressed increased discomfort when working with people affected by HIV, drug addictions, and mental illness.

Individuals with disabilities face larger issues than just the feelings of their co-workers. For example, Gouiver, Sytsma-Jordan, and Mayville (2003) examined preferential job placement of hypothetical applicants with disabilities. In their study, participants were provided resumes and medical information for four applicants and were asked to rate each applicant on statements regarding expected job performance, expected interpersonal skills, and negative evaluations (comprised of likelihood of missing work and likelihood of quitting). Participants were also asked to select an applicant for one of two jobs (low-complexity and high-complexity) from all possible paired comparisons. Gouiver and colleagues (2003) reported that overall, an individual with a mental disability was less likely to be hired than an individual with a back injury. These results demonstrate a need to better understand the relationship between type of disability and potential effects on hiring decisions. The present study aims to create a better understanding of the previously described attributes of disabilities and the effects of those attributes on judgments made by others.

Methodological Approach

An important aim of research is to provide relevant information that can be applied to answer questions of interest. Questions that are directed at investigating how individuals make decisions can be aided by using a policy capturing approach. Policy capturing studies are typically used in an attempt to make inferences about how individuals make decisions. This is typically done through the use of vignettes in which a few key factors are altered across trials or participants. The researcher can then assign weights to the altered factors to discern what factors were more influential in the decision-making process. Researchers have used this approach to look at a variety of areas. Karren and Barringer (2002) reviewed the past 25 years of five management journals: *Journal of Applied Psychology, Personnel Psychology, Journal of*

Management, Academy of Management Journal, and *Organizational Behavior and Human Decision Processes*. In these journals, 37 articles utilized a policy capturing approach methodology. Most of the articles dealt with job choice, performance evaluation decisions and applicant ratings. Martocchio and Judge (1994) looked at employees' reasons to be absent by using a policy capturing approach. As the authors point out, this approach "permits researchers to infer the relative importance of particular factors that are related to an individual's decision making process" (Martocchio & Judge, 1994, p. 366) In 2002, Rotundo and Sackett studied three aspects of job performance (i.e. task, citizenship, and counterproductive performance). A primary goal of their study was to "investigate the way in which raters use information about the different components of job performance to produce a judgment about overall job performance" (Rotundo & Sackett, 2002, p. 70). More recently, Newman and Lyon (2009) used a policy capturing approach in an examination of avoiding adverse impact in recruitment methods while maintaining productivity.

The studies mentioned are all answering different research questions, but are getting at the same general idea: How do people integrate and weight different pieces of information to come to an overall decision? The present study is interested in that same general question. Specifically, how does a person make an assessment about a situation, namely how close to death that person perceives an individual with a disability? This is among the first studies to explicitly link the concept of mortality salience and its affects on perceptions of individuals with disabilities.

This study is a modified policy-capturing study in that participants were given a general description and information regarding cause and treatment associated with different disabilities rather than vignettes about each disability; however, the goal of understanding a decision-making

process is similar. In the current study, individuals decided how close to death they viewed individuals with various disabilities. Rather than interpreting correlations between each dimension and closeness to death rating, a policy capturing approach will generate weights to be assigned to the various dimensions, allowing for some dimensions to emerge as more influential in the determination of the closeness to death of a disability. Since a policy capturing approach attempts to discern how a person arrives at a decision rather than just the outcome itself, this approach can be especially useful for untangling the components involved in the perception of an individual with a disability.

Because this study was more interested in the attributes of disabilities rather than the particular disability itself, the weights generated by those attributes should generalize to a broader range of types of disabilities than just the few disabilities chosen for this study. This should also allow researchers to focus on what aspects of disabilities generate differing responses in other people. Practitioners could use information learned about attributes of disabilities not only to help businesses avoid biases, but also aid in the creation or improvement of training programs to attempt to decrease negative perceptions.

Methods

Participants

Undergraduate students at a large southeastern university were recruited for participation in exchange for extra credit in the psychology course of their choosing. Overall, 211 undergraduate students participated in the study that took place over the course of two semesters. Of the participants, 56 were male, 154 were female, and one chose not to report his or her gender. The average age of participants was 19.99 years old (SD= 1.86) with 87.2% Caucasian, 6.6% African American, and the remaining 6.2% in various other categories.

Procedure

All measures were presented online. First, participants were presented with the name of a disability and a description at the top of the page. Participants were asked to rate the disability on the disability questionnaire for each of the 10 descriptions. The presentation order of disabilities was partially randomized rather than completely randomized such that the last description the person responded to was an individual with no disabilities. This was done to provide for a control item for responses, but was presented at the end to avoid any potential effects on the ratings of disabilities appearing after the control. The participants also completed a closeness to death questionnaire for the 9 disability types and the control, as well as an exposure questionnaire for the 9 disability types and a general demographic questionnaire.

Measures

Disability Descriptions. In an attempt to capture a wide range of disabilities, participants were presented with 9 different disabilities. These disabilities are: bipolar disorder, depression,

dyslexia, cirrhosis of the liver, retinitis pigmentosa, seizures, HIV positive, syphilis, and tuberculosis. According to the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 2000), the first three disabilities fall under the mental disabilities category (labeled (M) in Appendix B), the next three disabilities are classified as physical disabilities (labeled (P) in the appendix), while the last three disabilities are considered contagious (labeled (C)). These distinctions are made because it is feasible that the ratings on attributes may be similar based on type of disability. For example, mental disabilities may consistently be ranked lower than physical disabilities on the concealability dimension. Each disability was presented with a description obtained from www.webmd.com. This web site was chosen over dictionary definitions to provide a well-rounded description. Also, www.webmd.com seems a more likely consulted source of information regarding physical or mental ailments than a dictionary. In addition to the 9 disabilities, a description of a person without disabilities appeared as the last item to provide a control variable. All descriptions are provided in Appendix A.

Disability Questionnaire. Three statements represented the dimensions proposed by Thomas (2001). This set includes items such as “overtness—disability is visible and might require accommodations” and “risk—disability has a low degree of risk or uncertainty” and were ranked on a scale ranging from 1, “not associated”, to 7, “highly associated”. Six statements were created from Stone and Colella’s (1996) theoretical model. These statements include items such as “concealability—disability is not apparent to others” and “course—course of disability is more progressive, chronic or incurable” and were ranked using the same scale mentioned above. An example using “tuberculosis” is presented in Appendix B.

Closeness to Death. In this study, mortality salience was operationalized as how close to death a participant views a particular disability. Three items were used to assess this: “In general, how close to death would you view a person with this disability?”, “In general, how soon do you think a person with the following disabilities will be in his or her grave?” and “In general, how likely do you think an individual with the following disability might die from this disability?”. Each question was presented in a matrix format, with the question and response scale at the top and the list of disabilities down the side. The order of disabilities was randomized for each question, and the order of question presentation was also randomized. The items were rated on a 7-point scale. Anchors of “not at all”, “moderately”, and “very” were provided at 1, 4 and 7, respectively.

Exposure Rating. Exposure to each disability was assessed by a single question of “How much exposure or experience have you had with a person with the following disabilities?”. As was stated previously, the question was presented in a matrix format with the question and response scale at the top and the disability types along the side. The question was presented with a 7-point scale rating with weights of “no exposure” at 1, “moderate exposure” at 4, and “great deal of exposure” at 7. In order to determine if type of exposure differentially affects ratings of people with disabilities, a checklist was provided for participants to check different types of exposure, for example “a family member or close friend has this disability” and “worked with someone with this disability”. Additionally, participants were asked if they personally have the disability.

Demographic Questionnaire. Demographic information was gathered on each participant’s age, gender, and ethnicity. This information allowed for these factors to be controlled for, if necessary, in the data analysis stage.

Data Analysis

Using the distinction presented by Aimen-Smith, Scullen and Barr (2002), the present study can be classified as answering a nomothetic question, which is characterized by a "focus on the factors that predict the overall tendencies in decision aggregated across many decision makers" (p. 392). As such, ratings from different participants for each disability were combined as a composite score for each dimension of that disability, which was more informative in this study than knowing the individual tendencies of each participant. The composite score of each dimension will act as independent variables, while the composite score from the closeness to death item will act as the dependent variable.

Results

Descriptive statistics for all variables are reported in Table 1. Correlations for all measures are reported in Table 2. For the table of correlations, disability type is listed across the top of the table, and dimensions are listed along the left side of the table. Since a step-wise regression was utilized, it is feasible for a given disability that multiple dimensions could be correlated to the outcome variable of closeness to death rating for an individual with that disability that may not be a significant predictor in the regression. For example, for tuberculosis, course, aesthetics, disruptiveness and overtness are all significantly correlated with the composite closeness to death rating for an individual with tuberculosis. However, only course and aesthetics are significant predictors in the regression analysis. In fact, course was significantly correlated with the composite closeness to death ratings of all disability types, while some dimensions were significant for only one or two of the three subsets of disability types. Interestingly, correlations between closeness to death ratings and aesthetics were significant for physical disabilities (cirrhosis, retinitis pigmentosia, and seizures) and contagious disabilities (HIV, syphilis, and tuberculosis). Correlations between closeness to death ratings and disruptiveness, as well as overtness, were significant for all contagious disabilities. Finally, correlations between closeness to death ratings and peril were significant for all mental disabilities (bipolar disorder, depression, and dyslexia) and responsibility was significantly correlated to closeness to death ratings of all physical disabilites.

Covariate Analysis. To control for age, ethnicity, and exposure, these variables were entered into the first block of the regression analysis. The 9 dimensions of disabilities were

entered into subsequent blocks in a step-wise regression so that only those dimensions that were significantly predictive of the outcome variable of closeness to death were included in the regression.

To test if different kinds of exposure had a differential effect on the ratings of the closeness to death composite score, the overall exposure question ("How much exposure or experience have you had with a person with the following disabilities?") was utilized in an initial step-wise regression. At an alpha level of .05, HIV was the only disability for which exposure was a significant predictor of the perception of closeness to death. However, when an additionally regression analysis was conducted to further examine which types of exposure significantly predicted closeness to death, none of the types of exposure included in this study were significant on their own (ranging from having the disability to working with an individual with this disability). Thus, exposure was not included as a covariate.

To test if age or gender had a differential effect on the perceptions of closeness to death, both were included in step-wise regressions with the dimensions of each disability predicting perceptions of closeness to death. Although each of these variables was significant for a few various disabilities (i.e. age was significant for cirrhosis of the liver and ethnicity was significant for dyslexia), there was no apparent pattern to the results or logical rationale as to why these factors were significant for some disability types and not others. Considering the extreme range restriction of age (95.38% of the sample was between 18 and 22), the use of age as a control variable is not appropriate. With this in mind, age is not included in any of the regressions. Ethnicity had a similar restriction with a sample that was 87.20% Caucasian. This is larger than the percent of Caucasians in the United States at large (79.96%, www.indexmundi.com/united_states/demographics_profile.html). With this in mind, ethnicity

was also removed from the regressions. Thus, any spurious results found in this study may have been due to population specific issues rather than true differences based on age, ethnicity or exposure to a given disability. As such, no covariates were included in the analyses presented here.

Regression Analyses. Step-wise regression was conducted with the composite score of closeness to death for that disability (i.e. depression) as the dependent variable and all the dimension responses for that disability (i.e. course, peril, etc) as the predictor variables. Table 3 contains the regression results for mental disabilities; Table 4 contains physical disabilities results; and Table 5 has the results for contagious disabilities. Since a step-wise regression was utilized, only the significantly predictive dimensions are included with their appropriate disability type. For the control of an individual with no disability, disruptiveness, risk and aesthetics were significant in predicting the individual's closeness to death. These results are displayed in Table 3.

The mental disabilities included in this study are bipolar disorder, dyslexia, and depression. As displayed in Table 3, for an individual with bipolar disorder and an individual with dyslexia, only peril was significantly predictive of evaluations of closeness to death. For depression, peril was also significantly predictive of closeness to death, as was course. Overall, it seems that the most predictive dimension for mental disabilities was peril, which is defined as being a threat to others or self.

The physical disabilities included in this study are cirrhosis of the liver, retinitis pigmentosa, and seizures. For cirrhosis of the liver, concealability and course were both predicative of closeness to death assessments (see Table 4). For retinitis pigmentosa, responsibility, peril, and aesthetic dimensions were all significantly predictive of closeness to

death perceptions. In predicting closeness to death for individuals with seizures, course, similar to cirrhosis of the liver, responsibility, similar to retinitis pigmentosa, and disruptiveness were the significant dimensions for this disability. Overall, course, the progression of the disability, and responsibility, how responsible the individual is for their disability, were the most common dimensions for physical disabilities.

The contagious disabilities included in this study were HIV, syphilis, and tuberculosis. For an individual with syphilis, course, disruptiveness and overtness were predictive of closeness to death evaluations (see Table 5). Course was also predictive of closeness to death for tuberculosis, as was the dimension for aesthetics. For an individual with HIV, course, disruptiveness, and overtness were significant predictors of closeness to death perceptions. Overall, the most commonly occurring dimensions for contagious disabilities were course and disruptiveness. Course is how progressive the disability is perceived by others and disruptiveness is how much strain or uncertainty the individual is perceived to cause in social interactions.

Discussion

By noting the similarities and differences within each subset of disability types, two main points can be drawn. First, within each group of disabilities (i.e. mental, physical, contagious), at least one disability differed from the overall pattern, either by having an additional dimension, or lacking one of the common dimensions presented. Future research should examine why these slight differences occurred. It could be that mental, physical, and contagious are not the most appropriate divisions of types of disabilities. Additionally, the differences between the disability types could be the same differences driving negative outcomes in other outcome measures. By ignoring the differences between the disabilities, researchers could come to misleading interpretations and in turn suggest inapplicable interventions to practitioners. For example, in this sample, overtness was predictive of closeness to death ratings of an individual with syphilis. This dimension was not predictive for the other two disabilities in the contagious group so it was not considered to be an overall predictive dimension. It is possible that for an individual with syphilis, the overtness of the disability is what is contributing to a different outcome variable, such as willingness to work in a group. If only course and disruptiveness are considered, the unique aspect of overtness is lost. Second, and more interestingly, some generalities can be made about each group of disabilities based on the overlapping dimensions. Overall, there is consistency within the overarching disability types, but we must be sure not to forget the differences between, and within, the disabilities types.

For mental disabilities, peril is the most predictive dimension of perceptions of closeness to death. Peril is the perceived level of threat an individual with a disability poses to themselves

or others. For mental disabilities, it is logical that the perceived threat the individual poses is predictive of their closeness to death rating. Often times, mental disabilities are not readily apparent to onlookers, but the actions caused by those disabilities are visible. For example, if an individual is displaying suicidal tendencies or is acting unpredictable or reckless, an observer might perceive that individual as a threat to his or herself (Stone & Colella, 1996). That perception of peril could then trigger an increased mortality salience response; should an increased mortality salience response relate to colleagues behaviors towards an individual with a mental disability, organizational interventions may be considered to alleviate this negative response. An organizational intervention to reduce the perceptions of closeness to death could target this peril concept and familiarize participants with warning signs of suicidality or dangerous behavior, for example, so that people do not automatically assume that anyone with a mental disability will act in such a threatening manner.

Course and responsibility are the most predictive dimensions overall to mortality salience for the physical disabilities. Stone and Colella (1996) suggested that a progressive, chronic or incurable course of a disability is likely to lead to negative responses from others. It seems almost intuitive that someone would perceive an individual with a progressive disability as being close to death. Indeed, many people have a preconceived notion of the progression of various disabilities, notions that may or may not be correct. Again, individuals with physical disabilities may trigger a mortality salience response, which we may assume will lead to negative interactions with colleagues. If so, an organizational intervention aimed at reducing negative views due to course of the physical disability could be aimed at educating others about advances in medical technology and treatment options for disabilities that are commonly perceived to be the most progressive or incurable. Such an intervention could be a subtle ongoing effort, such as

a brief column in an organizational newsletter or interesting articles posted in common areas. Responsibility was also found to be predictive of closeness to death for two of the three physical disabilities in the present examination. Responsibility was defined by Stone and Colella (1996) as the amount of responsibility placed on the individual with the disability for his or her condition. For this dimension, it was suggested by Stone and Colella that the more accountable for the disability observers viewed the individual with a disability, the more negative the reaction to that individual. In this study, that would result in a higher closeness to death rating of individuals perceived to be responsible for their physical disability. Similar to the intervention suggested for course, organizations could provide information regarding causes of various common or harshly stigmatized physical disabilities, such as seizures.

For contagious disabilities, course and disruptiveness are the most predictive dimensions of mortality salience overall. The argument for course with respect to physical disabilities may also apply to course with respect to contagious disabilities. Similarly, the organizational interventions suggested for countering the effects of course for a physical disability would be advantageous to reduce bias against individuals with contagious disabilities. The second predictive dimension for contagious disabilities is disruptiveness, which refers to the amount of uncertainty or strain in social interactions perceived to be generated by an individual with a disability. It is logical that closeness to death for contagious disabilities would be predicted by the amount of disruption caused because contagious disabilities can create varied reactions in social situations. Since, as is obvious in the name, contagious disabilities can be spread from one person to another, people may be wary of individuals with contagious disabilities when they are in a group setting. Part of this may be due to misunderstandings regarding the true contagiousness of the disability, the method(s) of transmission, or other stigmatizing aspects

unique to contagious disabilities. Similar to the suggested interventions for educating people about the cause, treatment, and course of physical disabilities, interventions aimed at reducing mortality salience due to perceived disruptiveness could address the issues that cause social uncertainty. Again, these issues, such as transmission and misconceptions regarding the individual with a contagious disability, could be addressed in an ongoing manner via a column in an organizational newsletter or interesting articles shared in a common area. There are many advertisement campaigns that are geared towards encouraging people to get tested for HIV (http://www.hivtest.org/), informing viewers how often people in the United States are infected with HIV (http://www.nineandahalfminutes.org/), or spreading general knowledge about HIV (http://www.cdc.gov/hiv/aaa/). It is hard to quantify the results of such ad campaigns, but an organization could evaluate perceptions about an individual with HIV before and after instituting any informational initiatives.

For an individual without a disability, disruptiveness, risk and aesthetics were the dimensions that arose as significant predictors of closeness to death. As a control, the individual without a disability allows an understanding of what dimensions relate to closeness to death in a non-disabled population. As previously stated, disruptiveness is the amount of strain caused in social settings. If any individual is acting sporadically, regardless of the reason for that behavior, observers perceptions of closeness to death are more likely to be primed compared to normative social behavior. In many social situations one can observe the social isolation of someone that is acting contrary to the norms of the group. The next predictive dimension was risk. This dimension from Thomas (2001) was operationalized as the general degree of uncertainty or risk, not specific to social situations. This could encompass social uncertainty as well as the general uncertainty present when interacting with someone unfamiliar. Finally, the aesthetics dimension

was indicative of a higher closeness to death composite rating. General thought regarding the evaluation of aesthetic qualities of others states that humans are evolutionarily predisposed to favor some traits over others. With that in mind, it is logical that for an individual without a disability, the aesthetic evaluation made by others would be connected to a form of bias, closeness to death in this instance.

Limitations

As with all studies that utilize a student sample, it is possible that the results found with this sample will not generalize to a non-student, workplace sample, especially with the present age and ethnicity range restrictions. While this is a valid concern, for the current study, a student sample seemed the most logical. Since this was an exploratory study, a student sample allowed the researchers to perform a preliminary exploration with an easily accessible sample. Future studies should validate these findings with a non-student sample, perhaps a sample of working adults.

A second limitation was the use of a single item to measure each dimension. While this is far from ideal, it was necessary due to survey length. The items were created from the previously stated dimensions, either empirical or theoretical. As such, one item per dimension was the most intuitive way in which to test the dimensions. If multiple items had been used to assess each dimension, it would have been necessary to first assess which items loaded on each dimension. Furthermore, it is possible that the dimensions (i.e. course, peril, etc) used in the current study are actually overlapping constructs that could be condensed before analysis. Future research should examine the dimensionality of the dimensions of disabilities used in the current study to investigate this possibility. After dimensionality had been determined, the multiple items could be added to the existing study. As previously mentioned, the length of the study would have been prohibitive. Future studies should create multiple items for each dimension and assess the dimensionality of the scale to ensure the appropriate distribution of items and to examine the possible overlap of some of the dimensions presented in this study

The third limitation was the length of the study. It is possible that participants were fatigued by the conclusion of the measures administered. The survey took approximately an hour to complete. In order to balance the effects of fatigue, all measures in the study were randomized so that all items within a measure and all measures were presented in a random order to each participant. Any effects of fatigue should equal out over all of the participants. Of course, future studies would do well to shorten the presented materials or perhaps present the measures in multiple waves. Both of these options would have their own limitations, but as always, limitations of the method design are inherit to each study.

The fourth and fifth limitations involve the disabilities themselves. To begin with, only a few disabilities were presented. It is possible that these findings are specific to the disabilities utilized. Future studies should examine the relationships between a different set of disabilities and the associated closeness to death perceptions to ensure that these results can generalize to a large set of disabilities that could be present in the workplace. The next limitation revolves around the descriptions provided for each disability. Definitions of each disability were provided to all participants, but it is unknown what exactly each participant was considering while answering the questions regarding the particular disabilities. Additionally, we cannot be sure that each participant read all the disabilities descriptions. However, this limitation could be true for any sample.

Implications

The results of this study can serve as a starting point for an entirely new line of research. It seems that often in disability research, there is a focus on particular kinds of disabilities, such as blindness or deafness. However, if it was possible to find dimensions, such as course, which could be used to predict meaningful outcomes, these dimensions would be much easier to generalize across a larger group of disability types whereas results found for a single disability might not generalize to another disability. This potential generalizability would be very useful for practitioners in creating interventions and awareness while selecting individuals for jobs, promotions, or firing. Instead of research considering selection bias against a specific disability, research could consider selection bias against those disabilities exemplifying peril, for example. More specifically, future research could examine if a job in and of itself can induce feelings of mortality salience. If so, are individuals with a disability that is perceived as closer to death more or less likely to be hired for such a job? In this study dimensions of disabilities were found to be linked to the outcome of closeness to death. Does the pattern uncovered here mirror the pattern that occurs in other outcomes, such as social stigma or willingness to work as a group member? Do the combinations of dimensions present in a disability affect work outcomes, such as promotion, work group interactions, or opportunities for involvement in extra programs, such as mentoring or additional training? For these dimensions to be truly useful, it is necessary for research to continue to use this approach in analyzing the connection between disabilities and closeness to death, as well as other measures of mortality salience.

Terror management theory is based on the idea that implicit reactions occur when an individual is confronted with reminders of their own death, often referred to as mortality salience. This theory suggests that mortality salience increases stereotypic thinking as well as an increased bias toward groups a person is a member of (ingroup bias). In other words, ingroup bias is the favoritism of people viewed to belong to one's own group over individuals categorized as being different from the individual. Ingroup bias can be seen as a protective measure against mortality salience, or the reminder of one's own eventual death. Ingroup bias can be induced by many different things: in some instances simply being an individual with a disability is enough to create a group division. Mortality salience has been linked to outcomes such as a stronger ingroup bias (Castano et al, 2002), the creation of an outgroup based on a mortality salient reminder (Greenberg, Schimel, &Landau, 2004), and differential responding to individuals with disabilities after a mortality salient prime (Hirschberger, Florian, & Mikulincer, 2005).

This study aimed to delve deeper into the aspects of a disability that could lead to differential perceptions. By knowing the relationship between the dimensions of disabilities and the assessment of closeness to death, organizations could implement a training program to help expose their employees to the potential feelings that may be aroused by an individual with a disability that could in turn affect the treatment of that individual. The focus of such a treatment effort would be on the feelings of death aroused by viewing an individual with a disability. This would be a different structure for a training programming involving interactions with individuals with disabilities, and as such, research would need to be conducted to assess the effectiveness of such a training system. Additionally, future research should link the dimensions of disabilities to more readily accepted workplace outcomes, such as job placement, work group interactions,

promotions, and a myriad of other decisions that could be affected by the decision-makers' assessment of the closeness to death. This study begins the link between dimensions of disabilities and mortality salience which brings research closer to testing terror management theory; specifically the hypothesis that dimensions of disabilities will influence an individual's mortality salience, thus triggering ingroup bias or favoritism leading to negative treatment and outcomes for individuals with disabilities. Future research should consider this hypothesis as it may have implications in a real-world organization with a variety of human resource processes. Results of future studies could aid practitioners in reducing bias in the workplace, and in organizational practices in general.

As indicated previously, the information presented here may be used to aid in intervention efforts of organizations. By understanding the tendencies of particular dimensions to predict closeness to death for a subset of disabilities, (i.e. peril predicting mental disability ratings of closeness to death), organizations can choose the dimensions that would be most relevant to their workforce and create awareness programs focusing on those dimensions such as those mentioned previously. Although such programs would not eliminate bias or a perception of mortality salience by educating employees about the particular dimensions and their relationship to mortality salience, operationalized as closeness to death in the current study, employers can attempt to reduce at least some in-group/out-group bias that may negatively affect their employees with a disability.

This study considered the evaluation of disabilities in a relatively unexamined approach. Many studies involving disabilities look at the disability as a whole rather than breaking that disability into smaller dimensions, like course and peril, as we did in the current study. This allowed us to better examine the relationship between an individual with a disability and the

associated perception of closeness to death. This is an important first step in a new way of approaching outcome variables in general, as well as providing a useful starting point for a deeper examination into the effects of mortality salience on an individual with a disability. Researchers should continue to examine dimensions of disabilities and practitioners should begin to incorporate these findings into their awareness programs to begin to lessen the negative outcomes experienced by individuals with a disability.

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Table 1. Descriptive Statistics

	Mean	Std. Deviation
Closeness—WO	1.27	0.67
Closeness—BD	1.94	0.96
Closeness—DP	2.57	1.14
Closeness—DX	1.31	0.7
Closeness—CL	4.44	1.42
Closeness—RP	2.23	1.3
Closeness—SZ	2.99	1.24
Closeness—SY	3.54	1.52
Closeness—TB	4.21	1.44
Closeness—HIV	5.26	1.42
Exposure—BD	3.21	2.04
Exposure—DP	4.34	2.04
Exposure—DX	3.55	2.09
Exposure—CL	1.68	1.25
Exposure—RP	1.45	1.13
Exposure—SZ	3.19	1.95
Exposure—SY	1.37	0.91
Exposure—TB	1.51	1.15
Exposure—HIV	1.45	1.07

**Note.* Abbreviations are as follows: BD=Bipolar Disorder, CL=Cirrhosis of the liver, DP=Depression, DX=Dyslexia, RP=Retinis Pigmentosa, SZ=Seizures, SY=Syphilis, TB=Tuberculosis, WO=Without a disability

Table 2. Correlations between Dimension and Closeness to Death rating by Disability Type

	No disability	Bipolar Disorder	Depression	Dsylexia	Cirrhosis of the liver	Retinitis Pigmentosia	Seizures	Syphilis	Tuberculosis	HIV
Concealability	0.12	0.01	0.04	0.04	.25**	-0.04	0.03	0.04	0.12	0.02
Course	-.38**	-.18*	-.23**	-.17*	-.20**	.30**	-.27**	-.39**	-.24**	-.30**
Risk	.14*	0.03	-0.06	.15*	0.13	0.07	0.03	0.01	0.09	.16*
Aesthetic	.33**	-0.06	0.1	.28**	.16*	.20**	.23**	.19**	.18**	.28**
Disruptiveness	.41**	-0.04	0.04	-0.02	0.07	-0.07	.20**	.16*	.19**	.28**
Responsibility	-0.08	0.02	-0.11	-.21**	-.17*	-.33**	-.25**	0.03	-0.03	-.15*
Overtness	.34**	0.1	.14*	-.20**	0.04	-.25**	0.01	.24**	.20**	.30**
Peril	.39**	.18**	.19**	.49**	0.03	.24**	0.12	.17*	0.12	.27**
Response to environment	.25**	.18*	0.05	.22**	0.13	.15*	.22**	.15*	0.03	.15*

Note. * indicates significant at the .05 level ** indicates significant at the .001 level

Table 3. Dimensions predicting closeness to death by disability type

Mental Disabilities

Disability type	Dimension	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	t	R^2 for total model
Without a disability	Intercept	.77	.09	8.50**	.206
	Disruptive	.15	.04	4.06**	
	Risk	.04	.02	2.25*	
	Aesthetics	.10	.04	2.17*	
Bipolar Disorder	Intercept	1.56	.15	10.21**	.034
	Peril	.09	.04	2.71**	
Depression	Intercept	2.89	.33	8.72**	.072
	Course	-.13	.05	-2.46*	
	Peril	.11	.05	2.13*	
Dyslexia	Intercept	.82	.08	10.92**	.240
	Peril	.32	.04	8.06**	

Note. * indicates significant at the .05 level ** indicates significant at the .001 level

Table 4. Dimensions predicting closeness to death by disability type

Physical Disabilities

Disability type	Dimension	Unstandardized Coefficients B	Std. Error	t	R^2 for total model
Cirrhosis of the liver	Intercept	4.43	.25	17.66**	.117
	Concealability	.21	.05	4.16**	
	Course	-.20	.06	-3.33**	
Retinitis Pigmentosa	Intercept	2.18	.45	4.86**	.198
	Responsibility	-.17	.06	-3.07**	
	Peril	.13	.05	2.77**	
	Aesthetics	.15	.06	2.52*	
	Course	.13	.06	2.31*	
Seizures	Intercept	4.41	.46	9.69**	.166
	Course	-.18	.05	-3.61**	
	Responsibility	-.21	.05	-4.34**	
	Disruptive	.12	.05	2.37*	

Note. * indicates significant at the .05 level ** indicates significant at the .001 level

Table 5. Dimensions predicting closeness to death by disability type

Contagious Disabilities

Disability type	Dimension	Unstandardized Coefficients B	Std. Error	t	R^2 for total model
Syphilis	Intercept	3.51	.43	8.25**	.190
	Course	-.28	.05	-5.13**	
	Aesthetics	.11	.05	2.21*	
	Disruptive	.11	.05	2.08*	
Tuberculosis	Intercept	4.44	.27	16.37**	.077
	Course	-.18	.06	-3.23**	
	Aesthetics	.13	.05	2.41*	
HIV	Intercept	4.40	.36	12.10**	.178
	Course	-.25	.07	-3.58**	
	Disruptive	.14	.05	2.57*	
	Overt	.14	.06	2.51*	

Note. * indicates significant at the .05 level ** indicates significant at the .001 level

Appendix A

Disabilities and Descriptions

(M) Bipolar disorder

- Mental illness that causes people to have severe high and low moods. Patients may experience periods of normal moods between alternating high or low periods. Severity of symptoms depends on type of bipolar disorder

(P) Cirrhosis of the liver

- Liver may allow bile and poisons to build up. Can lead to high blood pressure and severe bleeding in the digestive tract, as well as kidney failure, diabetes, and increased risk for infections

(M) Depression

- Mental illness characterized by symptoms such as sadness, withdrawal from social activities, irritability, or loss of interest in activities once enjoyed. Depending on the severity, depression may interfere with a person's ability to work, sleep, or eat

(M) Dyslexia

- Lifelong learning disability that can lead to difficulty in reading, writing, spelling, and math. Early intervention can help ease difficulty with problem areas

(C) HIV positive

- Weakens patient's ability to fight infections and other illnesses. Can progress to acquired immune deficiency syndrome (AIDS)

(P) Retinitis pigmentosa

- Progressive loss of vision. Generally, patients first experience loss of night vision, followed by tunnel vision and eventually loss of all vision

(P) Seizures

- Randomly occurring episodes that may go unnoticed, but could also cause loss of consciousness and/or involuntary muscle spasms. Depends on type, but most are controllable with treatment

(C) Syphilis

- Symptoms include painless open sores, and skin rash. Can lead to heart disorders, mental disorders, blindness, other problems associated with the nervous system, or death if untreated

(C) Tuberculosis (TB)

- Weakens immune system, causes damage to lungs or other infected organs, and difficulty breathing. Can lead to death if untreated

Appendix B

Sample of Measures as Presented to Participant

Disability Questionnaire

Tuberculosis (TB)

- Weakens immune system, causes damage to lungs or other infected organs, and difficulty breathing. Can lead to death if untreated

Please rank the above disability using the scale presented below.

Not at all Associated			Moderately Associated			Highly Associated
1	2	3	4	5	6	7

_____Disability makes the person unattractive, upsetting to others, or repulsive (Aesthetic)

_____Disability is not apparent to others (Concealability)

_____Disability is considered more progressive, chronic or incurable (Course)

_____Disability causes strain and uncertainty in social interaction (Disruptiveness)

_____Person with disability is not responsible for his or her condition (Origin—R)

_____Disability requires special needs or accommodations (Overtness)

_____Disability poses a high level of threat, danger, or contagion to others (Peril)

_____Person with disability does not have adaptive response toward environment (Response)

_____Disability has a low degree of uncertainty or risk (Risk—R)

Note: Text in parenthesis is not visible to participant. (R) Item is reverse scored.

Closeness to Death Questionnaire

Disabilities vary in their association with death. For example, an individual with a lisp would not be in danger of an imminent death, but a person with an inoperable brain tumor might be.

In general, how close to death would you view a person with the following disabilities?

Not at all			Moderately			Very
1	2	3	4	5	6	7

Exposure Questionnaire

How much exposure or experience have you had with a person with the following disabilities?

No Exposure			Moderate Exposure			Great Deal Exposure
1	2	3	4	5	6	7

If you have, or have had, experience with tuberculosis, please specify with an **x**.

_____ I have this disability

_____ I have a family member or close friend has this disability

_____ I have had a classmate with this disability

_____ I have worked with someone with this disability

_____ I have volunteered at a facility that had patients/residents with this disability

_____ Other: please specify:

_____