INCHING TOWARDS INTEGRATION: FACTORS AFFECTING COWORKER ASSUMPTIONS ABOUT EMPLOYEES WITH DISABILITIES

By

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ABSTRACT

Employees with disabilities (EWDs) have to overcome many barriers in order to gain employment and become socially integrated into their organizations. Although there are many factors that contribute to the exclusion of those with disabilities, negative attitudes towards EWDs are perhaps the biggest barrier. This study examines how the coworker characteristics of age, education, gender, career/major, and the amount and quality of contact with persons with disabilities, along with the EWD's characteristics of disability type and level of severity, affect the assumptions made about EWDs. This study utilized a 3 x 2 between subjects design, with three categories of disability type (sensory disorder, physical disability, and mental health disability) and two levels of severity (low & high). Profiles were used to house this disability information, and 433 participants responded to items on a survey based on the employee profile provided. Age was positively related to assumptions about EWDs with sensory disorders. In other words, those who are older gave more positive ratings of the profiled employee portraying a sensory disorder (i.e., hearing loss). Our sample also displayed differences across disability types, with assumptions about mental health disability being most negative; however, methodological limitations did not enable a direct inferential test of this finding's generalizability. No significant results were found for the remaining hypotheses. Potential reasons and implications are discussed.

TABLE OF CONTENTS

LIST OF TABLES

Page

LIST OF FIGURES

Page

LIST OF APPENDICES

Page

CHAPTER I

INTRODUCTION

Disability affects many across the United States. A disability is typically defined as "an impairment or lack of ability that limits a major life activity, but allows for gainful employment" (Kulkarni & Lengnick-Hall, 2011, p. 521). Although legislation like the Americans with Disabilities Act (ADA) serves to protect those with disabilities from discrimination and requires employers to offer workplace accommodations, a large number of those with disabilities are kept out of the workforce. In fact, the proportion of those with disabilities who are in the workforce is only 44% compared to 75% for those without a disability (Karger & Rose, 2010). Even when people with disabilities are hired, they often encounter barriers to becoming socially integrated into the workplace. The concept of integration parallels the idea of inclusion. Just as hiring those with disabilities does not ensure their social integration within organizations, including all kinds of minority groups in the workplace (increasing diversity) does not ensure that their environment will allow for them to be completely included (e.g., Ferdman, 2013). The goal for both of these lines of research is to achieve something greater than getting people in the door.

Successful social integration can be defined as when those at work fully accept the new employee; therefore, acceptance is a major component of integration. There are many ways to define acceptance and how it is achieved; however, Vornholt, Uitdewilligen, and Nijhuis (2013) focus on acceptance in terms of attitudes. Though there

are many factors that contribute to the exclusion of those with disabilities, negative attitudes are perhaps the biggest barrier (Copeland, Chan, Bezyak, & Fraser, 2010; Shannon, Schoen, & Tansey, 2009). Because attitudes are highly associated with people's intentions, more positive attitudes are associated with better outcomes (Fishbein & Ajzen, 1975; Shannon et al., 2009). So in order to increase the social integration of people with disabilities, we first need to improve these negative attitudes to increase the likelihood that employers will not only hire but also integrate these individuals after bringing them into the organization. Further, determining what the specific negative attitudes are and what factors influence their creation is important to know, as this information can be used to create interventions to improve the attitudes towards and integration of employees with disabilities in the workplace (EWDs; Popovich, Scherbaum, Scherbaum, & Polinko, 2003).

Vornholt et al. (2013) proposed a model regarding the relationship among attitudes and the factors that affect them, acceptance, and outcomes. They modified Stone and Colella's model (1996) to encompass newer research findings that addressed some of Stone and Colella's proposed factors that affect attitudes towards EWDs. Vornholt et al.'s resulting model (see *Figure 1*) suggested the following relationships: Characteristics of the coworkers, employer and/or organization, and of the employee with a disability (EWD) all have an impact on the creation of coworker's attitudes. Further, these attitudes along with the employer and/or organization and the characteristics of the person with a disability are suspected to determine the level of acceptance that a person with disability has. I will take some time to discuss these three main categories that can impact the

attitudes formed by coworkers in the following sections; however, only the characteristics of the EWD and coworker will be examined in the current study. Additionally, the level of acceptance is thought to have direct implications for the outcomes for the EWD, with higher levels of acceptance associated with greater motivation, satisfaction, quality of life, and self-esteem (Vornholt et al., 2013). Kulkarni and Lengnick-Hall (2011) supported this relationship by citing research indicating that socializing cite supporting research for this link by finding that socializing new employees into an organization "leads to higher organizational identification, satisfaction, and lower turnover intent" (p. 523).

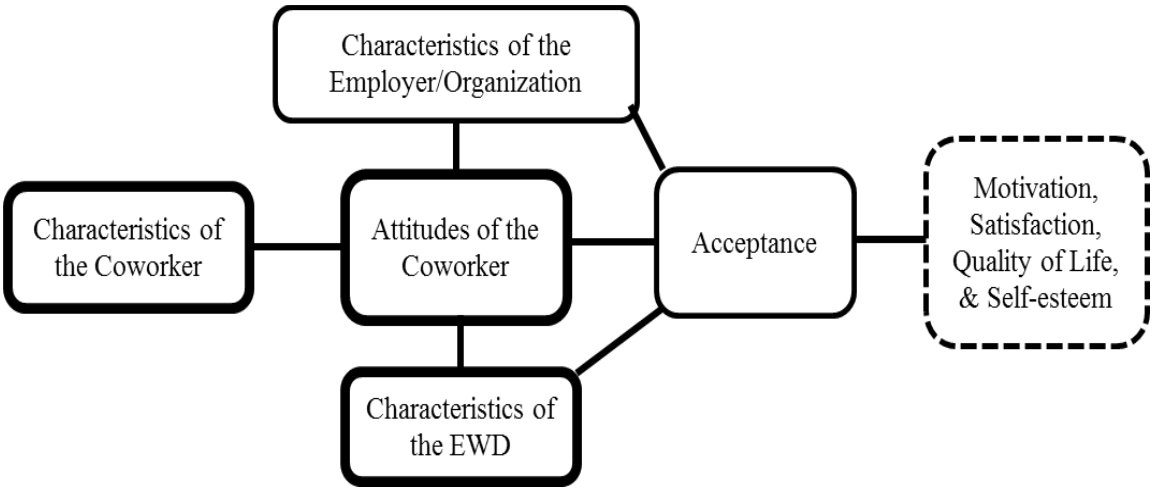

Figure 1. Model Adapted from Vornholt et al. (2013)
Note: Segments of particular concern to the current study are bolded; additionally, some of the descriptive labels have been revised in accordance with the labels used in this literature review

Characteristics of the Organization/Employer

The characteristics of where the EWD is working are important factors to consider as they can influence how the EWD completes tasks and the level of contact they have with other coworkers. Research has addressed how organizational values and culture, along with management practices, affect the attitudes of coworkers and their prospects of becoming completely integrated into the workplace. For instance, Vornholt et al. (2013) cites research by Westmorland, Williams, Amick, Shannon, and Rasheed (2005) that discusses the importance of "disability management practices and procedures" (p. 471) and how doing these correctly is critical to positive integration. A disability management program is how an organization handles disability from the prevention of accidents on the job to the re-integration of those hurt on the job (Westmorland, 2005). Westmorland et al. (2005) interviewed employees who had work-related disabilities and/or injuries, and asked them about their experiences with their organization's disability management program. They found that these employees viewed the granting of accommodations, communication throughout the whole process, and job retraining upon their return as the major components of an effective disability management program. Because these components emphasize the importance of retaining and accommodating EWDs, it conveys the message that the organization values their EWDs. Further, proper socialization practices for those with disabilities who are new to the organization can help to foster teamwork, align employee/employer values, and help to increase employee commitment (Kulkarni & Lengnick-Hall, 2011). Kulkarni and Lengnick-Hall's (2011) study suggests that organizations ensure that they have a "culture

of inclusiveness" (p. 536) by providing accommodations, performance feedback, training, and opportunities to interact with coworkers inside and outside of the workplace.

In addition, more specific job and work elements can affect the level of integration an EWD experiences. For instance, those with intellectual disabilities working only part-time experience less inclusion in all work activities compared to those working full-time, and this is likely to be true of other disabilities as well (Fillary & Pernice, 2006). Another job element that effects integration includes the tasks assigned. Nota, Santilli, Ginevra, and Soresi (2014) discuss that tasks that have lower complexity are perceived as being the most appropriate for those with disabilities. Within their study they asked employers what tasks they thought a person with a sensory disorder (severe hearing loss), psychological problem (anger management issues; aggressive), and intellectual disability (Down syndrome) could perform. The researchers provided the employers with hypothetical profiles that included information about their disabilities, strengths, and also information about prior work experience. Once they collected the data, they coded the tasks using Holland's code, which distinguishes tasks as one of the following: realistic, investigative, artistic, social, enterprising, or conventional (Holland, 1997). Across all three disabilities, only four high complexity tasks out of 320 were suggested by employers, meaning that employers felt tasks with lower complexity (realistic or conventional) were more appropriate. Though the employers were from the metalworking industry and a majority of those tasks are of lower complexity, this research finding supports the idea that disabled individuals may be given lower complexity tasks without consideration of prior work experience and skills because

managers feel these tasks are more appropriate for EWDs in general. Stone and Colella (1996) discuss why this may be of concern. Because lower complexity tasks are associated with lower-status jobs, and status within an organization can influence attitudes felt towards the people in those positions, a low-status job may perpetuate the biases and attitudes felt towards EWDs with lower complexity tasks consequently affecting integration. However, what Nota et al.'s study does not clearly address is whether the assignment of the lower complexity tasks were actually appropriate given the individual's skills and abilities.

Another point about the types of tasks assigned to EWDs concerns what managers choose based on the physical characteristics of a person with a disability. Nota et al. (2014) cite Louvet's (2007) research in which they observed that those with highly visible disabilities were more likely to experience hiring discrimination for jobs requiring interpersonal contact, as hiring managers feared that others would have felt uncomfortable interacting with them. For example, a person missing a limb may be less likely to work as a customer service representative because the manager may believe it will cause customers to feel uncomfortable. Stone and Colella (1996) cite research that supports this claim, stating that the more visible a disability, the more likely "able-bodied people become anxious, avoid contact and react unfavorably to the disabled person" (p. 364).

Managers play an important role in the social integration of EWDs, and one way of aiding this process is by first hiring more people with disabilities. Both Kulkarni and Lengnick-Hall (2011) and Gewurtz and Kirsh (2009) stress that already having people

with disabilities in a work environment increases the likelihood that new-hires with disabilities will be socially accepted. Gewurtz and Kirsh go on to add that hiring more people with disabilities can give the organization a better reputation and increase their diversity, which can lead to more innovation and creativity. Fillary and Pernice (2006) suggest that managers also make sure that people with disabilities are given equal responsibilities, which in turn helps to increase coworkers' fairness perceptions. Making the EWD's tasks more interdependent by allowing EWDs to work with and alongside coworkers may also be within the power of the manager to change. This would be advisable, as this to can lead to a higher level of acceptance perhaps due to the increased contact with fellow coworkers (Butterworth, Hagner, Helm, & Whelley, 2000).

Coworker Characteristics

Much research has been done relating to demographic information of people and their accompanying attitudes towards people with disabilities in general. Because many people will come to work with those who have disabilities, it is important to study attitudes towards fellow EWDs. Overall, research is mixed concerning the effect of age, education level, and gender. Although some research finds no differences, others have found that those that are younger, have higher levels of education, and/or are women generally have more positive attitudes towards those with disabilities (Goreczny, Bender, Caruso, & Feinstein, 2011; Popovich et al., 2003; Rice, 2009; Vornholt et al., 2013). However, Vornolt et al. (2013) does cite a study in Asia that found women to be more discriminatory than men, but this finding is very uncommon. In other words, when significant differences are found, they tend to suggest that a younger, highly educated

woman would be the most likely to have positive attitudes towards people disabilities. This seems to suggest that they would also be the most likely to socially integrate EWDs.

Some interesting research has also looked at the relationship between career field, or major in the case of college students, and attitudes felt towards those with disabilities. As anticipated, those careers/majors in human services (e.g., psychology, social work, occupational therapy, and special education) hold more positive attitudes towards people with disabilities than the general population and those in the careers/majors of political science, business, engineering, and law (Goreczny et al., 2011; Rice, 2009; Vornholt et al., 2013). Perhaps this could be explained in part by the increased exposure to either knowledge of or contact with disabilities, as these factors can work to improve attitudes towards those with disabilities (Copeland et al., 2010; Popovich et al., 2003; Rice, 2009; Vornholt et al., 2013). However, it is important to note that just quantity of experience alone does not necessarily translate into more positive attitudes towards those with disabilities (Shannon et al., 2009). When Nota et al. (2014) found that there were no differences in attitudes towards EWDs between employers who hired EWDs and those who had not, they concluded that the quality of the experience is also important to consider. So although the employers who had hired EWDs had previous contact with EWDs, their contact was brief and uninvolved as they did not act as the immediate supervisors. Interestingly, Shannon et al. (2009) found that "exposure to persons with disabilities who are in positions of power…appears to shape attitudes in more positive directions" (p. 16). More specifically, they found that students who had professors with

disabilities, which have high expert power, had more positive attitudes towards those with disabilities in general (Shannon et al., 2009).

Lastly, the coworkers' perceptions of fairness concerning accommodations given to EWDs can affect coworkers' overall attitudes towards social integration. Accommodations are needed by some EWDs in order to be able to do the required tasks; however, it is not always the case that others feel that accommodations are warranted. When there is not a lot of communication concerning the disability and the disability is invisible, coworkers are more likely to view any accommodations given as unwarranted special treatment and consequently unfair (Colella, 2001; Gewurtz & Kirsh, 2009). Furthermore, if the EWD is given an accommodation and their performance improves as a result, coworkers may view this as particularly unfair and be less accepting when the disability is not highly visible or well understood (Paetzold et al., 2008). This is because some coworkers may judge the fairness of accommodations based on the equity rule in which coworkers compare their amount of input and output with those receiving accommodations (Colella, 2001). Therefore, Colella (2001) asserts that accommodations are more likely viewed as unfair when they are perceived to make the EWD's work easier, to cause coworkers to lose competitive rewards, and/or as unwarranted special treatment. One is more likely to see this sort of judgment in a competitive work environment as individuals compete over resources and rewards are tied to coworkers outperforming one another. Overall, it is important that coworkers feel that accommodations are reasonable, warranted, and fair, as this helps to ensure more positive reactions towards EWDs (Copeland et al., 2010).

Characteristics of the Employee with a Disability

The nature of the disability has often been found to have an impact on the attitudes felt towards those with a disability. Much research has found that people have more negative attitudes towards mental health disabilities than other types of disabilities (Gewurtz & Kirsh, 2009; Nota et al., 2014; Vornholt et al., 2013). For instance, Nota et al. created hypothetical profiles of people seeking a job with a sensory disorder, psychological problem, and intellectual disability. They then measured the attitudes held by real employers/company owners towards these three different 'people' based on the hypothetical profiles. Nota et al. found that employers held more negative attitudes about potential work performance and social acceptability towards those with a psychological problem (aggressiveness and anger management issues) compared to the other two disabilities (Down syndrome and severe hearing loss). Based on the research done by Gewurtz and Kirsh (2009), they suggest that this differential treatment could be due to fact that mental health disabilities tend to be more invisible when compared to physical disabilities. Further, this invisibility and a lack of education concerning mental health disabilities can contribute to the more negative attitudes felt towards those with mental health disabilities compared to other types of disabilities (e.g., intellectual disabilities, sensory disorders, etc.), as people don't understand the limitations associated with them or the appropriate accommodations needed.

Another issue to consider is the course of a disability. Stone and Colella (1996) refer to this as the degree of progressiveness, chronicity, and curability of the disability. The way in which progressiveness is discussed within the disability research is intimately

related to severity. Basically, progressiveness is the extent to which an ailment has increased in severity. So a disability like blindness is quite chronic, meaning that it is long term, incurable, and progressive in the sense that it has become quite severe. To understand how the course of a disability affects attitudes, Nota et al. (2014) stated that "the degree of progressiveness, chronicity and/or visibility of a given disability is directly related to the probability of the person with this disability being classified as undesirable" (p. 512). Although the quote relates more to hiring, Stone and Colella's research (1996) explains how the course of the disability along with other attributes of a person with a disability is linked to subsequent treatment. They claim that the attributes, which can include anything from the nature of the disability to past performance, "influence the categorization of the disabled person, the inferences made about the individual's job-related attributes, performance expectancies, and the subsequent treatment of the person in the organization" (p. 361). So one can see how big of a role the characteristics of a disability and any accompanying stereotypes about that disability can play in an EWD's social integration into an organization.

Another line of research concerning the EWD's characteristics concerns their capabilities and how these are presented. The better an EWD performs (perhaps with the exception of perceived unwarranted accommodations) the greater acceptance they experience in the workplace (McLaughlin, Bell, & Stringer, 2004; Paetzold et al., 2008). Further, when coworkers are exposed to EWDs that portray "positive and healthy personal characteristics," it helps to "minimize stigma and encourage acceptance" increasing positive attitudes towards those with disabilities (Shannon et al., 2009, p. 12).

So when a person is exposed to an individual who is successful despite their limitations, it helps to not only eliminate any societal stigmas that suggest otherwise, but also increases that person's attitudes towards people with disabilities in general. Another thing to consider is how employees present themselves. For instance, when people with disabilities were presented in terms of work experience and strengths, in contrast to the traditional method that focuses on the disability and its limitations, attitudes were more positive (Nota et al., 2014). This could be because the employer/manager is aware that the employee has the capabilities needed for the job, and as a result is more accepting of the EWD.

In addition to the factors mentioned in Vornholt et al.'s model (2013), societal stigmas, incorrect information, and the context in which an interaction with a person with a disability occurred can contribute to the negative attitudes that people maintain (Shannon et al., 2009). Societal stigmas can include just about any thought concerning those with disabilities, and oftentimes these hold incorrect information. For instance, Gewurtz and Kirsh (2009) discuss the stigma that those with disabilities are incompetent. They specifically talk about this stigma relating to mental health disabilities, and the conflict those with disabilities face when deciding whether or not to disclose it due to this stigma. Gerwurtz and Kirsh go on to say that many of those with mental health disabilities, when given proper accommodations, can successfully complete tasks. However, because requesting an accommodation requires disclosing the disability, many choose to conceal their disability and try to manage it. As mentioned earlier, the amount of contact people have with those with disabilities can also directly affect the attitudes

felt towards those with disabilities. Shannon et al. (2009) discuss the impact of these experiences with disabled individuals, finding that negative experiences are associated with more negative attitudes towards those with disabilities.

In order to improve these attitudes, researchers have suggested increased frequency of contact, along with higher quality of contact, as possible interventions (Nota et al., 2014; Shannon et al., 2009). Positive interactions with those with disabilities, especially those in which their positive personal characteristics are displayed, help to create more positive attitudes by minimizing stigma and encouraging acceptance (Shannon et al., 2009). Having already employed those with disabilities at an organization increases the chance of new EWDs being accepted (Gewurtz & Kirsh, 2009; Kulkarni & Lengnick-Hall, 2011). Also, being sure to treat those with disabilities as similar to those without disabilities with regards to work responsibility, helps to improve attitudes towards those with disabilities, especially if they perform well (Fillary & Pernice, 2006). However, if good performance is achieved after an accommodation is given and coworkers do not understand the disability, then they may see this as unfair 'special treatment' and be less accepting of the EWD (Colella, 2001; Gewurtz & Kirsh, 2009; Paetzold et al., 2008).

Hypotheses

Following the key implications from the research above, I present the following hypotheses. For hypotheses one through six, I will do the relevant analysis for each of the three disability types (i.e., sensory disorder, physical disability, and mental health disability).

Concerning Coworker Characteristics:

1. Assumptions about EWDs will be negatively related with age. Specifically, age will be negatively correlated with assumptions about EWDs in the workplace. In other words, those that are younger will have more positive assumptions and those that are older will have more negative assumptions about EWDs.
2. Education will be positively related with assumptions about EWDs. Specifically, education will be positively correlated with assumptions about EWDs in the workplace. In other words, those that are more educated will have more positive assumptions about EWDs.
3. Women will have more positive assumptions about EWDs. Specifically, women will have more positive assumptions about EWDs in the workplace.
4. People with human service oriented careers/majors (e.g., psychology, social work, special education, and etc.) will have more positive assumptions about EWDs. Specifically, those with human service oriented careers/majors will have more positive assumptions about EWDs in the workplace.

5. The relationship between the amount of contact and assumptions about EWDs will be moderated by the quality of contact. Specifically, the relationship between the amount of contact and assumptions about EWDs in the workplace will be moderated by positive contact experiences (i.e., quality). In other words, if there is contact and it is positive, then they will have more positive assumptions about EWDs.
6. The relationship between the amount of contact and assumptions about EWDs will be moderated by the quality of contact. Specifically, the relationship between the amount of contact and assumptions about EWDs in the workplace will be moderated by negative contact experiences (i.e., quality). In other words, if there is contact and it is negative, then they will have more negative assumptions about EWDs

Concerning EWD Characteristics:

7. Those profiles that reflect more severe disabilities will yield more negative assumptions about EWDs when compared to those that are less severe.
8. Mental health disability (MHD) profiles will result in more negative assumptions about EWDs when compared to sensory disorders (SD) or physical disabilities (PD).

CHAPTER II

METHOD

Participants

Participants were gathered using Middle Tennessee State University's (MTSU) psychology research pool via the SONA online system, and made available more broadly to adults in the United States via Amazon Mechanical Turk (Mturk). Participants had to be a minimum of 18 years of age and residents of the United States in order for their cases to be included in analyses. MTSU students received credit for completing the survey in order to meet a general requirement for their course, and small incentives were offered to participants who took the survey via Mturk. I collected data from 575 participants. However, only data from the participants who passed the manipulation check questions concerning the identification of the disability and its severity were retained, leaving 433 cases. Of those cases, 23% were collected from SONA and 77% from Mturk. There were 182 participants that identified as male, and 245 participants that identified as female. Participants ranged in age from 18 to 74 with a mean 32.63 years (*SD* = 14.55). The highest level of education achieved varied, with most receiving at least some college. More specifically, 41% of participants' highest education is some college, with another 28% highest level of education achieved being a Bachelor's degree. There was no one predominant major/career field in which the participants belonged. The largest category was the "other" category in which about 25% of participants cited a

multitude of different types of careers. The next largest category was business (21%), followed by healthcare (13%) and technological (13%).

Design

The current study has a 3 x 2 between subjects design, with three categories of disability type (sensory disorder, physical disability, and mental health disability) and two levels of severity (low & high). The dependent variable is the Assumptions about EWDs measure for each disability type. In order to manipulate the independent variables, hypothetical employee profiles were used, in which the severity and type of disability were contained in the HR notes at the bottom of the employee profile. Further, the six hypothetical employee profiles were randomly distributed across participants.

Materials

Profiles: In order to address the hypotheses 6 and 7 relating to the characteristics of the EWD (type of disability and level of severity), profiles were utilized. As outlined above, profiles were made to represent current employees who have one of the following disabilities: sensory disorder (SD), or physical disability (PD), mental health disability (MHD). Additionally, each of these disabilities have two levels of severity (i.e., less and more severe). In total, there are six profiles that were randomly distributed across participants. Within these profiles the different levels of the variables tested in hypotheses 6 and 7 are represented via the HR Notes. The HR Notes are located at the bottom of the employee profile, and includes information concerning any kind of accommodation made for the profile person. Across all six profiles, only the information within the HR Notes differs (i.e., the disability type and severity level). Although the type of disability is explicitly stated, the severity level had to be inferred based on not only the

type of disability, but also the types of accommodations given. Please see Table 1 for the HR Notes of all six profiles. Further, these profiles were used to act as a frame of reference giving the participants a specific disability to consider when completing the Assumptions about EWDs scale. The profile has two parts, with the first providing information about the job and type of industry (Manufacturing industry) and the second containing the HR notes previously discussed. Within the first part, the hypothetical employee's, Ian Rogers's, organization and position are discussed. This information within the first part of the profile is held constant across all conditions, unlike the HR notes within the second part. Part one of the employee profile, in its entirety, can be found in *Appendix A*.

Table 1

HR Notes for the Employee Profiles

Type of Disability	Severity Level	HR Notes
Sensory Disorder (Hearing Loss)		
	Less Severe	Ian Rogers has hearing loss, and coworkers have to speak much louder to him so that he can hear. Also, he requested subtitles be used during any training videos (*Appendix B*).
	More Severe	Ian Rogers is deaf. All communications, including all auditory and video information, must be via email or other written text/subtitles. He is also assigned a specialized device that alerts him to emergency and/or safety warnings. (*Appendix C*).

Table 1 cont.

Type of Disability	Severity Level	HR Notes
Physical Disability (Limited arm mobility)		
	Less Severe	Ian Rogers has limited mobility in his left arm, and has been given extra time to complete tasks as an accommodation (*Appendix D*).
	More Severe	Ian Rogers has no left arm. He requires extra time, less complex assignments, and specialized equipment nearby as an accommodation. (*Appendix E*).
Mental Health Disability (Anxiety)		
	Less Severe	Ian Rogers has anxiety, and has requested more frequent feedback from his managers. Also, he is permitted to split his longer breaks into more frequent breaks (*Appendix F*).
	More Severe	Ian Rogers has severe anxiety, and has been granted the accommodation of arriving and leaving work early 2 times per week to attend therapy. Also, he requires the ability to immediately leave his station when a panic attack occurs, which can happen unpredictably several times a month (*Appendix G*).

The format of the second part of the profile was made to reflect a current employee profile within the Manufacturing Industry. Information concerning previous experience, education, type of disability, severity level, and performance were included. Performance is included to emphasize that the hypothetical EWD is qualified and capable of successfully completing the required tasks. In this study the education, experience, performance, and gender were held constant, with no mention of ethnicity or age. The only information that changes across the profiles is the HR Notes, which as you may recall contains the type of disability and severity level. All six profiles are shown in *Appendices B-G*.

Measures

Assumptions about EWDs Scale: The Assumptions about EWDs scale is a modified version of Factor 1 of the Affective Reactions Scale. The Affective Reactions scale is a subscale of the Disability Questionnaire created by Popovich et al. (2003). In 2010, Copeland et al. conducted an exploratory factor analysis on the Affective Reactions Scale, which resulted in 17 items divided among three factors. The first factor is perceptions towards working with EWDs, which measures negative cognitive and affective reactions felt towards an EWD. Further, this first factor has a coefficient alpha of .83. In the current study, this factor name was changed to Assumptions about EWDs as we felt this was more descriptive of its nine items, and was used as the dependent variable for all of the tested hypotheses. The wording of the items was also revised in order to capture assumptions about the specific disabilities within the profiles rather than disabilities in general. Although two other factors (willingness to accommodate and equal treatment) are within the Affective Reactions Scale, we felt that these did not reflect more

general assumptions about EWDs, so they will not be used. However, one item from factor 3 ("I trust that Ian Rogers was hired because he is able to perform the necessary tasks of the job.") was included within the scale, as we felt it was representative of a general assumption about EWDs. In all, the Assumptions about EWDs scale included ten modified items, nine items from factor 1 of the Affective Reactions Scale and one item from factor 3 of the same scale. This modified scale underwent an analysis to ensure that all of the items belonged together, and this is discussed further in the Results section. Since the profile provided to each participant featured one of three disability types, the Assumptions about EWD's scale they received featured items about the profiled employee with the respective disability type (i.e., sensory disorder (SD), physical disability (PD), or mental health disability (MHD)). Therefore, we measured Assumptions about EWDs using three separate scales (i.e., specifically Assumptions about an Employee with SD, Assumptions about an Employee with PD, and Assumptions about an Employee with MHD). Further, participants responded to these 10 items on a 5-point Likert scale (1= *strongly agree*, 5= *strongly disagree*) based on the profile presented. The original scale used in the Affective Reactions Scale was 7-point Likert scale, but we changed this to a 5-point Likert scale to be more consistent with other scales used in the survey. Please see *Appendix H* for the items on the Assumptions about EWDs Scale, and the complete rating scale.

The Contact With Disabled Persons Scale: This scale measures the amount of contact (Factor 1) and the quality of contact (Factors 2 and 3) participants have had with those with disabilities. The Contact With Disabled Persons Scale (CDP) originally created by Yuker and Hurley (1987) underwent an exploratory factor analysis that

resulted in a three factor solution (Pruett, Lee, Chan, Wang, & Lane, 2008). Factor 1 has nine items that measure "the amount of interpersonal contacts in general," with higher scores translating into more interpersonal contact with those that are disabled (Pruett et al., 2008, p. 214). Pruett et al. reported a coefficient alpha for Factor 1 is .88. Factor 2's four items measure positive contact experiences, and has a coefficient alpha of .86. With a coefficient alpha of .76, Factor 3 measures negative contact experiences with its three items. This revised CDP also has evidence of convergent validity as this measure was correlated in the expected ways with other attitudinal measures and psychosocial instruments (Pruett et al., 2008). The current study uses all three factors, and referred to the factors as the following subscales: amount of general contact, positive contact experiences, and negative contact experiences. However, instead of asking about disabilities in general, as 'disabilities' is a very broad term, we decided to use the full scale for each of the disability types (sensory disorder, physical disability, and mental health disability). In other words, the CDP scale was used three separate times in order to gather information about the participants' frequency and quality of contact with those who have a sensory disorder, physical disability, and/or mental health disability. Further, the wording of the questions for the three separate sections (ordered by disability type) were modified to reflect the specific disability in that section. Participants responded to all of the questions in the three subscales across all three disability types using a 5-point Likert scale (1= *never*, 5= *very often*). Pruett et al. (2008) described the 5-point Likert scale as ranging from 1= never to 5= very often; however, because they did not specify the intermediate values, we used our 5-point Likert scale. Please see *Appendix I* for items on the modified CDP Scale ordered by disability type and the complete rating scale.

Demographic Questionnaire: The remainder of the coworker characteristics mentioned in hypotheses 1-4 are captured by a demographic questionnaire housed at the end of the survey. The item relating to age asked participants to give their age in the blank provided. Education was gathered using a multiple choice format. Respondents were asked to identify their gender in a similar multiple choice format. Lastly, I listed broad occupation categories (e.g., human service oriented, business, medical, etc.) and asked the participants to choose which one best describes their major/career. I provided examples of these types of jobs to help provide the respondents with a framework. The example jobs that make up 'human service oriented' careers are taken from past disability research (Rice, 2009; Vornholt et al., 2013). Also, at the beginning of this demographic portion we asked participants if they were a current resident of the United States to ensure generalizability of the results to that population. Please see *Appendix J* for the demographic questionnaire items.

Procedures

After clicking on a link provided in SONA or Mturk, participants were taken to Qualtrics, an online portal in which the survey was housed. After reading through the survey information and providing their consent, participants were taken to the beginning of the survey. Please see *Appendix K* for the welcome letter and consent. As mentioned in a previous section, the study is a 3 x 2 between subjects design, with participants first being presented with one of the six randomly distributed hypothetical employee profiles containing job information, one of the three types of disability, and one of the two levels of severity. After reading, they were asked a couple of questions to ensure that they read

the profile carefully. These included “What level of education did Ian Rogers receive?”, and “Does Ian Rogers have a disability? If yes, what kind of disability?”. If participants answered the disability questions incorrectly, their data were not used in the analysis, as it is vital that they understand the disability being portrayed in the profile for the analysis of hypotheses 6 and 7. Please see *Appendix L* for the manipulation check items. Next they were given instructions on how to complete the Assumptions about EWDs Scale and were asked to complete it. These instructions asked participants to respond to the items as though they were referring to the hypothetical employee presented in the profile (*Appendix M*). Please note that participants were not asked to respond within a hiring context. Rather, they were given a hypothetical situation that asked about their assumptions towards the specified EWD based on the employee profile within the framework of the EWD joining an existing work team in which participants are a member.

After the Assumptions about EWDs Scale had been completed, participants were presented with instructions on how to complete the Contact with Disabled Persons Scale (CDP; *Appendix N*). As mentioned in the Measures section, the CDP scale had three different sections in which participants answered questions pertaining to the frequency and quality of contact of the following disability types: sensory disorder, physical disability, and mental health disability. Further, dependent on the disability type displayed in the profile given, the order in which the sections of the CDP Scale appeared changed. For instance, if the profile described Ian Rogers as having a physical disability, then the section of the CDP scale pertaining to the frequency and quality of contact with those with physical disabilities were presented first. The same was true of the sensory

disorder and mental health disability profiles, with the sensory disorder and mental health disability section of the CDP Scale being presented first, respectively. After the CDP Scale was finished the participants were then taken to the Demographic Questionnaire portion of the survey. After demographic information was collected, the participants were thanked for their participation and the survey was complete.

CHAPTER III

RESULTS

Data Cleaning

After receiving a total of 575 responses (446 from Mturk and 129 from SONA), the data was downloaded from Qualtrics to SPSS and the data cleaning process began. Because there were two separate data sources (i.e., SONA and Mturk), I cleaned the data in their separate files and combined them in a later stage. I began this data cleaning stage by deleting any data that provided identifying information beyond what was asked in the demographic portion of the survey. This included IP addresses for both data sources and ID numbers for those students using SONA. I then deleted all cases in which the participant did not make it to the end of the survey. Further, in both SONA and Mturk, those who did not make it to the end of the survey did not receive any monetary reward or class credit.

The survey had two manipulation check questions that had to be answered correctly for participants' responses to be included in the following analyses (i.e., "Does Ian Rogers have a disability?" and "If yes, what kind of disability?"). Therefore, I went through the data removing any case in which a disability was not recognized. After removing these participants, I removed all the cases in which the incorrect disability was selected. It is vital that both of these questions be answered correctly as hypotheses 6 and 7 require that participants recognize the disability type and severity presented in the profile. Fifty-five cases were removed in the first manipulation check, and 51 cases were

removed from the second. In deleting these cases, a pattern emerged in both data sources. About half of the people deleted via the first manipulation check did not classify less severe anxiety as a disability. Further, about half of the people deleted for the second manipulation check item incorrectly identified the severe anxiety condition.

During the next stage of data cleaning I viewed the distribution of time it took participants to complete the survey. From this I noticed a drop off in times under 3 minutes, which is understandable as it should take more than 3 minutes to read through the survey alone. Based on this distribution and logical reasoning, I deleted all cases in which the survey was completed in less than 3 minutes. This resulted in an additional 33 cases being dropped.

I then looked at the data case-by-case to see if any concerning patterns emerged, but did not find a sufficient basis for further data exclusions. At this point, I also ensured that all of the participants were at least 18 years of age and a current resident of the United States. For ethical purposes, we required participants to be at least 18 years old, and for generalizability purposes we wanted only those currently residing in the United States. No cases were found to conflict with these criteria.

In the last stage of data cleaning, I reverse coded all of the negatively worded items in the Assumptions about EWDs scale (i.e., items 1, 2, 4, 5, 6, 7, 8, and 9). This was done to ensure that the interpretation of the results found would match the hypotheses, making it easier to understand. At the end of the data cleaning stage there was 333 cases from Mturk and 100 from Sona, with 433 responses in all. Of the 433 cases used in the analyses, 159 were given the sensory disorder profiles, 161 the physical disability profiles, and 113 the mental health disability profiles.

Preliminary Analyses

Before combining the two data sources I wanted to ensure that responses to the scales were not only similar, but also reliable. To assess this I ran frequencies, examined correlation matrices, and calculated coefficient alphas. I began by running frequencies on all items to ensure that no one item was consistently unanswered. Upon investigation of these frequencies, no concerning patterns were found.

Next, I examined correlation matrices of all of the items in each scale, which included the Assumptions about EWDs scale and all three subscales of the Contact with Disabled Persons Scale (CDP) for each disability type. There was only one item within the first subscale, amount of general contact, of the CDP Scale that was concerning. This was the 9th item that asked "How often have you contributed money to organizations that help people with" the three disability types. This item was not as correlated with the other items in the amount of general contact subscale, and further it seems conceptually different from the other items. The first eight items of amount of general contact subscale ask about direct interaction with those with disabilities, whereas this 9th item asks about monetary support. Further, the 9th item seems to be potentially less relevant for nearly a fourth of our population (i.e., college students), as they are less likely to have the financial resources to contribute monetarily to organizations that help persons with disabilities. For these reasons, the 9th item on amount of general contact subscale of the CDP scale was deleted across all disability types and not used in subsequent analyses.

After reviewing the correlation matrices, I calculated the coefficient alphas for all of the scales and subscales to further ensure that they were reliable. No concerning coefficient alphas were found. Before combining the data files, I added the variable "Data

Source," so that it would be possible to separate the data by source for post-hoc analyses if desired. Once combined, I did a t-test to determine if they were any differences in scores obtained on the Assumptions about EWDs scale by disability type based on data source, and no significant differences were found. I then calculated the Cronbach's alphas for all of the scales. The Cronbach's alphas for Assumptions about EWDs scale and CDP Scale's three subscales by disability type were acceptable with the reliabilities ranging from .84 to .97. Please see Table 2.

Table 2
Cronbach's Alphas for Assumptions about EWDs & CDP Subscales by Disability Type

Type of Disability	Assumptions about EWDs & Contact with Disabled Persons Subscales	Cronbach's Alpha
Sensory Disorder (*n* = 159)		
	Assumptions about EWD *(10 items*)	.86
	Amount of general contact (*8 items*)	.95
	Positive contact experiences (*4 items*)	.93
	Negative contact experiences (*3 items*)	.90
Physical Disability (*n* = 161)		
	Assumptions about EWD *(10 items*)	.84
	Amount of general contact (*8 items*)	.93
	Positive contact experiences (*4 items*)	.91
	Negative contact experiences (*3 items*)	.89
Mental Health Disability (*n* = 113)		
	Assumptions about EWD *(10 items*)	.88
	Amount of general contact (*8 items*)	.95
	Positive contact experiences (*4 items*)	.93
	Negative contact experiences (*3 items*)	.91

Primary Analyses

Below I will present the findings of each hypothesis as well as discuss what tests were used to come to their determination. Each specified analysis was conducted three times to account for the three separate disabilities asked about in the Assumptions about EWDs scale (i.e. sensory disorder, physical disability, and mental health disability).

Hypothesis 1: Assumptions about EWDs will be negatively related with age. One significant result concerning sensory disorders was found after running Pearson bivariate correlations. More specifically, the average score on the Assumptions about EWDs scale for sensory disorders (SD) and age are significantly correlated, r (157) = .251, p = .001, with those participants who are older having more positive Assumptions about EWDs with sensory disorders. However, the average score on the Assumptions about EWDs scale for physical disabilities (PD) and mental health disabilities (MHD) were not correlated with age, r (158) = .079, p = .321 and r (110) = -.125, p = .188 respectively.

Hypothesis 2: Education will be positively related with assumptions about EWDs. No significant results were found after running Pearson bivariate correlations. More specifically, the average score on the Assumptions about EWDs scale for SD, PD, and MHD, and highest level of education achieved are not significantly correlated, r (157) = .097, p = .225, r (159) = .013, p = .866, r (110) = -.069, p = .469 respectively.

Hypothesis 3: Women will have more positive assumptions about EWDs. No significant results were found after running independent samples t-tests. More specifically, the Welch t-test (α = .05) indicated the average score on the Assumptions about EWDs scale is the same for women and men for each of the three disability types

(SD, PD, and MHD), t (127.64) = -1.70, p = .091, Cohen's d = 0.27, t (140.83) = -1.51, p = .134, Cohen's d = 0.24, t (106.33) = 0.62, p = .539, Cohen's d = 0.13 respectively.

Hypothesis 4: People with human service oriented careers/majors will have more positive assumptions about EWDs. No significant results were found after running one-way ANOVAs. More specifically, the Welch ANOVA (α = .05) indicated the average score on the Assumptions about EWDs scale were similar among Human services, Business, Healthcare, Manufacturing, Technological, Political Science/Communication, and other careers/majors across the SD, PD, and MHD types, F (6, 36.33) = 0.44, p = .848, ω^2 = -0.02, F (6, 52.89) = 0.61, p = .720, ω^2 = -0.01, F (6, 26.97) = 1.62, p = .181, ω^2 = 0.02 respectively.

Hypothesis 5 & 6: The relationship between the amount of contact and assumptions about EWDs will be moderated by positive contact experiences (i.e., quality). Also, the relationship between the amount of contact and assumptions about EWDs will be moderated by negative contact experiences (i.e., quality). No significant results were found after running multiple hierarchical regressions to test for moderation. To test these hypotheses we used the CDP subscale amount of general contact as the measure of the amount of contact, and the CDP subscales positive contact experiences and negative contact experiences as measures of the quality of contact. Using instruction from Myers, Well, and Lorch (2010) and a handout from the Office of Research and Sponsored Programs of Kean University, we utilized hierarchical regression to test for the moderating effects of quality of contact. We conducted six hierarchical regressions in all with two regressions per disability type – one to test the moderating effects of positive quality of contact and another to test for the moderating effects of negative quality of

contact. To test for moderation we used hierarchical regression putting the amount of general contact subscale (i.e., amount of contact) and the positive contact experiences and negative contact experiences subscales (i.e., quality of contact) in the first model, and the interaction of amount and quality of contact in the second model for each disability type. The handout from Kean University (2013) states that in order for a moderation to exist (1) both the main effects of amount and quality of contact as well as the first model need to be significant (2) both the main effect of the interaction variable and the second model need to be significant (Office of Research and Sponsored Programs of Kean University, 2013). However, Williams (2015) confirms that the main effects only need to be *reported* (regardless of whether significant) in order to interpret the interaction variable. Therefore we used Williams (2015) in our interpretation of the results. See Tables 3-5 for a summary of all of the results.

Because no significant results were found, we decided to do a more basic follow-up post-hoc analysis to see if any of the three factors of the CDP Scale were related to scores on the Assumptions about EWDs scale. To do this, we examined the correlations between the three CDP subscales and the assumptions about EWDs for each disability type. These correlations ranged from .05 to .30 with most being significant. All of the correlations for the post-hoc analysis including the correlations between CDP subscales can be found in Table 6.

Non-significant correlations between the amount of general contact and Assumptions about EWDs in the sensory disorder and physical disability conditions alerted us to the possibility of range restriction. As a continuation of our post-hoc analysis, we examined the frequencies of the average responses to the CDP subscale

amount of general contact. We found that around 70% of participants had either responded as “never” or “rarely” having contact with those with a sensory disorder, 51% with those with a physical disability, and 60% with those with a mental health disability.

Table 3

Summary of Hierarchical Regression Analyses for predicting Assumptions about EWDs for SD

	b	*t*	R^2	ΔR^2
Sensory Disorder (Quality of Contact: Positive)				
Model 1			.007	
Amount of Contact	0.07	0.86		
Positive Contact				
Experiences	-0.01	-0.19		
Model 2			.011	.005
Amount of Contact	-0.11	-0.49		
Positive Contact				
Experiences	-0.07	-0.78		
Amount*Positive Contact	0.04	0.85		
Sensory Disorder (Quality of Contact: Negative)				
Model 1			.087	
Amount of Contact	0.15	2.53*		
Negative Contact				
Experiences	-0.29	-3.72*		
Model 2			.091	.003
Amount of Contact	0.25	1.76		
Negative Contact				
Experiences	-0.15	-0.69		
Amount*Negative Contact	-0.06	-0.76		

* = significant at alpha = .05

Table 4

Summary of Hierarchical Regression Analyses for predicting Assumptions about EWDs for PD

	b	*t*	R^2	ΔR^2
Physical Disability (Quality of Contact: Positive)				
Model 1			.047	
Amount of Contact	-0.04	-0.82		
Positive Contact				
Experiences	0.18	2.63*		
Model 2			.070	.022
Amount of Contact	-0.32	-2.11*		
Positive Contact				
Experiences	0.01	0.06		
Amount*Positive Contact	0.08	1.95		
Physical Disability (Quality of Contact: Negative)				
Model 1			.065	
Amount of Contact	0.08	2.04*		
Negative Contact				
Experiences	-0.24	-3.17*		
Model 2			.067	.002
Amount of Contact	0.02	0.15		
Negative Contact				
Experiences	-0.35	-1.73		
Amount*Negative Contact	0.04	0.58		

* = significant at alpha = .05

Table 5

Summary of Hierarchical Regression Analyses for predicting Assumptions about EWDs for MHD

	b	*t*	R^2	ΔR^2
Mental Health Disability (Quality of Contact: Positive)				
Model 1			.090	
Amount of Contact	0.03	0.32		
Positive Contact				
Experiences	0.21	1.81		
Model 2			.105	.015
Amount of Contact	-0.27	-1.09		
Positive Contact				
Experiences	-0.01	-0.02		
Amount*Positive Contact	0.08	1.35		
Mental Health Disability (Quality of Contact: Negative)				
Model 1			.185	
Amount of Contact	0.27	4.14*		
Negative Contact				
Experiences	-0.36	-4.06*		
Model 2			.187	.001
Amount of Contact	0.20	1.04		
Negative Contact				
Experiences	-0.45	-2.09*		
Amount*Negative Contact	0.03	0.44		

* = significant at alpha = .05

Table 6

Pearson Correlation Among CDP Subscales and Assumptions about EWDs by Disability Type

		Pearson Correlations		
		2.	3.	4.
Sensory Disorders (*n* = 159)				
	1. Assumptions about EWD	.08	.05	-.22*
	2. Amount of general contact		.70*	.42*
	3. Positive contact experiences			.28*
	4. Negative contact experiences			
Physical Disabilities (*n* = 161)				
	1. Assumptions about EWD	.08	.21*	-.20*
	2. Amount of general contact		.61*	.35*
	3. Positive contact experiences			.21*
	4. Negative contact experiences			
Mental Health Disabilities (*n* = 113)				
	1. Assumptions about EWD	.25*	.30*	-.24*
	2. Amount of general contact		.78*	.35*
	3. Positive contact experiences			.21*
	4. Negative contact experiences			

* = significant at alpha = .05

Hypotheses 7: Those profiles that reflect more severe disabilities will yield more negative assumptions about EWDs when compared to those that are less severe. No significant results were found after running independent samples t-tests. More specifically, the Welch t-test ($\alpha = .05$) indicated the average score on the Assumptions about EWDs scale is the same for the less severe and more severe profiles across the disability types (SD: t (154.89) = -.77, p = .442, Cohen's d = 0.12; PD: t (157.01) = -.82, p = .414, Cohen's d = 0.12; MHD: t (109.18) = 0.83, p = .410, Cohen's d = 0.15).

Hypotheses 8: Mental health disability (MHD) profiles will result in more negative assumptions about EWDs when compared to sensory disorder (SD) or physical disability (PD) profiles. Due to methodological limitations, I could not inferentially test this hypothesis. However, Table 7 shows the descriptive statistics for the average scores on Assumptions about EWD scale across the disability types, which seem to suggest potential differences among them.

Table 7

Descriptive Statistics for Assumptions about EWDs

Disability Type	*M*	*SD*
Sensory Disorder (n = 159)		
	3.84	0.69
Physical Disability (n = 161)		
	3.64	0.66
Mental Health Disability (n = 113)		
	3.27	0.80

CHAPTER IV

DISCUSSION

Among the demographics-related hypotheses, only one is partially supported. My hypotheses proposed that those who are younger, have a higher education, are women, and have human service oriented careers/majors will have higher scores on the Assumptions about EWDs scale; yet, I was only able to find a significant positive correlation with age and assumptions about EWDs with a sensory disorder. Contrary to the hypothesis, we found that those who are older seem to have more positive assumptions towards EWDs with sensory disorders (i.e., hearing loss). Although past studies found that those who are younger have more positive attitudes towards those with disabilities in general (Goreczny et al., 2011; Vornholt et al., 2013), there may be a converse relationship specific to sensory disorders like hearing loss. Perhaps those that are older maintain a higher regard for those that have hearing loss because they are more likely to have experienced hearing loss either directly or indirectly. Another potential reason may be that older individuals are simply more sympathetic to sensory disorders such as hearing loss because these are often associated with the elderly.

However, concerning the other non-significant demographic variables, Vornholt et al. (2013) stated that the research is mixed concerning these demographic variables and whether they impact attitudes towards those with disabilities. Although some studies have found relationships among these variables (Goreczny et al., 2011; Popovich et al., 2003; Rice, 2009; Vornholt et al., 2013), others have not (McLaughlin et al., 2004; Vornholt et

al., 2013). One possibility is that some of these hypothesized relationships may exist, yet the limitations in my methodology could suppress the ability to detect them. Specifically, the choice to use profiles to assess how people feel towards their coworkers may not accurately assess how they would react in "real life" to actual disabled coworkers. In particular, the use of a brief profile about a hypothetical coworker cannot make up for the lack of interaction with a real EWD, especially in those interactions taking place over a long period of time. Future research should use methods that examine more closely the real interactions between coworkers and EWDs to assess their true feelings and their subsequent behavior towards those EWDs.

Another major concern for this type of research is social desirability. Questions about disabilities may trigger some individuals to respond in more socially desirable ways, even though it may not reflect how they truly feel. This too could have impacted how participants responded to the Assumptions about EWDs scale. Because this was a concern from the beginning, we looked at many social desirability scales; however, we were unable to find one that worked well with our survey. Future research should take a closer look at ways to effectively decrease social desirability (or at least to effectively detect it) in disability research.

Hypothesis 5 and 6 proposed that quality of contact with those who are disabled moderates the relationship between the amount of contact and the subsequent assumptions about EWDs. The literature seems to support a theoretical framework for this (Nota et al., 2014; Shannon et al., 2009), yet we found no moderating relationships. After running the simple correlations as a post-hoc, we can see that the variables of amount of and quality of contact with those who are disabled, along with the

Assumptions about EWDs are for the most part related to one another across the disability types; however, the amount of general contact with both sensory disorders and physical disabilities are not related to the Assumptions about EWDs scale. This alerted us to the possibility of range restriction, in which a majority of participants had not had enough contact with disabled persons to make an appropriate response as to the quality of that contact. In other words, because a majority of the participants did not have sufficient contact with persons with disabilities, it is not likely that they could appropriately comment on the quality of those experiences. Therefore, it seems likely that this range restriction could have obscured any possible moderating relationships of quality of contact between amount of general contact and assumptions made about EWD with the different types of disabilities.

Future research on the relationships among quantity, quality, and attitudes towards EWDs using different methods for assessing the attitudes towards EWDs should be conducted. The issues associated with the methodology of using profile people may be compounded for those participants with little prior experience with people who have disabilities, as they would have less of a basis for relating to the hypothetical profile. Further, these limitations could have obscured potential relationships between my variables including quantity, quality, and attitudes towards EWDs. Finding these moderating relationships for the contact variables in future research could inform workplace interventions, and stress the importance of scheduling positive interactions between incoming EWDs and their coworkers.

Hypotheses 7, concerning the severity level and its relationship with the assumptions about EWDs, had much support in past literature (Stone and Colella, 1996;

Vornholt et. al, 2013). However, we did not find a significant difference in the assumptions made about EWD between the severity levels in any of the disability types. While it is not clear why, it is possible that the brief encounter with the description of a hypothetical person in the employee profile was not salient enough. Perhaps another possibility is that the disability itself drew more attention than the severity level, and this may have created a common reaction with regards to the severity. In other words, participants may have attended more to the presence of a disability rather than the severity level, and this may have resulted in no significant differences between the severity levels. Another concern for the mental health disability condition specifically is that during the manipulation checks, many participants did not recognize anxiety as a disability, and further were not able to differentiate anxiety from severe anxiety. While those who failed the manipulation checks were excluded from subsequent analyses, the prevalence of such failures may indicate marginal attentiveness to the disability details for many of the participants. It may also reflect insufficient education surrounding mental health in particular. Future research needs to continue to investigate the impact that the type of disability and the severity level have on attitudes towards EWDs. Research on this can also help with workplace interventions, allowing supervisors to know what kinds of attitudes coworkers may have when an EWD is introduced to the work environment.

Lastly, the Assumptions about EWD measure was profile-specific, thus yielding separate measures of Assumptions about an employee with SD, PD, and MHD. Because these were separate variables, we were unable to conduct an inferential test of whether differences in this study's sample for the assumptions about EWDs are generalizable to a broader population. Therefore, only descriptive statistics were provided. There appears to

be potential differences in the means of the Assumptions about EWD scale across the disability types, suggesting that SD may have the most positive reactions followed by PD, and MHD with the most negative ratings.

This is consistent with previous research which found that MHD are associated with the most negative attitudes (Gewurtz & Kirsh, 2009; Nota et al., 2014; Vornholt et al., 2013). Perhaps because MHD are oftentimes invisible and there is less education surrounding mental health issues, there are more negative attitudes towards EWDs with MHD. Further, coworkers may not understand the kinds of limitations that mental health disabilities can cause, and as a result misinterpret the accommodations given, leading to more negative perceptions. As already stated, many people failed the manipulation check concerning MHD (i.e., not recognizing anxiety as a disability), and this may provide an indication as to how MHD are viewed in society. Perhaps MHD are not seen as being as serious when compared to other disabilities, partly due to their invisibility but also possibly due to curability (Stone & Colella, 1996). Stone and Colella (1996) made the general speculation that disabilities that are more incurable are perceived more negatively. However contrary to what Stone and Colella (1996) suggest, perhaps MHD's greater perception of curability causes others to view MHDs more negatively because MHD is seen as something less serious and easier to overcome when compared to SDs or PDs. Further, societal stigmas, like the commonly-held belief that those with MHD are more incompetent, may be at play (Gewurtz & Kirsh, 2009).

Because no clear conclusions can be drawn from the current study concerning differences in assumptions made about EWD based on disability type, further research is needed. Studies utilizing other designs that allow for a more direct way to test for

differences across disability types are necessary. As past research has suggested (Stone & Colella, 1996; Vornholt et al., 2013) there are likely differences in the way a person with disability is perceived based on the type of disability they have. Because of this, future research needs to investigate the assumptions made concerning the different disability types to inform interventions used within workplaces and society to foster greater social integration.

Another major limitation in my design concerns the disability highlighted within the profiles. In order to test how people feel about the different disabilities, I chose to use profiles, and within those profiles I portrayed a hypothetical person with a particular example of a type of disability (i.e., hearing loss for SD, limited mobility for PD, and anxiety for MHD). This methodology limits the ability to make broader conclusions about the results found. In other words, because I gave participants an example, they likely only responded to items taking into consideration only the example disabilities portrayed and not the type of disability more broadly. Therefore, this limits the generalizability of the results found. Though the current study is a good start, further research is needed in order to determine if other disabilities within the broader disability types are viewed similarly.

In conclusion, there is a need for this type of research to continue. As we have increasing technology and flexibility to incorporate those with disabilities more fully into the workplace, we need to remember that the integration should not end with them getting the job. Efforts at increasing EWDs' social integration is key for tapping into the talents and the retention of this demographic.

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APPENDICES

APPENDIX A

Part 1 of Employee Profile: Job Information

Imagine you work in production for a manufacturing company called Beechwood Manufacturing. Please read the following excerpt and profile concerning an employee who has just joined your production team.

Beechwood Manufacturing prides itself on their quality automotive parts. Ian Rogers has worked for Beechwood Manufacturing for 5 years as a production worker, and has just been transferred to your production team. Production teams work to assemble 50 automotive parts a day. Each team member has specific tasks that they complete and then pass on to the next member. Ian has been assigned to the first step in the process. Ian's employee profile (presented next) will give you additional information. Please read this profile carefully as you will answer the following survey questions based on your perceptions of Ian.

APPENDIX B

Part 2 of Employee Profile: Sensory Disorder Less Severe

Ian Rogers

1411 2nd St E.
Antioch, TN 37013
Email: Ian.Rogers@gmail.com
Phone #: 615-555-5555

Education & Experience

Beechwood High School GPA: 3.26

High School Diploma

Ohio State Technical and Community College GPA: 3.37

Associate's Degree

Beechwood Manufacturing

Production Worker, from 2/2010- Current

Performance Reviews

2010…….….Satisfactory Performance

2011……...……Good Performance

2012…….…….Satisfactory Performance

2013…….…….Satisfactory Performance

2014……Good Performance

HR Notes

Ian Rogers has hearing loss, and coworkers have to speak much louder to him so that he can hear. Also, he requested subtitles be used during any training videos.

APPENDIX C

Part 2 of Employee Profile: Sensory Disorder More Severe

Ian Rogers

1411 2nd St E.
Antioch, TN 37013
Email: Ian.Rogers@gmail.com
Phone #: 615-555-5555

Education & Experience

Beechwood High School GPA: 3.26

High School Diploma

Ohio State Technical and Community College GPA: 3.37

Associate's Degree

Beechwood Manufacturing
Production Worker, from 2/2010- Current

Performance Reviews

2010……..….Satisfactory Performance

2011……...…...……Good Performance

2012……..…….Satisfactory Performance

2013……...…….Satisfactory Performance

2014…….……Good Performance

HR Notes

Ian Rogers is deaf. All communications, including all auditory and video information, must be via email or other written text/subtitles. He is also a specialized device that alerts him to emergency and/or safety warnings.

APPENDIX D

Part 2 of Employee Profile: Physical Disability Less Severe

Ian Rogers

1411 2nd St E.
Antioch, TN 37013
Email: Ian.Rogers@gmail.com
Phone #: 615-555-5555

Education & Experience

Beechwood High School GPA: 3.26

High School Diploma

Ohio State Technical and Community College GPA: 3.37

Associate's Degree

Beechwood Manufacturing

Production Worker, from 2/2010- Current

Performance Reviews

2010……...Satisfactory Performance

2011……....……Good Performance

2012……..….Satisfactory Performance

2013……..….Satisfactory Performance

2014…….……Good Performance

HR Notes

Ian Rogers has limited mobility in his left arm, and has been given extra time to complete tasks as an accommodation.

APPENDIX E

Part 2 of Employee Profile: Physical Disability More Severe

Ian Rogers

1411 2nd St E.
Antioch, TN 37013
Email: Ian.Rogers@gmail.com
Phone #: 615-555-5555

Education & Experience

Beechwood High School GPA: 3.26

High School Diploma

Ohio State Technical and Community College GPA: 3.37

Associate's Degree

Beechwood Manufacturing

Production Worker, from 2/2010- Current

Performance Reviews

2010……..….Satisfactory Performance

2011…….....……Good Performance

2012……...Satisfactory Performance

2013……..….Satisfactory Performance

2014…….……Good Performance

HR Notes

Ian Rogers has no left arm. He requires extra time, less complex assignments, and specialized equipment near-by as an accommodation.

APPENDIX F

Part 2 of Employee Profile: Mental Health Disability Less Severe

Ian Rogers

1411 2nd St E.
Antioch, TN 37013
Email: Ian.Rogers@gmail.com
Phone #: 615-555-5555

Education & Experience

Beechwood High School GPA: 3.26

High School Diploma

Ohio State Technical and Community College GPA: 3.37

Associate's Degree

Beechwood Manufacturing

Production Worker, from 2/2010- Current

Performance Reviews

2010……..….Satisfactory Performance

2011…….……Good Performance

2012……..….Satisfactory Performance

2013……..…….Satisfactory Performance

2014…….……Good Performance

HR Notes

Ian Rogers has anxiety, and has requested more frequent feedback from his managers. Also, he is permitted to split his longer breaks into more frequent breaks.

APPENDIX G

Part 2 of Employee Profile: Mental Health Disability More Severe

Ian Rogers

1411 2nd St E.
Antioch, TN 37013
Email: Ian.Rogers@gmail.com
Phone #: 615-555-5555

Education & Experience

Beechwood High School GPA: 3.26

High School Diploma

Ohio State Technical and Community College GPA: 3.37

Associate's Degree

Beechwood Manufacturing
Production Worker, from 2/2010- Current

Performance Reviews

2010……..Satisfactory Performance

2011……...……..…Good Performance

2012……..….Satisfactory Performance

2013……..….Satisfactory Performance

2014…….……Good Performance

HR Notes

Ian Rogers has severe anxiety, and has been granted the accommodation of arriving and leaving work early 2 times per week to attend therapy. Also, he requires the ability to immediately leave his station when a panic attack occurs, which can happen unpredictably several times a month.

APPENDIX H

Assumptions about EWDs Scale

Items rated on the following 5-point Likert scale: 1= *Strongly Disagree*, 2= *Somewhat Disagree*, 3= *Neither Agree nor Disagree*, 4= *Somewhat Agree*, 5= *Strongly Agree.*

1. Working with Ian Rogers would increase my workload.
2. I would find it difficult to supervise Ian Rogers.
3. I am comfortable with the idea of working with Ian Rogers.
4. Working with Ian Rogers will slow down the rate at which I complete work.
5. Ian Rogers would require high levels of supervision.
6. It would be difficult to be supervised by Ian Rogers.
7. I am uncomfortable with the idea of sharing my workspace with Ian Rogers.
8. I would not want to work on a work site where Ian Rogers was operating machinery.
9. If I were on a work team with Ian Rogers, I would not want my performance rewards to depend on Ian Rogers's performance.
10. I trust that Ian Rogers was hired because he is able to perform the necessary tasks of the job.

APPENDIX I

Contact With Disabled Persons Scale

Items rated on the following 5-point Likert scale: 1= *Never*, 2= *Rarely*, 3= *Sometimes*, 4= *Often*, 5= *Very Often*

The following questions relate to contact with those who have a sensory disorder (e.g., hearing loss, vision loss, etc.)

CDP Subscale: Amount of General Contact

1. How often have you discussed your life or problems with a person with a sensory disorder?
2. How often have you had a long talk with a person with a sensory disorder?
3. How often have you eaten a meal with a person with a sensory disorder?
4. How often have you visited persons with sensory disorders in their homes?
5. How often have you worked with a co-worker with a sensory disorder?
6. How often have persons with sensory disorders tried to help you with your problems?
7. How often has a friend with a sensory disorder visited you at your home?
8. How often have persons with sensory disorders discussed their lives or problems with you?
9. How often have you contributed money to organizations that help people with sensory disorders?

CDP Subscale: Positive Contact Experiences

1. How often have you met a person with a sensory disorder that you admire?
2. How often have you met a person with a sensory disorder you like?
3. How often have you had pleasant experiences interacting with persons with sensory disorders?
4. How often have you been pleased by the behavior of a person with a sensory disorder?

CDP Subscale: Negative Contact Experiences

1. How often have you been annoyed or disturbed by the behavior of a person with a sensory disorder?
2. How often have you had unpleasant experiences interacting with persons with sensory disorders?
3. How often have you met a person with a sensory disorder you dislike?

The following questions relate to contact with those who have a physical disability (e.g., limited mobility, missing limbs, etc.)

CDP Subscale: Amount of General Contact

1. How often have you discussed your life or problems with a person with a physical disability?
2. How often have you had a long talk with a person with a physical disability?
3. How often have you eaten a meal with a person with a physical disability?
4. How often have you visited persons with physical disabilities in their homes?
5. How often have you worked with a co-worker with a physical disability?

6. How often have persons with physical disabilities tried to help you with your problems?
7. How often has a friend with a physical disability visited you at your home?
8. How often have persons with physical disabilities discussed their lives or problems with you?
9. How often have you contributed money to organizations that help people with physical disabilities?

CDP Subscale: Positive Contact Experiences

1. How often have you met a person with a physical disability that you admire?
2. How often have you met a person with a physical disability you like?
3. How often have you had pleasant experiences interacting with persons with physical disabilities?
4. How often have you been pleased by the behavior of a person with a physical disability?

CDP Subscale: Negative Contact Experiences

1. How often have you been annoyed or disturbed by the behavior of a person with a physical disability?
2. How often have you had unpleasant experiences interacting with persons with physical disabilities?
3. How often have you met a person with a physical disability you dislike?

The following questions relate to contact with those who have a mental health disability (e.g., anxiety, depression, etc.)

CDP Subscale: Amount of General Contact

1. How often have you discussed your life or problems with a person with a mental health disability?
2. How often have you had a long talk with a person with a mental health disability?
3. How often have you eaten a meal with a person with a mental health disability?
4. How often have you visited persons with mental health disabilities in their homes?
5. How often have you worked with a co-worker with a mental health disability?
6. How often have persons with mental health disabilities tried to help you with your problems?
7. How often has a friend with a mental health disability visited you at your home?
8. How often have persons with mental health disabilities discussed their lives or problems with you?
9. How often have you contributed money to organizations that help people with mental health disabilities?

CDP Subscale: Positive Contact Experiences

1. How often have you met a person with a mental health disability that you admire?
2. How often have you met a person with a mental health disability you like?
3. How often have you had pleasant experiences interacting with persons with mental health disabilities?

4. How often have you been pleased by the behavior of a person with a mental health disability?

CDP Subscale: Negative Contact Experiences

1. How often have you been annoyed or disturbed by the behavior of a person with a mental health disability?
2. How often have you had unpleasant experiences interacting with persons with mental health disabilities?
3. How often have you met a person with a mental health disability you dislike?

APPENDIX J

Demographic Questionnaire

1. Are you a current resident of the United States?
    a. Yes
    b. No
2. What is your age?
3. What is the highest level of education you have achieved?
    a. High School
    b. Some College
    c. Associates Degree
    d. Bachelor's Degree
    e. Graduate Degree
4. Please indicate which gender you identify most with.
    a. Male
    b. Female
    c. Transgender Male
    d. Transgender Female
    e. If you do not identify with any of the genders above, please tell us which gender you do identify with: _____

5. What occupation category best describes your primary career focus?
    a. Human Services (psychology, social work, occupational therapy, special education, etc.)
    b. Business (finance, management, economics, etc.)
    c. Healthcare (nurse, medical doctor, etc.)
    d. Manufacturing (mechanical engineer, production, etc.)
    e. Technological (IT, software engineer, website developer, etc.)
    f. Political Science/ Communication (lawyer, journalism, etc.)
    g. Other, please specify _____

APPENDIX K

Welcome Letter and Consent

Welcome to this study! The purpose of this study is to explore judgements made about fellow coworkers within a work context.

To be eligible for this survey, you must be at least 18 years old and a United States

citizen.

The survey is roughly 34 questions long and should take about 20 minutes to complete. Further, the survey is anonymous and participation is voluntary.

If you agree to the terms above please click on the arrow (>>) below.

Thank you for your interest in participating in this study.

If you have any questions or concerns please contact the principal investigator, Amberly Scruggs, at akr3r@mtmail.mtsu.edu.

APPENDIX L

Manipulation Check

1. What is the highest level of education Ian Rogers received?
    a. High School
    b. Some College
    c. Associates Degree
    d. Bachelor's Degree
    e. Graduate Degree
2. Does Ian Rogers have a disability?
    a. Yes
    b. No
3. If yes, what kind of disability?
    a. Some hearing loss
    b. Deaf
    c. Limited mobility in arm
    d. Missing arm
    e. Anxiety
    f. Severe Anxiety
    g. Ian Rogers does not have a disability

APPENDIX M

Instruction for Assumptions about EWDs Scale

Recall that Ian Rogers, the employee presented in the previous profile, has just been transferred to your production work team. Using this work context and the information provided in the employee profile, please respond to the following items.

APPENDIX N

Instructions for Contact with Disabled Persons Scale

For questions relating to sensory disorders:

This section is not about your opinion of Ian Rogers specifically. Rather, for the next set of items please rate you general impressions of people with a sensory disorder (e.g., hearing loss, vision, etc.).

For questions relating to physical disabilities:

This section is not about your opinion of Ian Rogers specifically. Rather, for the next set of items please rate you general impressions of people with a physical disability (e.g., limited mobility, missing limbs, etc.).

For questions relating to mental health disabilities:

This section is not about your opinion of Ian Rogers specifically. Rather, for the next set of items please rate you general impressions of people with a mental health disability (e.g., anxiety, depression, etc.).

APPENDIX O

IRB Approval Letter

IRB

INSTITUTIONAL REVIEW BOARD
Office of Research Compliance,
010A Sam Ingram Building,
2269 Middle Tennessee Blvd
Murfreesboro, TN 37129

IRBN007 – EXEMPTION DETERMINATION NOTICE

Thursday, March 24, 2016

Investigator(s): Amberley Scruggs & Patrick McCarthy
Investigator(s') Email(s): akr3r@mtmail.mtsu.edu
Department: Psychology
Study Title: "Inching towards integration: Factors affecting coworker assumptions about employees with disabilities"
Protocol ID: **16-1207**

Dear Investigator(s),

The above identified research proposal has been reviewed by the MTSU Institutional Review Board (IRB) through the **EXEMPT** review mechanism under 45 CFR 46.101(b)(2) within the research category *(2) Educational Tests* A summary of the IRB action and other particulars in regard to this protocol application is tabulated as shown below:

IRB Action	EXEMPT from furhter IRB review***	
Date of expiration	**NOT APPLICABLE**	
Participant Size	Click here to enter text.	
Participant Pool	**Recruits from Psychology Research Pool & AMT**	
Mandatory Restrictions	Click here to enter text.	
Additional Restrictions	Click here to enter text.	
Comments	Click here to enter text.	
Amendments	**Date**	**Post-Approval Amendments**
		Click here to enter text.

***This exemption determination only allows above defined protocol from further IRB review such as continuing review. However, the following post-approval requirements still apply:

Addition/removal of subject population should not be implemented without IRB approval
Change in investigators must be notified and approved
Modifications to procedures must be clearly articulated in an addendum request and the proposed changes must not be incorporated without an approval
Be advised that the proposed change must comply within the requirements for exemption
Changes to the research location must be approved – appropriate permission letter(s) from external institutions must accompany the addendum request form
Changes to funding source must be notified via email (irb_submissions@mtsu.edu)
The exemption does not expire as long as the protocol is in good standing

Project completion must be reported via email (irb_submissions@mtsu.edu)

Research-related injuries to the participants and other events must be reported within 48 hours of such events to compliance@mtsu.edu

The current MTSU IRB policies allow the investigators to make the following types of changes to this protocol without the need to report to the Office of Compliance, as long as the proposed changes do not result in the cancellation of the protocols eligibility for exemption:

Editorial and minor administrative revisions to the consent form or other study documents Increasing/decreasing the participant size

The investigator(s) indicated in this notification should read and abide by all applicable post-approval conditions imposed with this approval. Refer to the post-approval guidelines posted in the MTSU IRB's website. Any unanticipated harms to participants or adverse events must be reported to the Office of Compliance at (615) 494-8918 within 48 hours of the incident.

All of the research-related records, which include signed consent forms, current & past investigator information, training certificates, survey instruments and other documents related to the study, must be retained by the PI or the faculty advisor (if the PI is a student) at the sacure location mentioned in the protocol application. The data storage must be maintained for at least three (3) years after study completion. Subsequently, the researcher may destroy the data in a manner that maintains confidentiality and anonymity. IRB reserves the right to modify, change or cancel the terms of this letter without prior notice. Be advised that IRB also reserves the right to inspect or audit your records if needed.

Sincerely,

Institutional Review Board
Middle Tennessee State University

Quick Links:

Click here for a detailed list of the post-approval responsibilities.

More information on exmpt procedures can be found here.