

AN ABSTRACT OF THE THESIS OF

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Kathleen R. Bogart

Negative attitudes towards people with disabilities persist in our society, limiting the inclusion of people with disabilities in a multitude of social roles. Despite existing research on the nature of these attitudes and interventions to improve them, people with disabilities continue to cite social barriers as some of their greatest challenges (Dunn & Burcaw, 2013). Past research has often focused solely on the attitudes of people without disabilities towards those with disabilities, and has failed to involve people that have personal experience with disability in the research process. The present research consisted of two studies that were conducted to examine attitudes toward disability on both a group and interpersonal level, as well as the related factors of participant disability, the demographic factors and disability factors that influence attitudes (contact, age, gender, and type of and visibility of disability), and the impact of disability identity on the attitudes of people with disabilities towards others with disabilities. In addition, the second study examined the effects of education and the social model of disability on attitudes toward people with disabilities. The findings of the first study provide support

for the role played by contact in attitudes toward disability and the differential effects of communal and personal disability identity in determining the attitudes of people with disabilities towards others with disabilities. The findings of the second study provide support for the efficacy of an educational intervention that addresses disability from the social model to improve attitudes about disability.

Keywords: *disability, social model, contact, disability identity*

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Attitudes Toward Disability in Self and Other:
Assessment and Educational Intervention

by
Amy K. Bonnett

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APPROVED:

Major Professor, representing Psychology

Director of the Interdisciplinary Studies Program

Dean of the Graduate School

I understand that my thesis will become part of the permanent collection of Oregon State University libraries. My signature below authorizes release of my thesis to any reader upon request.

Amy K. Bonnett, Author

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CHAPTER 1 – Introduction

People with disabilities continue to face significant challenges impacting their full participation in society. This is not an issue that is restricted to a single context, but rather it is a pervasive barrier affecting multiple aspects of everyday life. Research has shown that the most complex of these obstacles are the attitudes that others hold towards people with disabilities as a group (Bunch & Valeo, 2004; Martin & Arregui, 2013). Negative societal beliefs about disability have led to the oppression of people who experience disabilities, a phenomenon that is referred to as *ableism* (Brown & Broido, 2014). The attitudes that give rise to ableism both directly and indirectly impact the inclusion and lives of people with disabilities.

Therefore, it is important to study attitudes about disability because these biases represent significant obstacles to individuals in their achievement of life goals. People with disabilities constitute the largest minority group in the U.S. at nearly 20 percent of the total population (Brault, 2012). Despite this, social interactions between people with and without disabilities are still strained. Examining the factors that influence attitudes is an essential step toward further understanding the continued social issues that people with disabilities face. In addition, this research is needed for the creation and assessment of interventions, the formation of policies, and understanding how prejudice and societal values influence attitudes (Antonak & Livneh, 2000). In other words, as stated by Antonak and Livneh (2000), “Knowledge of the mechanisms underlying the development and structure of attitudes towards persons with disabilities is considered to be necessary

for changing them and thereby increasing the integration of persons with disabilities into the larger society” (p. 212).

Recently there have been several social and political changes affecting individuals with disabilities. Changes have occurred in the areas of education, services provided (vocational and physical rehabilitation, daily living supports and accommodations), healthcare, level of integration, employment, and rhetoric (Antonak & Livneh, 2000). These advancements arguably built from other civil rights movements in the U.S., primarily the African American and Women’s movements. The Civil Rights Act of 1964, which prohibited racial discrimination in employment, public areas, and services that receive federal funding, was a model for more recent legislation pertaining to disability (Michigan Disability Rights Coalition, n.d.).

Disability rights regulations were gradually passed throughout the decades following the Civil Rights Act. These include the Vocational Rehabilitation Amendments of 1965, the Architectural Barriers Act, court rulings such as *Mills v. Board of Education* and *PARC v. Pennsylvania*, the Rehabilitation Act of 1973, the Education for All Handicapped Children Act, and an amendment to the Higher Education Act of 1972 (Michigan Disability Rights Coalition, n.d.). Particularly noteworthy is Section 504 of the Rehabilitation Act of 1973. Section 504 was the first law to address discrimination against people with disabilities, banning it in programs receiving federal funding (Stanberry, n.d.). Each of these developments led up to the seminal piece of disability rights legislation, The Americans with Disabilities Act (ADA). The ADA was passed in 1990, and amended in 2009, ensuring equal treatment and accommodation for people

with disabilities in the workplace (U.S. Equal Employment Opportunity Commission, 2008). It also required inclusive education, along with the Rehabilitation Act of 1973, and the Individuals with Disabilities Education Act (IDEA), amended and renamed from the Education for All Handicapped Children Act (Winton, 2012). IDEA is a special education law that applies to public schools (Stanberry, n.d.). It allows an eligible student who has a disability to receive public education services that fit his or her needs, in the least restrictive environment for the student, as determined by their Individualized Education Program (IEP) (Stanberry, n.d.). With these developments people with disabilities have specified rights, are protected from discrimination in many situations, and are more visible in society due to increased accommodations to physical environments. Gradually, the way in which society tends to view and treat people with disabilities has also begun to change, although stigma, negative attitudes, and inadequate accommodations continue to present obstacles to the full inclusion of people with disabilities.

CHAPTER 2 – Literature Review

Social Psychology

In social psychology, it is common practice to refer to an observer's own group (based on shared characteristics) as "in-group," and all others as "out-group" (Fiske, Cuddy, & Glick, 2006). Members of the in-group tend to share attitudinal positions towards members of particular out-groups (Hannon, n.d.). The attitudes composing these positions can have a significant impact on the nature of interactions between groups. Although there is no universally agreed-upon definition of attitudes, theorists tend to agree upon their basic structure and function (Hannon, n.d.). Thurstone (1928), a progenitor of modern attitude research and influential theorist in the area of psychometrics, described attitudes as "...the sum total of a man's inclinations and feelings, prejudice or bias, preconceived notions, ideas, fears, threats, and convictions about any specified topic" (p. 531). He theorized that attitudes occur on a continuum ranging from positive to negative, and that they may be measured using scales (Thurstone, 1928). Modern research has built upon his ideas and additionally has demonstrated that attitudes are likely composed of three components: affect, cognition, and behavior (Cuddy, Fiske, & Glick, 2007; Hannon, n.d.; Olson, 1993). This structure is referred to as the tripartite model of attitudes, and is agreed upon by most theorists (Olson, 1993).

Attitudes

The components of attitudes may operate as both antecedents to and consequences of the attitude itself (Olson, 1993). In other words, the affect, cognitions,

and behavior that one experiences regarding a topic forms the attitude, and the resultant attitude has an impact on one's specific affect, cognitions, and behavior. The three components are also predictive of one another (Olson, 1993). For example, experiencing negative affect regarding an attitude object may be predictive of negative behavior.

Attitudes are initially formed through modeling and social learning (Hannon, n.d.). It is likely due to the influence of the social norms incorporated during attitude formation that females tend to report more positive attitudes toward people with disabilities than do males (Chesler, 1965; Freed, 1964; Siller, 1963, 1964; Yunker, Block, & Young, 1966, as cited in Livneh, 2012). Once formed, they are relatively stable due to people being more likely to incorporate evidence that supports their current attitudes than that which contradicts them (Hannon, n.d.; Olson, 1993). However, previous research has indicated that attitudes toward people with disabilities may fluctuate throughout the lifespan, with more positive attitudes being reported in late childhood and adulthood, and more negative attitudes occurring during early childhood, adolescence, and old age (Ryan, 1981; Siller, 1963; Siller & Chapman, 1964; Siller et al., 1967, as cited in Livneh, 2012). Overall though, their nature is quite stable, and, combined with their predictive utility for certain behaviors, attitudes are an important aspect of how we relate to the social world.

Attitudes are also a key part of the framework we use to interpret our environment (Hannon, n.d.). According to Fichten (1994), a prominent researcher in the field of interactions with people with disabilities, this framework or schema consists of a structured set of cognitions, relationships between those cognitions, and specific

examples. Within this framework, attitudes may be interconnected with related evaluations and stereotypes (Olson, 1993). Schema help to expedite the organization of evaluations and allow for quick appraisal of objects and situations, something that is adaptive when it comes to making efficient judgments about a potentially harmful situation (Olson, 1993).

Stereotypes

Stereotypes make up another component of our cognitive schema. They consist of shared beliefs about a group of people, with attitudes being an important part of those beliefs (Olson, 1993). The formation of stereotypes is a process in which individuals readily encode the behaviors deemed desirable by their in-group and those considered to be undesirable by out-group members (Olson, 1993). Similar to attitudes, stereotypes are relatively stable because of the way we are biased to incorporate details that confirm our beliefs.

When stereotypes and their attitudinal components are negative, they may lead to prejudice (Olson, 1993). Prejudice is defined as negative evaluation and affect toward out-group members (Olson, 1993). Due to prejudice being influenced by attitudes and affect, both of which are said to predict certain behaviors, prejudice is also likely to have predictive utility. In particular, prejudice is predictive of behavior towards out-group members that is negative or discriminatory (Olson, 1993).

The attitudes held by one group towards another group may have a powerful impact upon the stereotypes, prejudice, and discrimination that are perpetuated by each group of people. For people with disabilities, along with other out-groups, negative

attitudes present a major barrier to full social participation (Hannon, n.d.). This may occur in concrete ways such as through influencing the legislation and policies that society follows, or more subtly by creating stigma (Hannon, n.d.; Lloyd, Sullivan, & Williams, 2005). The impact of legislation is that, when it is discriminatory or allows for discrimination, it has the potential to limit accommodations and exclude people with disabilities from activities, services, and job opportunities. Stigma, on the other hand, is a social construction that results from the acceptance of stereotypes and prejudice by a culture (Lloyd et al., 2005). Stigma comes in many forms, from seeing an individual with a disability as a potential source of harm or illness, to seeing them as unintelligent or incompetent. The stigmas that a society maintains are often internalized by the individuals or groups that they pertain to, and they have been found to have a significant negative impact on one's self-concept (Lloyd et al., 2005).

Applied Psychology

Applied psychologists study how psychological phenomena influence clinical, educational, and organizational settings such as workplaces and institutions of higher education. Attitudes are one such psychological process that can influence relations in these contexts. Through the application of theories about how people think and interact, the goal is to improve organizational decisions and functioning, as well as the wellbeing of those within organizations (Chen, 2015). The concepts of attitudes, stereotyping, prejudice, and discrimination introduced in social psychology may be utilized to guide practical applications and interventions. Disability is important to consider due to the large proportion of people with disabilities in our population, many of whom are in the

workforce and in higher education (Brault, 2012). Despite this, limited research has been conducted specifically relating to disability in applied psychology. Due to the broad range of diversity that occurs naturally in work settings, it may be more effective to study disability within this range (van Kippenberg, De Dreu, & Homan, 2004).

Diversity can be defined as any differences between individuals that cause the other to be perceived as different in some way from the self (van Kippenberg et al., 2004). Applied psychological research on diversity in organizations has been built upon the foundation of principles from social psychology and industrial-organizational psychology (van Kippenberg et al., 2004). More specifically, researchers have utilized theories of in-group and out-group relations and social categorization from social psychology, along with information and decision making research from industrial-organizational psychology (van Kippenberg et al., 2004). Paradoxical findings are present in the literature on diversity within groups, suggesting that the presence of individuals from different social categories may increase conflict, while also producing positive outcomes such as increased group morale and innovation (van Kippenberg et al., 2004). Inclusion of people from different groups might lead to increased creative thinking due to the widened range of viewpoints. Diversity to some extent will always be present in organizations, so it is essential for research to examine how to increase the positive outcomes that can arise from these intergroup interactions.

Interventions

A primary focus of applied psychology is the development of effective interventions to improve organizational functioning. Six factors for successful

intervention have been identified in the literature: 1) choice and control in the learning process, 2) awareness of one's own inappropriate behavior, 3) publicity, 4) commitment to future appropriate behavior, 5) explaining the importance of appropriate behavior to others, and 6) recognizing the dissonance of inappropriate behavior with one's self-concept (Aronson, Fried, & Stone, 1991; Devine, 1989; Dickerson, Thibodeau, Aronson, & Miller, 1992; Leippe & Eisenstadt, 1994; Monteith, 1993, as cited in Gringart, Helmes, & Speelman, 2008). Further review of the efficacy of interventions will be conducted in chapter four.

Although applied psychology typically targets populations that are already within the workforce for intervention, there is also a great potential for attitude interventions in higher education, before individuals are entering careers. The findings of a study on undergraduate psychology courses suggest that this potential is largely untapped, however (Rosa, Bogart, Bonnett, Estill & Colton, in press). Rosa and colleagues (in press) conducted an exhaustive content analysis of undergraduate psychology course descriptions from the top 100 universities in the U.S. The researchers found that 67% of courses that addressed disability pertained to the topic of psychiatric disabilities, while cognitive, chronic health, intellectual, sensory, physical and other disabilities were largely underrepresented (Rosa et al., in press). This is of note due to the actual rates of disability, as reported by the 2010 U.S. Census; with 71% of people with disabilities reporting a chronic health condition, and 37% reporting a physical disability (Brault, 2012). This is in stark contrast to the types of disability addressed in higher education, with chronic health conditions and physical disabilities rarely being included in

coursework. This research suggests that undergraduate students are not receiving sufficient education and training in the types of diversity they are most likely to encounter.

Education

In the U.S., societal values greatly influence the way in which education is structured. So much so, argue Ysseldyke, Algozzine, and Thurlow (1992), that:

As a social reflection, school has a class system, segregation, and competition, and the administrative model parallels that of industry. School conforms to standards set by local, state, and federal governments to ensure uniformity, productivity, and efficiency, and school models the social values it is designed to instill and cultivate. (p. 37)

In order to educate mass numbers of students, there is an expectation of conformity, which allows the use of standardized material and testing (Ysseldyke, Algozzine, & Thurlow, 1992). Conformity to the norm is an unattainable expectation for many students, who may differ in their physical or educational needs, achievement, social economic standing, and cultural backgrounds, among other factors. Although differentiation of teaching to fit students' diverse needs is something that many teachers strive for, efforts vary by teacher and classroom (Heacox, 2012). When students are unable to conform or to meet standards, their failure is viewed as an extension of their personal characteristics.

Stereotype Threat

People with disabilities may internalize negative stereotypes and the devaluation associated with them. This internalization can lead to social withdrawal to avoid anticipated rejection (Lloyd et al., 2005). Consequently, with fewer social interactions,

social skills growth may be limited, further exasperating differences between groups. Stereotypes also limit through labeling, which dehumanizes and restricts the range of social roles, behaviors, and opportunities for individuals (Altman, 1981). According to Merton (1968), false labels can lead to self-fulfilling prophecies for the individual or group to which the definitions apply. He also argued that societal prejudice and discrimination are maintained through the false beliefs that in-groups hold toward particular out-groups and the influence that these beliefs have in the interpretation of social situations (Merton, 1968). The false observations that in-group members make regarding groups such as people with disabilities could have numerous implications in both the treatment of and the social outcomes for out-groups.

Stereotype threat describes a phenomenon where, when a negative stereotype is applicable, an individual is likely to internalize that stereotype and to feel that they may confirm the stereotype and consequently be judged by others (Steele, Spencer, & Aronson, 2002). Research has demonstrated that members of stereotyped groups tend to underperform in areas that are relevant to negative stereotypes (Steele, Spencer, & Aronson, 2002; Silverman & Cohen, 2014). In an example related to disability, when taking a test, an individual with a learning disability may have internalized negative stereotypes about the test-taking abilities of people with learning disabilities as a group, which may lead the individual to perform below his or her ability. Through this process, individuals in stereotyped groups may perform consistently with stereotypes, despite there being no true difference in achievement potential between groups.

Accommodation in Education

As stated previously, the most commonly cited barrier by people with disabilities are negative societal attitudes. Ableism pervades the methods by which disability is dealt with in education, leading administrators and educators to view the individual or his or her disability as the problem, rather than the school's or institution's lack of appropriate accommodations. Brown and Broido (2014), in their discussion of engagement of students with disabilities in higher education, state that one of the most effective ways to improve the educational environment for all students is through universal design and universal instructional design. Universal design involves the thoughtful use of educational tools and settings that are usable by individuals regardless of ability (Brown & Broido, 2014). The hope is that, when accommodations are built into the learning environment, disabilities will become less salient, and the focus will be redirected to education. Universal instructional design is a similar idea that calls for teachers to be trained in instructing students regardless of their differences (Brown & Broido, 2014). Accommodations such as these can be aided through the use of decision-making committees that include students and faculty that have personal experience with disabilities (Brown & Broido, 2014). When educational settings are prepared to meet the needs of all individuals, negative stereotypes should become less apparent and less threatening, thus reducing arbitrary structural disadvantages.

CHAPTER 3 – The Implications of Attitudes Toward People with Disabilities

Attitudinal Ambivalence

Not all attitudes toward out-groups are negative. When evaluating something, attitudes may contain both positive and negative components. This is referred to as ambivalence, and it may lead to anxiety and behavioral instability towards a situation (Olson, 1993). In terms of attitudes about disability, people who do not have disabilities may experience both positive and negative attitudes towards people with disabilities. A theoretical model that employs this concept of ambivalence is the Stereotype Content Model (SCM) (Cuddy et al., 2007; Fiske et al., 2006). According to this model, there are two dimensions of stereotypes involved in evaluations of others' behaviors, the extent to which we perceive others to be warm and competent (Fiske et al., 2006). Warmth is an evaluation of the potential harm or benefit that an individual presents (Fiske et al., 2006). It is composed of such traits as friendliness, helpfulness, sincerity, and trustworthiness (Fiske et al., 2006). In contrast, competence is the ability of a group to actually perform the harm or benefit that they potentially represent (Fiske et al., 2006). It consists of traits including intelligence, skill, creativity, and efficacy (Fiske et al., 2006). Ambivalence comes into play when we consider that both dimensions occur on a continuum, meaning that groups may be seen as having a greater or lesser amount of either. Some groups may be stereotyped as high in one dimension and low in another. People with disabilities are one of those groups, generally being perceived to be high in warmth but low in competence (Fiske et al., 2006).

How the in-group stereotypes the out-group in terms of warmth and competence influences their behavior towards that group. Cuddy and colleagues (2007) theorized that the behaviors that result from stereotypes might differ in intensity and valence. In this study, we are concerned with the behaviors that the authors called “active facilitation” and “passive harm,” both of which are elicited due to high warmth and low competence, as is the case in stereotypes toward people with disabilities (Cuddy et al., 2007). Active facilitation applies to behaviors that benefit the out-group such as providing support services or introducing antidiscrimination policies (Cuddy et al., 2007). Conversely, passive harm involves subtle isolation and neglect that may arise from simply avoiding eye contact with someone who uses a wheelchair or limiting peoples’ access to resources (Cuddy et al., 2007). People with disabilities are considered to be “pitied” by the in-group, an ambivalent emotion that can lead to paternalism, avoidance, and patronizing speech, among other things (Cuddy et al., 2007). This ambivalence may enhance negative affect, something that has been shown to increase prejudice as well as discriminative behavior (Olson, 1993).

The SCM is a recent development in research on stereotype composition and behavioral influence. While researchers have found that warmth and competence are likely influential components of the stereotypes that people hold regarding people with disabilities, future research is needed to examine how attitudes change relative to the extent of warmth and competence that people perceive individuals with disabilities to embody.

Social interactions

Negative stereotypes and attitudes towards people with disabilities influence social interactions through increasing social anxiety and behavioral uncertainty (Fichten & Amsel, 1986). Interactions between people with and without disabilities may present unusual circumstances due to disability being a “master status.” A master status is a significant deviation from the cultural norm that has been deemed by society to be central to the individual (Frable, Blackstone, & Scherbaum, 1990). Although the condition may be visible or invisible to the observer, its presence is considered to influence everything about the individual. Other examples of master statuses include significant wealth or talent, gender, and certain ethnicities and sexualities (Frable et al., 1990). It is possible for an individual to have more than one master status, with some indicating great social stigma, and others great cultural value (Frable et al., 1990). An example of this might be someone who is Black, has a disability, and is very wealthy. The presence of others (such as in social interactions) is what makes the condition significant or different.

Unlike research on other stigmatized groups, such as ethnic minorities, the bulk of past research on social interactions and disability has largely excluded the views of people with disabilities as participants. Future research is needed to examine the attitudes of people with disabilities towards others who also have disabilities. Existing research on social interactions has almost exclusively focused on interactions between stigmatized and non-stigmatized individuals. Due to this gap, it is unknown whether attitudes about disability differ based on the disability status of the perceiver.

Interaction Strain

Difficulties that arise during interactions between people from different social groups have been described as “interaction strain” by several researchers and theorists in the areas of psychology, sociology, and disability studies (Fichten, Robillard, & Sabourin, 1994; Kleck, 1969; Park et al., 2003). Interaction strain is characterized by shortened duration of interactions, inhibition of verbal and nonverbal behavior, the expression of opinions that differ from one’s actual beliefs, physiological changes, and generalized discomfort, anxiety, lack of ease, and lowered feelings of self-efficacy (Fichten et al., 1994; Kleck, 1969). There are many possible causes of this strain, including topics previously discussed such as attitudinal ambivalence and stereotype-based thoughts (Park et al., 2003). Kleck (1969) noted that interaction strain presents itself in measurable ways through self-report of discomfort and uncertainty as well as objective measures of physiological arousal. Interaction strain is a phenomenon that is not unique to contact between people with and without disabilities, but rather has been demonstrated across a broad range of in-group and out-group interactions (Park et al., 2003).

People without disabilities tend to report having more self-referent thoughts, often negative in valence, during interactions with people with disabilities than with others (Fichten & Amsel, 1988). In general, the reported thoughts regarding interactions with people with disabilities tend to be more negative (Fichten & Amsel, 1988). These negative thoughts could be related to increased feelings of anxiety and negative affect, both of which are related to prejudice (Pettigrew & Tropp, 2008). So it is possible that

interaction strain may not only be influenced by prejudice and underlying attitudes but it may also contribute to furthering prejudicial feelings.

In a study on interaction strain with a sample size of 351 undergraduate students, Fichten, Amsel, Robillard, Sabourin, and Wright (1997) found that people without disabilities tended to become preoccupied with their own behavior during interactions with people with disabilities. This preoccupation led to negative self-evaluations, and in turn negative affect (Fichten et al., 1997). As has been discussed, negative affect can increase prejudice and stereotypical thinking. Fichten and colleagues (1997) also found that novelty provides some explanation of discomfort during interactions with people with disabilities. This was indicated by participants without disabilities having more thoughts in general about interaction with people with disabilities, which may indicate curiosity and a desire to seek out information about the individual (Fichten et al., 1997).

In another study Fichten (1986) asked students with disabilities about their perceptions of interactions with peers who did not have disabilities. The participants felt that other's behavior toward them tended to be directed by their disability (Fichten, 1986). This was also one of very few studies that have asked people with disabilities to evaluate the behavior of others with disabilities. These evaluations were more negative than those made by people without disabilities (Fichten, 1986). This could possibly suggest that people with disabilities feel pressure not only to act a certain way personally, but also expect others with disabilities to act in ways that are socially acceptable or are not stereotype confirming.

Disability Factors

There are a multitude of elements that influence interactions between people with and without disabilities. The factors that are most relevant to review for the purpose of the present study include factors of the specific disability, individual characteristics, behavior on the part of the person with a disability, and the attitudes or stereotypes that either individual holds.

Visible disabilities have more of an obvious effect in that they are a focal point of the individual. Interaction partners may react based off of feelings of ambivalence due to the way in which the disability is in discord with the other attributes of the person, uncertainty of how to act, and competing attitudes and stereotypes (Davis, 1961). Humans have an adaptive tendency to avoid others who may pose some sort of threat, such as the transmission of disease or illness (Park, Faulkner, & Schaller, 2003). Park and colleagues (2003) theorize that physical disability may elicit avoidance due to shared physical characteristics with certain diseases. Such reactions, although generally automatic and involving little conscious thought, may lead to increased prejudice toward and stigmatization of individuals with disabilities.

One's reaction to an individual's disability may depend on the novelty of the disability to the perceiver. For disabilities that are relatively rare, individuals' behavior may be seen as less common and more unusual, therefore being even more salient (Olson, 1993). It is possible that people have more readily accessible attitudes towards people with visible disabilities due to their salience. The more accessible the attitudes, the more bias and behavioral influence they present (Olson, 1993). In addition, these attitudes may

lead to quicker appraisal of the individual, which lowers self-monitoring and leads to more stereotyped observations (Olson, 1993). In a study by Fichten and colleagues (1997), participants reported more thoughts, both positive and negative, in response to a hypothetical social interaction with someone with a visible disability than one with an “average” or “above average” interaction partner. These findings suggest that the stereotypes regarding visible disabilities are particularly accessible, especially for common disabilities such as vision and mobility impairment, as were used in Fichten and colleagues’ (1997) study.

In contrast to the salience of visible disabilities, people with invisible disabilities may be able to “hide” their disability in particular situations. However, this does not mean that people with invisible disabilities do not experience similar forms of discrimination. Due to the invisibility of the impairment, these individuals may face unique difficulties in accessing accommodation or requesting help (Davis, 2005). Sometimes it may be necessary for an individual to discuss their disability to receive needed accommodations, but the individual may fear the reaction from others upon finding out about the disability. It has also been found to be common for people with invisible disabilities to experience more negative thoughts about themselves and their disability, to feel more isolated, and to experience less social support (Davis, 2005). This may be due to stress and worry over frequent decisions of whether or not they should disclose their disability status, and feelings of isolation from other people with disabilities (Pachankis, 2007).

The bulk of past research has pertained only to attitudes about physical disabilities. There is a paucity of research on attitudes about invisible disabilities, although a number of studies have explored attitudes about psychiatric disabilities (Collins & Mowbray, 2005; Lloyd et al., 2005). Of concern is a lack of focus on learning disabilities in particular, which about one in five people in the U.S. are reported to experience (U.S. Department of Education, 2010).

Besides being visible or invisible, disability can also be described in terms of categorizations (physical, cognitive, intellectual, sensory, medical, communication, and psychiatric). The literature on attitudes toward people with specific types of disability suggests that there is a hierarchy of stigma in which some types are viewed more or less positively than others (Smart, 2009). The hierarchy is influenced by the previously discussed factors of how common the disability is and how salient it is (such as whether it is visible or invisible), as well as the stereotypes related to each category. Physical disabilities are considered to have the least stigma, followed by cognitive, intellectual, and finally psychiatric disabilities with the greatest stigma (Smart, 2009). It is possible that physical disabilities have the least stigma because they tend to be the least ambiguous, they are easier to understand, and the individual's limitations may be more obvious to the observer. Other disabilities are more ambiguous due to uncertainties regarding the cause and limitations, and because they are often invisible (Smart, 2009). The characteristics of the disability and the accommodations needed also influence whether or not the individual needs to describe their disability to others.

Disability categorizations have primarily been considered in terms of the amount of stigma assigned to each by society. Whether the type of disability that an individual personally has influences their attitudes towards others with disabilities, their disability identity, or feelings of connectedness with the disability community has not been thoroughly explored.

Disclosure

Disclosure in terms of disability is the act of revealing to others that one has a disability, and possibly certain details such as the nature of the disability and any assistance the individual may require. In a study that examined social interactions between participants without disabilities and a person in a wheelchair (who did not actually have a disability), it was found that if the individual in the wheelchair acknowledged his or her disability at the beginning of the interaction, the person without a disability evaluated the individual more positively (Bailey, 1991). Bailey (1991) hypothesized that the action of disclosure puts the person without a disability at ease and that it indicates the subject of disability is not off-limits or taboo. While disclosure may be helpful to the interaction partner who does not have a disability, it puts the person with a disability in a position that places his or her own actions on display and under the critique of the other.

Contact

The topics discussed above present both barriers to and aids for successful between-group interactions. Attitudinal ambivalence, interaction strain, the salience and novelty of certain identities, and the possible stress of disclosure may all be alleviated

through extensive contact between in- and out-group members (Kleck, 1969). Contact between groups as a means of improving attitudes is not a new idea. The intergroup contact theory was presented in 1954 by Allport, who theorized that prejudice might be reduced through equal status contact, shared common goals, institutional supports such as laws and societal beliefs or values, and perceived common interests. Since Allport, researchers have suggested that the optimal conditions presented by his theory may not be essential, but that they likely facilitate the reduction of intergroup prejudices and that the effects of contact may be generalizable to other groups or situations (Pettigrew & Tropp, 2006). The operational definitions of contact are wide-ranging, which has led to a great amount of research utilizing an uncertain variable with low predictive power (Altman, 1981). There is a need for researchers to come to a consensus on a single operational definition of contact and to devise a psychometrically sound scale for evaluating the construct.

Intergroup contact between people with and without disabilities may lead to a reduction of or reformation of incorrect assumptions and stereotypes that are held by people without disabilities. Pettigrew and Tropp (2008) conducted a meta-analysis of 515 studies on intergroup contact (not necessarily specific to people with disabilities) that included 150,089 individuals from 38 nations, and found in part that increased knowledge was a mediator in the relationship between contact and prejudice reduction. Knowledge appears to function through increasing perceived similarities between groups (Pettigrew & Tropp, 2008). Even stronger mediators of this relationship are empathy and anxiety

(Pettigrew & Tropp, 2008). This could occur through increased perspective taking and gradual reduction of the novelty of their other group's unique characteristics.

A potential source of contact for people with and without disabilities is inclusive education. While the focus of the present study will be on students in a college setting, contact through inclusion may begin in preschool and elementary school. Maras and Brown (1996) described the optimal environment for classroom contact as follows:

Ideally classes should be small and physical access should be as easy as possible. Nonteaching staff should be used effectively to ensure all children are adequately supported. Children with disabilities should be integrated into their local schools. Sessions involving integrated contact should be structured and involve cooperative tasks in which all participants should have clearly defined roles. Mainstream children and teachers should be well prepared for integration and be given basic information along with the opportunity to ask questions, and vice versa for children with disabilities and their teachers. (p. 2131)

Considering Allport's suggestions for intergroup contact, this optimal environment should give students the opportunity to interact on an equal level, they would be working together to meet the same goals through cooperative tasks, and they would receive support through the school. Maras and Brown (2000) later found through research that schools which downplayed disability categorizations or labels and therefore the salience of them tended to have children with less differentiated (and less biased) attitudes than those who placed more emphasis on disability. Students without disabilities in inclusive classrooms tend to hold positive views towards being in the same class as students who have disabilities (Salend & Garrick Duhaney, 1999). Through review of the literature, successful inclusion appears to have many benefits for students without disabilities including increased acceptance and understanding of individual differences, awareness

and sensitivity to the needs of others, and the opportunity to become friends with peers with disabilities (Salend & Garrick Duhaney, 1999). A study of the effects of structured and planned contact also found that, after three months, children had begun to use the category of disability in a more differentiated way (Maras & Brown, 1996). This differentiation could indicate that carefully orchestrated contact aids in viewing children as individuals rather than as children with disabilities.

However, there have been concerns that the impact of inclusion on teachers may not be quite as positive. Some teachers have voiced issues with meeting the needs of their students due to lack of funds, resources, or training (Salend & Garrick Duhaney, 1999). In addition, not all researchers and study results agree that inclusion is an effective form of contact. A review on inclusion of students with intellectual disabilities found that contact with peers with intellectual disability did not have a significant effect on attitudes, likely due to the unstructured nature of the contact (Siperstein, Parker, Norins Bardon, & Widaman, 2007). Also, even with carefully structured contact, children with disabilities continue to rate their peers with disabilities more negatively than other peers (Maras & Brown, 1996).

Students with Disabilities in Higher Education

Students with disabilities make up almost 11 percent of all undergraduates in the U.S. (U.S. Census Bureau, 2012). The enrollment rates of students with disabilities have been increasing in recent years in the U.S., likely due to relatively recent legislation, the efforts of advocacy groups, universities searching for “non-traditional” students, and the efforts of some universities to provide more opportunities for people with disabilities

(Hill, 1992). Higher education is an important aspect of life for many people with and without disabilities. It presents opportunities to meet goals, compete in the job market, and become more independent and financially secure. For these reasons, college may arguably be especially important for people with disabilities (Fichten, Robillard, & Sabourin, 1994). According to Collins and Mowbray (2005), people with disabilities are just as likely to have completed at least some college, and they may pursue a college education even more actively than students without disabilities.

Before the 1970s, many people with disabilities were unable to attend college (Stanley, 2000). With anti-discrimination legislation and improvements to accommodations over the last 40 years or so, more students with disabilities are now able to go to college. However, even with legislation and disability access services (DAS), there are still barriers to success in higher education for many people with disabilities (Collins & Mowbray, 2005). While many of the accommodations that are now required are structural in nature and allow easier access for people with physical and mobility disabilities, accommodations for students with invisible disabilities may still be lagging in some areas.

Students with learning disabilities, which make up a significant portion of DAS users, may face difficulties due to their disability being invisible, misconceptions about their needs for accommodations, and limited faculty knowledge about their disability (Hill, 1992). Although these students receive support through legislative policies, Brinckerhoff, Shaw, and McGuire (2001) note that the degree of accommodation that

meets requirements to afford an “*equal opportunity* to achieve equal results” is often subjective (p. 418).

The concerns about lack of awareness among faculty are echoed among students with other disabilities (Collins & Mowbray, 2005). Additional issues may include a lack of effective programs, services, and staff resources (Collins & Mowbray, 2005). While these are primarily institutional factors, there are also barriers in the social realm, which influence and are influenced by the foundational legislation and institutional structures. Stigma presents an obstacle to the access of services as students may fear that describing their disability to their professor to request needed accommodations could lead to the professor seeing them as different or less competent than other students (Fichten, Amsel, Bourdon, & Cretil, 1988). Even with such concerns about classes, studies have found that students with disabilities report more successful integration academically than socially (English, 1993). Support services help students to receive classroom accommodations, but not necessarily social support (English, 1993). Still, not all students with disabilities perceive these issues; with Stanley (2000) reporting about a quarter of students with disabilities in a sample of 41 saying university community was supportive of them, and half reportedly not noticing any negative reactions by others.

Even with accommodations set up by the university, students with disabilities may not succeed if their professors are not prepared to meet their needs, if they hold negative attitudes towards people with disabilities, or if they feel uncomfortable about the situation (Fichten et al., 1988). Fichten and colleagues (1988) also found that professors with no experience teaching students with disabilities were less comfortable with the idea

of teaching a student with disability. This could indicate that, with experience, professors may be more able and willing to make accommodations for students. Many studies have provided findings that suggest some professors lack the necessary knowledge and training to successfully work with their students with disabilities (Stanley, 2000). Additionally though, willingness to accommodate may be influenced by personal attitudes toward people with disabilities (Stanley, 2000). Improving attitudes towards people with disabilities in general may be one way to progress. Students suggested ways to improve acceptance and social integration in a study by Denny and Carson; these included the modeling of appropriate interactions by professors, cooperative class work, improving physical access to university-wide activities, and providing training for faculty and staff about disabilities, meeting the needs of students, and the various services that are available at the institution (as cited in Stanley, 2000, Research Studies on Student-life section, para. 13). In addition, as people with disabilities make up the largest minority group in the U.S., there is an apparent need to include disability in course content regarding diversity, respect, and acceptance of differences. Education alone should only be viewed as an effective form of contact when it meets Allport's requirements for intergroup contact. While contact and education have important implications for attitudes toward people with disabilities, it is critical to also examine attitudes from the perspective of people with disabilities.

Disability Model

Disability models are sets of assumptions about the cause, nature, and treatment of disability that influence the way in which disability is defined and how it is addressed. Historically, and in some modern religious cultures, disability has been conceptualized using the *moral model* (Smart, 2009). In this model, disability may be viewed as the result of immoral or sinful behavior, or as a test of faith (Smart, 2009). Due to its relation to religious and moral beliefs, this model is likely to lead to suggestions for dealing with disability that include prayer and spiritual healing. The most popular disability model in our society is medical in nature (Smart, 2009). In the *medical model*, disability is determined by a deviation from a statistically determined norm in any area of major functioning (Smart, 2009). The presence or absence of disability is determined through diagnostic criteria for the purpose of treatment or cure, and the disability is viewed as an individual difference, so it is therefore a problem for the individual to deal with. When disability is taught in undergraduate courses, it is primarily presented from this medical model (Rosa et al., in press). However, the preferred model of disability rights advocates and members of the disability community is social in nature. In all other models, the person with a disability carries the blame or the cause of the disability. In the *social model* of disability, the cause of the disabling experience lies instead in society's lack of accommodation for people's differences (Olkin, 1999). Disability occurs because societies tend to be physically constructed with the assumption that everyone is healthy, non-disabled, and shaped according to the norm or the ideal (Wendell, 1996). The social model encourages people to view their disability as one component of their collective

strengths and weaknesses. Disabilities are seen as a part of natural human variation, and as such, something that society should be universally designed to support (Wendell, 1996). The social model allows for the idea that the formation of an identity inclusive of disability is a positive experience, one that can help to improve an individual's psychological wellbeing and adaptability (Dunn & Burcaw, 2013).

Disability Identity

Much of the focus on attitudes toward people with disabilities has been placed on people without disabilities. However, it is also meaningful to consider how people with disabilities view others with the same disability, with different disabilities, and the group as a whole. Possible factors that could affect these attitudes include whether an individual views his or her disability in a positive or negative way and the extent to which the disability has been incorporated into one's identity. Simply defined, identity is the way one understands and views oneself, and is often viewed by others (Bagatell, 2007). Having a disability may influence how an individual sees his or herself and, when known, how others see the individual.

Building an identity that includes one's disability is an important part of adapting to the presence of the disability and the way it affects one's life. Adaptation to disability involves affective, cognitive, and behavioral changes that move the individual toward an optimal state of congruence with their environment (Smart, 2009). However, having a disability does not necessarily mean that the individual will develop an identity inclusive of their disability (Dunn & Burcaw, 2013). People may think of their disability in varying ways: as an important part of who they are, as a connection to other people with the same

disability, and as a connection to people with disabilities as a whole. It is also possible that they acknowledge only some of these aspects or that they do not relate to any of them. Hahn and Belt (2004) described disability identity as being composed of personal and community dimensions. Personal identity involves viewing oneself as a person with a disability, whereas communal attachment involves viewing oneself as connected to all people with disabilities (Hahn & Belt, 2004). If people with disabilities feel a positive connection to the disability community, it is possible that they will have more positive attitudes towards others with disabilities on a larger scale.

The role of a disability identity for people with disabilities is a relatively new concept in research. Past studies have found that having a positive view of oneself as a member of the disability community and affirming one's disability may be related to higher satisfaction with life and increased feelings of self-efficacy (Hahn & Belt, 2004; Bogart, 2014). It is possible that, due to its relationship with satisfaction with life, disability identity may also have a positive effect on associations with others. However, the effect of disability identity specifically on attitudes toward disabilities has not yet been examined.

CHAPTER 4 – Attitudinal Interventions

The goal of the present research is not only to examine attitudes about disability, but also to intervene upon them. Recall the aforementioned topics of the nature of attitudes, the present state of disability within organizations, education, and society, the nature of disability, the value of intergroup contact, and the importance of the model from which disability is conceptualized. Each of these topics is important to keep in mind when evaluating interventions on attitudes toward disability. Attitudes are incorporated early in development through social learning, and are further established through the process of confirmation bias; in which individuals attend to the evidence that best fits their preexisting beliefs (Nickerson, 1998). Due to the nature of attitudes, as well as the pervasiveness of ableism in society, attitudes about disability may be particularly difficult to intervene upon.

To address this issue, in a recent study on stereotyping interventions, Duguid and Thomas-Hunt (2015) tested the efficacy of manipulating social norms about bias. Recent research and interventions have introduced the practice of presenting stereotypes as universal and natural (Duguid & Thomas-Hunt, 2015). The researchers predicted that this practice might actually increase stereotyping through the creation of a social norm. To combat this, Duguid & Thomas-Hunt (2015) proposed that a social norm for avoiding negative stereotyping could be implemented, while still educating about the automatic nature of stereotypes to avoid placing blame on individuals. A set of interventions was conducted, targeting stereotypes toward three social groups (overweight individuals, women, and older adults) (Duguid & Thomas-Hunt, 2015). Findings supported the use of

social norms that focused on reducing stereotyping as a group, rather than placing the impetus on the individual (Duguid & Thomas-Hunt, 2015).

Previous research on interventions to improve attitudes toward disability have also utilized perspective taking, empathy, and persuasion with varying success. Past studies have found that perspective taking promotes seeing similarities between the in- and out-group, decreases stereotypical thinking, and generally improves intergroup attitudes (Vescio, Sechrist, & Paolucci, 2003). Vescio and colleagues (2003) suggested that identifying with other groups might also aid in overcoming cognitive barriers. They found that while perspective taking increased the positivity of attitudes toward the out-group that this improvement did not generalize to other groups (Vescio et al., 2003). It was also found that, during interactions, when the out-group member disconfirmed negative stereotypes through his or her behavior, attitudes toward them were more positive following the interaction (Vescio et al., 2003). It is possible that perspective taking may still improve attitudes even if the out-group member confirms negative stereotypes. This method might be most useful if introduced by an individual in authority who in-group members value, such as a teacher or a political figure.

The technique of persuasion is probably best used in an educational setting or presented from a source that is considered to be credible. Olson (1993) recommends that, in order to use persuasion effectively, the target audience should be motivated to change their opinion and should have ample time to process new information. Generally, the more that an individual is exposed to the information, the more likely he or she may be to incorporate it (Olson, 1993). Along those lines, it is possible that interventions that

simply provide accurate information about people with disabilities may result in attitude change. In a review of interventions to decrease stigma, Heijnders and Van Der Meij (2006) noted that information-based interventions tend to be most effective when the facts presented counter false assumptions and stereotypes held by society. Particularly important may be the content of the educational program and how it is presented.

As previously mentioned, the medical model of disability is the most widely used conceptualization of disability in the U.S. Due to the focus the medical model places on the negative impact of impairment, the rhetoric of this model could actually perpetuate negative stereotypes about disability. So, to use this model in an educational intervention would be unlikely to have a positive influence on attitudes about disability. An intervention taught using content from the social model would likely be much more effective in improving attitudes toward people with disabilities. However, interventions utilizing these two models have not been thoroughly compared and evaluated by researchers.

In a review of interventions on attitudes toward disability, Donaldson (1980) discussed the techniques of attitude improvement being utilized at the time of review, prior to 1980. These methods were contact, information, persuasion, analysis of prejudice, disability simulation, and group discussion (Donaldson, 1980). From this review, Donaldson (1980) concluded that the most successful interventions involved structured contact and analysis of prejudice, also noting that course instruction was promising but difficult to measure. From the present author's own review of the literature, there has not been a modern update reviewing more recent interventions in this

area. Further, the major techniques of intervention appear to remain similar to those used at the time of Donaldson's review.

Recall that applied psychology utilizes six components for successful interventions: 1) choice and control in the learning process, 2) awareness of one's own inappropriate behavior, 3) publicity, 4) commitment to future appropriate behavior, 5) explaining the importance of appropriate behavior to others, and 6) recognizing the dissonance of inappropriate behavior with one's self-concept. From the above examples of research on attitudinal interventions, it might be suggested to add the concepts of perspective taking, use of a credible source or presenter, giving sufficient time and repetition for incorporation, and providing appropriate content that does not further perpetuate biased beliefs. Further, the components of contact and the critical analysis of prejudice from Donaldson's 1980 review of attitudinal interventions are important to consider.

Specific research on the improvement of attitudes toward disability has been inconsistent and limited. The available studies on interventions in the literature are disconnected from one another; they fail to build upon existing research and interventions. Further, there has not been a thorough review of interventions conducted since Donaldson (1980). It is one of the objectives of the present study to present a framework for interventions in the form of a higher education course, and incorporating the elements of successful interventions outlined above.

Present Study

The present research examined attitudes toward social interactions with people with disabilities as well as attitudes toward people with disabilities as a group. Both participants with and without disabilities were included in the research process. Two studies were conducted, the first examined (1) the affective, cognitive, and behavioral factors that influence attitudes toward people with disabilities on an individual versus group level, (2) differences in attitudes toward people with and without disabilities on each dimension (affect, cognition, and behavior), (3) demographic factors that influence attitudes (contact, age, and gender), (4) the disability factors that influence attitudes (type of and visibility of disability), and (5) the impact of disability identity on the attitudes of people with disabilities towards others with disabilities. The second study examined the effects of education on attitudes about disability. Two undergraduate psychology courses were compared, an Intervention group that focused on disability topics and the social model of disability, and a Quasi-Control group with limited disability-related content presented from the medical model. The same factors as the first study were measured, with the addition of disability model orientation.

Several predictions for results were made based upon the review of the literature. First, it was hypothesized that participants with disabilities would report more positive attitudes than participants without disabilities toward both people with disabilities as a group and toward a social interaction with a person with a disability. Conversely, it was hypothesized that participants without disabilities would report more positive attitudes than participants with disabilities toward a social interaction with a person with no

disability. Both of these predictions are based off of the literature on in-group preferences, in which members of the same group are likely to share attitudinal positions towards members of out-groups (Hannon, n.d.).

Second, it was hypothesized that participants with more previous contact with people with disabilities would report more positive attitudes toward people with disabilities, both in an interaction and as a group, compared to participants with less contact. This hypothesis was based on the extensive previous research on contact, which indicates that contact between groups tends to improve between group attitudes (Allport, 1954; Pettigrew & Tropp, 2008).

Third, for participants with disabilities, it was hypothesized that those with a greater sense of attachment to the disability community would report more positive attitudes toward people with disabilities as a group than individuals who do not report high communal attachment. This prediction is based off of Hahn and Belt's (2004) research, which suggested that people with a sense of communal attachment are more likely to feel positively about connecting with the disability community.

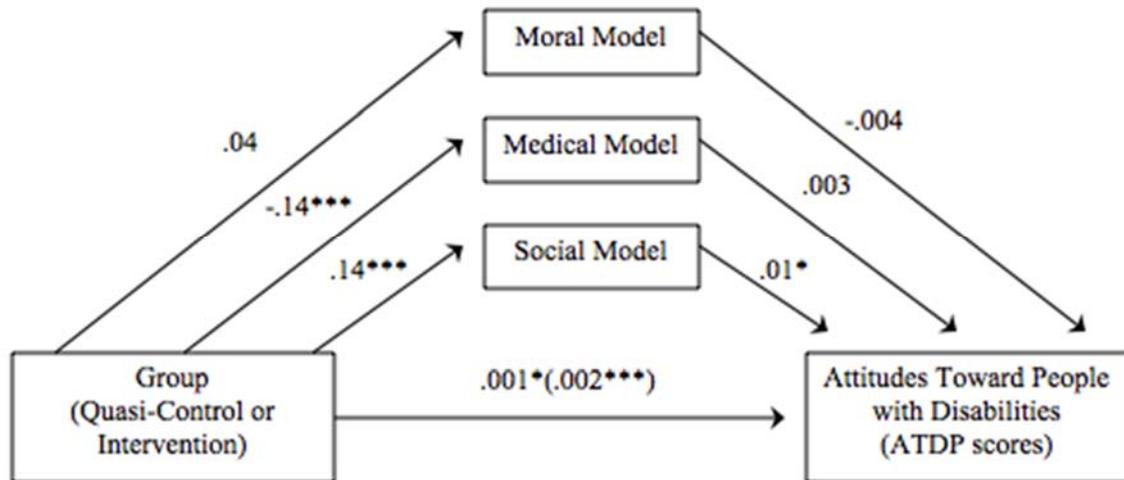
Fourth, it was also hypothesized that participants with disabilities with a greater sense of personal disability identity would report more positive attitudes toward people with disabilities as a group. Although personal identity involves one's relation to his or her own disability, it was predicted that the extent of affirmation involved in identifying with one's disability would relate to positive attitudes towards other's disabilities.

Fifth, it was hypothesized that all participants would report more positive attitudes regarding a social interaction with a student with a physical disability than with a

cognitive disability. This prediction is based upon research that has established a hierarchy of the stigma experienced by people with different types of disabilities. In this research, physical disabilities tend to be subject to the least amount of societal stigma, followed by cognitive disabilities (Smart, 2009). Although physical and cognitive disabilities are close on the hierarchy of stigma, it is predicted that there will be a significant difference due to the added effect of visibility. Physical disabilities are less ambiguous than invisible cognitive disabilities, which may reduce negative feelings for the interaction partner (Smart, 2009).

Three additional hypotheses were made for the second study. First, it was hypothesized that participants in the Intervention group would report more positive attitudes toward people with disabilities than participants in the Quasi-Control group following the intervention. Second, it was hypothesized that participants in the Intervention group would report higher social model scores than participants in the Quasi-Control group following the intervention. Third, a mediational model was tested (see Figure 1). This model predicted that which group participants were in would be related to their reported attitudes towards people with disabilities. It was hypothesized that being in the Intervention group would predict more positive attitudes, and that social model orientation would mediate the association between group and positive attitudes. These predictions were based off of past research on attitudinal interventions, as well as on disability model theory.

Figure 1.



*Model testing meditational role of social, medical, and moral models of disability in the relationship between Group and ATDP. ATDP scores at time 1 were included as a covariate. The coefficient in parentheses is the total effect and the adjacent number is the direct effect. Values are b coefficients. * $p < .05$, *** $p < .001$*

CHAPTER 5 – Study 1 Method

Participants

Study 1 included participants from two populations, Oregon State University (OSU) Psychology Students, and Oregon Disability Access Services (DAS) users. Participants were required to be 18 years or older and living in the U.S. The sample populations were not restricted to any gender or ethnic group.

OSU Psychology Students

The first sample consisted of students at OSU enrolled in Psychology courses ($n = 170$). Students in Psychology classes at OSU accessed the recruitment posting and volunteered to participate using the Sona Systems website. Volunteers were sent a link to the survey, which included the alternative consent document, via email. Following completion of the study, students were given half an hour of course credit as compensation.

Oregon DAS Users

The second sample was made up of students with disabilities registered with DAS at a higher education institution in the state of Oregon ($n = 67$). Participants were recruited with an email sent through the DAS Listserv inviting Disability Services professionals at colleges and universities in Oregon (public, private, and community colleges) to email the survey to students with disabilities on their campuses. Included in the email was a link to the survey, which included the alternative consent document. DAS participants did not receive compensation for completing the study.

Participants by Reported Disability

Participants from both samples were combined and split into two groups based upon reported disability status: Participants with No Disabilities ($n = 158$; 67.1% female), ranging in age from 18 to 49 years ($M = 20.12$ years, $SD = 3.62$); and Participants with Disabilities ($n = 79$; 69.6% female), ranging in age from 18 to 63 years ($M = 27.97$ years, $SD = 11.02$). Of the disabilities reported by participants, 33.3% were Cognitive, 20.2% Psychiatric, 14.7% Physical, 13.2% Medical, 12.4% Sensory, 3.1% Communication, 3.1% Other, and 0% Intellectual. Due to the large difference in mean age between the two groups, and to correct for non-normality, participants with and without disabilities were matched on age (within two years) and gender. One participant with a disability reported “other” for gender, and was excluded from analysis because it was not possible to match this participant with another. After age and gender matching, 113 Participants with No Disabilities and 34 Participants with Disabilities were excluded from analysis. From the original samples, 59 OSU Psychology Students and 31 Oregon DAS Users were included.

Participants with No Disabilities

After age and gender matching, 45 Participants with No Disabilities were included (66.7% female), ranging in age from 18 to 49 years ($M = 21.80$ years, $SD = 6.10$). A large percentage of participants reported a race or ethnicity other than White/Caucasian (53.3% White/Caucasian; 28.9% Asian; 8.9% Hispanic/Latino; 4.4% Arab; 4.4% Mixed Race or Other), with 18% reporting that they were from a country other than the U.S.

Participants with Disabilities

The age and gender matched sample of participants that reported having a disability ($n = 45$) also had 66.7% female participants, and a similar age range of 18 to 51 years ($M = 21.93$ years, $SD = 6.48$). Fourteen of the participants were from the original sample population of OSU Psychology Students, and 31 were from the sample population of Oregon DAS Users. Unlike the Participants with No Disabilities, there was not a large percentage of non-White/Caucasian participants within the sample of Participants with Disabilities (80% White/Caucasian; 8.9% Mixed Race or Other; 4.4% Hispanic/Latino; 2.2% Asian; 2.2% Black/African American; 2.2% Native American). Of the disabilities reported by participants, 32.9% were Cognitive, 18.6% Physical, 18.6% Psychiatric, 12.9% Sensory, 8.6% Medical, 5.7% Communication, 2.9% Other, and 0% Intellectual.

Materials

Multidimensional Attitudes Scale Toward Persons With Disabilities

The Multidimensional Attitudes Scale Toward Persons With Disabilities (MAS) measures the three components of attitude (affect, cognitions, and behaviors) using three separate subscales (Findler et al., 2007). The original MAS Affect subscale consisted of 16 emotions. Five emotions were added for the purpose of the present study (cheerfulness, admiration, contentedness, interest, and confidence), to balance the valence of affect being measured. The MAS Affect subscale in the present study consisted of 21 items ($\alpha = .84$), with a range of 21 to 105 points, and with higher scores indicating more negative affect. One statement was added to the MAS Cognitions subscale, for the purpose of measuring the construct of competence. The MAS Cognitions subscale was 11

items long ($\alpha = .79$), with possible scores ranging between 11 and 55 points, and with higher scores indicating more negative thoughts. The original MAS Behaviors subscale was used, with 8 items ($\alpha = .81$), a range of scores between 8 and 40 points, and with higher scores indicating more negative behaviors.

MAS subscale questions were asked in reference to a social interaction vignette. The original vignette referred to characters involved in a social situation and asked participants to imagine the scenario from a character's point of view (Findler et al., 2007). The intention was that participants would project their personal attitudes onto the scenario and respond according to those attitudes (Findler et al., 2007). To avoid confusion and to increase the chance that the participants' actual attitudes regarding the situation were being reported, in the present study participants were asked to imagine taking part in the interaction. Participants were asked to indicate the degree to which they thought each item reflected how they would personally feel, what they would think, or how they would act in the described situation on a 5-point scale with response options ranging from 1 (very unlikely) to 5 (very likely). Three scenarios were used, with each participant being randomly assigned to respond to one. The three scenarios described an interaction with someone with No Disability, an interaction with someone with a Learning Disability (an invisible disability), and an interaction with someone with a Physical Disability, who uses a wheelchair (a visible disability). The wording of the vignette used, with manipulated portions in brackets, was:

You are going out to lunch with some friends to a restaurant on campus. Another student, [in a wheelchair,] whom you've never met before, enters the restaurant

and joins the group. One of your friends introduces her to you as Stephanie. Following this, Stephanie strikes up a conversation about a paper she was assigned to write on the topic of people with disabilities. She says, ["I don't have any disabilities myself, but I think it's an interesting topic/I have a learning disability, so I think it's an interesting topic/I have a physical disability, so I think it's an interesting topic"]. After the conversation has ended, everyone else leaves for class, with only you and Stephanie remaining alone together at the table. You have 15 minutes to wait for your ride. Think about this scenario when answering the next three sets of questions.

A previous factor analysis of the MAS confirmed that there were three factors (affect, cognitions, and behavior) that explained 47.5% of the total variance (Findler et al., 2007). The MAS has been used in a small number of studies, including one that found that all three attitude components were related to the amount, but not quality, of contact (Hein et al., 2011). The present study also examined the amount and quality of contact, which allows for comparison with that result. The MAS was used in this study for the purpose of measuring each participant's attitudes toward a social interaction with a person with a physical disability, cognitive disability, or no disability.

Attitudes Toward Disabled Persons Scale

The second existing measure included in the survey, the Attitudes Toward Disabled Persons Scale (ATDP) (Yuker, Block, & Youngg, 1970), has been the most widely used scale in the area of attitudes and disabilities for almost 50 years (Antonak & Livneh, 1988). Developed to measure attitudes toward people with disabilities as a group,

the ATDP is based on the assumption “that disabled people may be viewed by both the disabled and the non-disabled as either different from physically normal persons or as essentially the same” (Yuker et al., 1966, p. 2). This assumption guides the use of the ATDP as a measure of attitudes toward people with disabilities at a societal level, or as a group, rather than on an individual basis. Due to this, the ATDP should measure general attitudes toward people with disabilities whereas the MAS should measure attitudes on a personal level towards people with two different types of disability.

There are three forms of the ATDP: O, A, and B, with A and B being revised versions of form O (Antonak & Livneh, 1988). Form A was chosen for use in this study after consideration of the reported psychometrics.

For the purpose of this study, the six response options were changed from the original -3 to +3 scale to a more common scale ranging from 1 (I disagree very much) to 6 (I agree very much). No midpoint was provided, which forced test-takers to choose either agreement or disagreement with the statement, removing the ambiguous neutral response option. The scale is 30 items long ($\alpha = .86$), with scores ranging from 0 to 180, and higher scores indicating more positive attitudes (Antonak & Livneh, 1988). Due to the updated scoring system used, possible scores on the present study ranged between 30 and 180 points, with higher scores still indicating more positive attitudes. Item wording was also revised for this study to avoid ableist language and to reflect the currently accepted terms (for example, “disabled people” was rewritten as “people with disabilities”).

The reliability on the ATDP scales have been obtained through a variety of methods, with different samples, and over different spans of time, overall concluding that the ATDP is an acceptably reliable scale (Antonak & Livneh, 1988). Criterion and construct validity have also been evaluated by running correlations between the ATDP forms and various demographic measures. No significant relationships have been found other than with gender, for which females tend to report more positive attitude scores than males (Antonak & Livneh, 1988).

There is a considerable amount of evidence that suggests attitudes are multidimensional (Findler et al., 2007; Hannon, n.d.). However, the ATDP scales are unidimensional in construction. Many factor analyses have been performed on the various forms of the ATDP, with varying conclusions. Only one study in the literature review reported a one-factor solution for the ATDP (Hafer, Wright, & Godley, 1983). The authors of the ATDP have acknowledged the evidence that suggests attitudes toward people with disabilities are multidimensional in nature, but maintain that the majority of the variance can explained by a “general” attitude factor (Hafter et al., 1983). The ATDP was used in the present study to measure each participant’s attitudes toward people with disabilities on a group-level.

Communal Attachments and Personal Identity Scales

Only participants who reported having a disability were directed to take this portion of the survey.

The questions on both scales were developed using the concepts of ethnic identity and collective and individual self-esteem, adapted to apply to disability identity in

particular (Hahn & Belt, 2004). The Communal Attachments Scale is a 6-item ($\alpha = .66$) Likert-type test that measures the extent to which participants feel a sense of belonging with the disability community (referred to in the present study as Communal Disability Identity) (Hahn & Belt, 2004). Possible scores on the Communal Attachments Scale range between 6 and 36 points, with higher scores indicating a greater extent of attachment to the disability community.

The 8-item ($\alpha = .85$) Personal Identity Scale measures the extent to which individuals affirm or deny their disability as part of their own identity (referred to in the present study as Personal Disability Identity) (Hahn & Belt, 2004). Scores on the Personal Identity scale range from 8 to 48 points, with higher points indicating higher Disability Identity.

Evidence of the validity of these scales was shown in the original study with the finding that participants who had the highest scores on both scales were more likely to have an earlier onset of disability and were less likely to support efforts to find a cure for physical disabilities (Hahn & Belt, 2004). The disability activist community tends to oppose a cure, suggesting that the scales successfully differentiated between people with disabilities who hold the views of the disability community as a whole and affirm their own status as an individual with a disability. These scales were used in the present study to examine whether the attitudes of participants with disabilities are related to their reported strength of disability and communal identities.

Demographic and Contact Questions

The remaining survey questions examined background information and details of participants' previous contact with people with disabilities. Demographic questions included participant age, gender, ethnicity, language, year in school, disability status, and disability type. The contact questions assessed the frequency and quality of the previous interactions participants have had with people with disabilities, focusing on factors that could possibly influence attitudes. Participants were also asked to report the types of disability that their past interaction partners with disabilities have had. Only one of the questions assessing contact was used for the purposes of the present study: "How often do you interact with people with disabilities?" (1) Never, 2) Less than once a year, 3) 2-3 Times a year, 4) Once a month, 5) 2-3 Times a month, 6) Once a week, 7) 2-3 times a week, 8) Daily). Possible scores ranged from 1 to 8 points, with higher scores indicating greater frequency of contact with people with disabilities. Scores were dichotomized into two groups, Low Contact (1-5 points), and High Contact (6-8 points).

Procedure

This study was approved by the Oregon State University Institutional Review Board. Participants from both samples were provided links to the survey through email. From this link, they were directed to the Qualtrics online survey system where they viewed the alternative consent document and, upon consent, were given access to the survey. The Qualtrics system randomly assigned each participant to view and respond to one out of the three possible MAS scenarios (No Disability, Learning Disability, or Physical Disability). After responding to the three MAS scales following the scenario, all

participants were presented the ATDP scale, demographic questions, and contact measures. Participants who reported having a disability in the demographic questions were also automatically directed to respond to the Communal Attachments and Personal Identity scales.

CHAPTER 6 – Study 1 Results

Factorial analyses of variance and a multiple hierarchical regression were utilized to examine the effects of Participant Disability, Contact, Personal Disability Identity and Communal Disability Identity, as well as the demographic variables of Gender and Age, upon the attitude scales (ATDP and MAS subscales). All pairwise comparisons were performed using simple effects analyses based on the linearly independent pairwise comparisons among the estimated marginal means. Correlations were also conducted to examine the relationship between the ATDP and MAS subscales. Results are organized by analysis and scale.

Correlations

Pearson correlations were run between the ATDP and each MAS subscale separately, using only the data from the Learning Disability and Physical Disability scenarios, to examine whether attitudes toward people with disabilities as a group were related to attitudes regarding an interaction with someone with either a physical or learning disability. Scores on each subscale were correlated with ATDP scores only for the Physical Disability scenario (Affect: $r(29) = -.52, p < .01$; Cognitions: $r(29) = -.59, p < .01$; Behaviors: $r(29) = -.62, p < .001$). For the Learning Disability scenario, there were no significant correlations between ATDP and MAS subscale scores ($r(30) < .05, p > .78$).

Factorial Analysis of Variance (ANOVA)

ATDP Scale

A four-way ANOVA was conducted with the ATDP as the dependent variable and Participant Disability (no disability vs. disability), Contact (high vs. low, dichotomized by median split), Gender (male vs. female), and Age (younger vs. older, dichotomized by median split) as the independent variables to determine whether differences in ATDP scale scores were explained by participant disability and amount of previous contact with disabilities.

There was no main effect of Participant Disability or Contact on ATDP scores ($F(1, 89) = .003, p > .05, \eta^2 < .001$). However, Participant Disability and Contact significantly interacted ($F(1, 89) = 10.28, p < .01, \eta^2 = .12$), (Figure 2). In pairwise comparisons of the interaction between Participant Disability and Contact, amount of contact had a significant effect on the attitudes reported by participants without disabilities. Participants without disabilities with high contact reported significantly more positive attitudes than those with low contact ($F(1, 73) = 9.44, p < .01, \eta^2 = .12$). There was not a significant comparison between participants with disabilities with high and low contact. In comparisons between participants with and without disabilities, there were significant differences based on amount of contact. For those with low contact, participants with disabilities reported significantly more positive attitudes than participants without disabilities, ($F(1, 73) = 5.81, p < .05, \eta^2 = .07$). In contrast, for participants with high contact, those without disabilities reported more positive attitudes

than those with disabilities, ($F(1, 73) = 4.64, p < .05, \eta^2 = .06$). There were no other significant comparisons for this interaction.

The strength of the interaction between Participant Disability and Contact increased with the inclusion of Gender, ($F(1, 89) = 14.60, p < .001, \eta^2 = .17$) (Figures 3 & 4). Comparisons between participants with and without disabilities were only significant for male participants. Male participants with disabilities with low contact reported significantly more positive attitudes than male participants without disabilities with low contact ($F(1, 73) = 9.44, p < .01, \eta^2 = .12$). However, for participants with high contact, male participants without disabilities reported significantly more positive attitudes than male participants with disabilities ($F(1, 73) = 10.01, p < .01, \eta^2 = .12$). For participants without disabilities with high and low contact, males with high contact reported significantly more positive attitudes than those with low contact ($F(1, 73) = 17.63, p < .001, \eta^2 = .20$). For participants with disabilities, there was a marginally significant pairwise comparison for males between high and low contact ($F(1, 73) = 3.95, p = .10, \eta^2 = .05$). Male participants with disabilities with low contact reported ATDP scores trending to be more positive than those reported by male participants with disabilities with high contact. There were no significant comparisons between female participants based on amount of contact in this interaction. In the remainder of the pairwise comparisons of the interaction between Participant Disability, Contact, and Gender, it was demonstrated that, although female participants without disabilities with low contact reported significantly more positive attitudes than male participants without disabilities with low contact ($F(1, 73) = 12.64, p < .001, \eta^2 = .15$); this effect reversed for

participants without disabilities with high contact, with males trending towards reporting more positive attitudes than females ($F(1, 73) = 3.95, p < .10, \eta^2 = .05$). The comparisons between male and female participants with disabilities were not significant.

In the interaction between Participant Disability, Contact, and Age, there were only two significant pairwise comparisons. For those without disabilities, younger participants with high contact reported significantly more positive attitudes than those with low contact, ($F(1, 73) = 9.19, p < .01, \eta^2 = .11$), (Figures 5 & 6). This comparison was not significant for older participants, or for participants with disabilities. The other significant comparison was between younger participants with and without disabilities with low contact. Those with disabilities reported significantly more positive attitudes than those without disabilities ($F(1, 73) = 7.85, p < .01, \eta^2 = .10$). This comparison was not significant for older participants. There was not a significant difference in attitudes between younger and older participants in this interaction, and all other pairwise comparisons for the interaction between Participant Disability, Contact, and Age were non-significant.

There were many significant pairwise comparisons for the interaction between Participant Disability, Contact, Age, and Gender (Figures 7 & 8). For female participants without disabilities with low contact, those that were older reported more positive attitudes than those that were younger ($F(1, 73) = 6.71, p < .05, \eta^2 = .08$). There was not a similar significant comparison for participants with disabilities or between younger and older males in this interaction. Male participants without disabilities reported significantly different attitudes based on amount of contact. For older males, those with

high contact reported significantly more positive attitudes than those with low contact ($F(1, 73) = 7.26, p < .01, \eta^2 = .09$); and for younger males, those with high contact also reported significantly more positive attitudes than those with low contact ($F(1, 73) = 10.48, p < .01, \eta^2 = .13$). There was not a similar significant comparison for females. There were a few significant comparisons between females and males for this interaction. Older female participants without disabilities with low contact reported significantly more positive attitudes than older male participants without disabilities with low contact ($F(1, 73) = 11.77, p < .001, \eta^2 = .14$). There was a similar effect for older male and female participants without disabilities with high contact, with females again reporting significantly more positive attitudes than males ($F(1, 73) = 4.61, p < .05, \eta^2 = .06$). This comparison was also significant between younger male and female participants with disabilities with high contact. Younger males reported significantly more positive attitudes than younger females ($F(1, 73) = 4.34, p < .05, \eta^2 = .06$). This was the only comparison in this interaction in which males reported more positive attitudes than females. All other comparisons between males and females for this interaction were not significant. Pairwise comparisons between participants with and without disabilities in this interaction were only found for male participants. For those with low contact, participants with disabilities reported more positive attitudes, but for those with high contact, participants without disabilities reported more positive attitudes. Younger male participants with disabilities with low contact reported more positive attitudes than those without disabilities ($F(1, 73) = 5.93, p < .05, \eta^2 = .08$); but younger male participants without disabilities with high contact reported more positive attitudes than those with

disabilities ($F(1, 73) = 4.02, p < .05, \eta^2 = .05$). There was also a significant comparison for older males with high contact, with those without disabilities again reporting more positive attitudes than those with disabilities ($F(1, 73) = 6.18, p < .05, \eta^2 = .08$). This comparison was not significant for older males with low contact. There were no other significant comparisons for this interaction.

All other pairwise comparisons for the ATDP were non-significant ($p > .10$). No other analysis in the four-way ANOVA on the ATDP scale approached significance ($p > .15$).

MAS Subscales

Each of the three MAS subscales was subjected to a five-way ANOVA to examine the effects of MAS Scenario (no disability vs. learning disability vs. physical disability), Participant Disability (no disability vs. disability), Contact (high vs. low, dichotomized by median split), Gender (male vs. female), and Age (younger vs. older, dichotomized by median split).

MAS Affect Subscale

There was a significant main effect of Contact on MAS Affect subscale scores ($F(1, 89) = 8.82, p < .01, \eta^2 = .16$), with the mean score being significantly lower (indicating more positive affect) for participants with high contact ($M = 46.93, SE = 1.93$), than for participants with low contact ($M = 55.96, SE = 1.75$). Marginally significant interaction between MAS Scenario, Participant Disability, and Age ($F(2, 89) = 2.89, p < .10, \eta^2 = .11$). There was also a significant interaction between MAS Scenario, Participant Disability, Age, and Gender ($F(89) = 3.36, p < .05, \eta^2 = .13$); and a marginally

significant interaction between Participant Disability, Contact, and Gender ($F(1, 89) = 2.85, p < .10, \eta^2 = .06$).

In pairwise comparisons for the interaction between MAS Scenario and Contact, there was a significant difference in affect between participants with high and low contact responding to the Learning Disability scenario. Those with high contact reported significantly more positive affect ($M = 42.10, SE = 3.15$) than those with low contact ($M = 59.74, SE = 3.13$), ($F(1, 47) = 15.75, p < .001, \eta^2 = .25$). This comparison was only significant for participants that responded to the Learning Disability scenario. There were no other significant comparisons for this interaction.

For the interaction between Participant Disability and Contact, there were differences between participants with high and low contact for both those with and without disabilities. For participants without disabilities, those with high contact reported significantly more positive affect ($M = 45.00, SE = 3.28$) than those with low contact ($M = 56.14, SE = 2.05$), ($F(1, 47) = 8.29, p < .01, \eta^2 = .15$). This effect was marginally observed among participants with disabilities as well, with those with high contact trending toward reporting more positive affect ($M = 48.50, SE = 2.25$) than those with low contact ($M = 55.73, SE = 2.95$), ($F(1, 47) = 3.79, p < .10, \eta^2 = .08$). There were no other significant comparisons for this interaction.

When MAS Scenario was included in the interaction between Participant Disability and Contact, there were several significant differences between participants with high and low contact when responding to different MAS scenarios (Figures 9 & 10). In the comparison between participants with disabilities with high and low contact

responding to the Learning Disability scenario, those with high contact reported significantly more positive affect than those with low contact ($F(1, 47) = 13.49, p < .001, \eta^2 = .22$). This was the only scenario with significant differences in scores between participants with disabilities with high and low contact. However, there were additional differences between scenarios among participants with low contact or high contact. Participants with disabilities with low contact reported significantly more positive affect in response to the Physical Disability scenario than the Learning Disability Scenario ($F(2, 47) = 3.24, p < .05, \eta^2 = .12$). In contrast, those with high contact were trending towards reporting more positive affect in response to the Learning Disability scenario than to either the No Disability or Physical Disability scenarios ($F(2, 47) = 3.02, p < .10, \eta^2 = .11$). For participants without disabilities, there was a marginally significant comparison between those with high and low contact that responded to the Learning Disability scenario ($F(1, 47) = 3.59, p < .10, \eta^2 = .07$), with those with high contact trending towards reporting more positive affect than those with low contact. There was also a marginal comparison between participants with and without disabilities with low contact that responded to the Physical Disability scenario ($F(1, 47) = 3.57, p < .10, \eta^2 = .07$). Participants with disabilities reported more positive affect in response to the Physical Disability scenario than those without disabilities. There was not a similar effect found among participants with high contact, or with any other MAS scenario. No other comparisons for this interaction were significant.

Pairwise comparisons between Contact and Gender showed differences between both males and females with high and low contact. In both cases those with high contact

reported more positive affect than those with low contact. For male participants, those with high contact reported significantly more positive affect ($M = 46.06$, $SE = 3.03$) than those with low contact ($M = 56.32$, $SE = 2.82$), ($F(1, 47) = 6.15$, $p < .05$, $\eta^2 = .12$); and female participants with high contact also reported significantly more positive affect ($M = 47.64$, $SE = 2.47$) than those with low contact ($M = 55.59$, $SE = 2.07$), ($F(1, 47) = 6.08$, $p < .05$, $\eta^2 = .12$). There was not a significant difference between males and females, and no other comparisons for this interaction were significant.

With the inclusion of MAS Scenario in the interaction between Contact and Gender, there were still differences between both males and females with high and low contact, but only for those who responded to the Learning Disability scenario. Both male and female participants with high contact reported significantly more positive affect (Males: $M = 39.50$, $SE = 4.71$; Females: $M = 44.05$, $SE = 4.24$), in response to the Learning Disability scenario than those with low contact (Males: $M = 63.38$, $SE = 4.88$; Females: $M = 54.89$, $SE = 3.33$), (Males: $F(1, 47) = 12.40$, $p < .001$, $\eta^2 = .21$; Females: $F(1, 47) = 4.04$, $p < .05$, $\eta^2 = .08$). There was not a significant difference between males and females, and there were no significant differences in scores for the other scenarios based on Contact and Gender.

In the interaction between Contact and Age, there were differences in affect between younger and older participants for both those with high and low contact. For those with high contact, older participants reported significantly more positive affect ($M = 45.28$, $SE = 2.86$) than younger participants ($M = 48.57$, $SE = 2.59$), ($F(1, 47) = 9.26$, $p < .01$, $\eta^2 = .17$). The affect of those with low contact was trending in the opposite

direction, with younger participants reporting marginally more positive attitudes ($M = 55.07, SE = 2.37$) than older participants ($M = 57.02, SE = 2.59$), ($F(1, 47) = 3.44, p < .10, \eta^2 = .07$).

When MAS Scenario was included in the interaction between Contact and Age, there was a marginal difference between younger and older participants, but only those with low contact responding to the No Disability scenario. Younger participants reported significantly more positive attitudes in response to the No Disability scenario than older participants ($F(1, 47) = 3.78, p < .10, \eta^2 = .08$) (Figures 11 & 12). This comparison was not significant for those with high contact, or for any other scenarios. In comparisons between those with high and low contact in the two age groups, there were significant differences in affect reported for the Learning Disability scenario for both age groups. For younger participants, those with high contact reported significantly more positive affect in response to the Learning Disability scenario than those with low contact ($F(1, 47) = 8.19, p < .01, \eta^2 = .15$). This effect was also observed for older participants responding to the Learning Disability scenario, with those with high contact again reporting significantly more positive affect than those with low contact ($F(1, 47) = 7.67, p < .01, \eta^2 = .14$). There were no significant comparisons for any other MAS Scenario in this interaction.

The remaining two interactions with significant pairwise comparisons were the only two that did not involve Contact. First, in the interaction between MAS Scenario, Participant Disability, and Gender, there were only significant comparisons between female participants. Female participants with disabilities reported significantly more

positive affect in response to both the Learning Disability ($M = 46.91$, $SE = 4.22$) and Physical Disability ($M = 46.08$, $SE = 3.19$) scenarios than to the No Disability scenario ($M = 46.91$, $SE = 4.22$), ($F(2, 47) = 3.93$, $p < .05$, $\eta^2 = .14$). There were no significant comparisons between participants without disabilities based on MAS Scenario. There were two significant comparisons between female participants with and without disabilities. In response to the No Disability scenario, those without disabilities ($M = 49.25$, $SE = 4.05$) were trending towards reporting more positive affect than those with disabilities ($M = 60.58$, $SE = 4.39$), ($F(1, 47) = 3.60$, $p < .10$, $\eta^2 = .07$). However, in response to the Physical Disability scenario, those with disabilities reported significantly more positive affect ($M = 46.08$, $SE = 3.19$) than those without disabilities ($M = 57.00$, $SE = 3.89$), ($F(1, 47) = 4.71$, $p < .05$, $\eta^2 = .09$). There was not a significant difference in affect between participants with and without disabilities for the Learning Disability scenario. No other comparisons for this interaction were significant.

The last interaction was between MAS Scenario, Participant Disability, and Age. There were no significant differences in affect for younger participants based on scenario or Participant Disability. For older participants, those with disabilities reported significantly more positive affect in response to both the Learning Disability ($M = 47.00$, $SE = 5.31$) and Physical Disability ($M = 46.54$, $SE = 3.84$) scenarios than to the No Disability scenario ($M = 62.44$, $SE = 5.31$), ($F(2, 47) = 3.28$, $p < .05$, $\eta^2 = .12$). There was also a marginally significant comparison between older participants with and without disabilities that responded to the No Disability scenario ($F(1, 47) = 3.27$, $p < .10$, $\eta^2 = .07$). Those without disabilities were trending towards reporting more positive affect ($M =$

50.00, $SE = 4.38$) than those with disabilities ($M = 62.44$, $SE = 5.31$). This effect was not observed for any other scenario. There were no other significant comparisons for this interaction. No other analysis in the ANOVA on the MAS Affect subscale approached significance ($p > .11$).

MAS Cognitions Subscale

There was a marginally significant main effect of Participant Disability on MAS Cognition subscale scores ($F(1, 89) = 3.53$, $p < .10$, $\eta^2 = .07$). Participants without disabilities were trending towards reporting more positive cognitions ($M = 24.23$, $SE = 0.97$) than participants with disabilities ($M = 25.76$, $SE = 0.97$), regardless of the scenario they were responding to.

In pairwise comparisons between MAS Scenario and Age, there was a marginal difference in cognitions between younger and older participants responding to the No Disability scenario ($F(1, 47) = 3.62$, $p < .10$, $\eta^2 = .07$). Younger participants were trending towards reporting more positive cognitions ($M = 23.33$, $SE = 1.79$) in response to the No Disability scenario than older participants ($M = 28.19$, $SE = 1.82$). This effect was not observed for any other scenario, and no other comparisons were significant for this interaction.

In the interaction between Participant Disability and Age, younger participants with disabilities were trending towards reporting more positive cognitions ($M = 24.07$, $SE = 1.31$) than older participants ($M = 27.62$, $SE = 1.44$), ($F(1, 47) = 3.32$, $p < .10$, $\eta^2 = .07$). This comparison was not significant for people without disabilities, and there were no other significant comparisons for this interaction.

With the inclusion of MAS Scenario in the interaction between Participant Disability and Age, the only significant comparison was between younger and older participants with disabilities that responded to the No Disability scenario. Those that were younger reported more positive cognitions ($M = 22.50$, $SE = 2.91$) in response to the No Disability scenario than those that were older ($M = 31.00$, $SE = 2.81$), ($F(1, 47) = 4.41$, $p < .05$, $\eta^2 = .09$). There was not a similar significant comparison for participants without disabilities, or for any other scenario.

In the interaction between MAS Scenario, Participant Disability, and Contact, comparisons indicated differences between participants with high and low contact for both those with and without disabilities, depending on the scenario (Figures 13 & 14). For participants with disabilities that responded to the Learning Disability scenario, those with high contact were trending towards reporting more positive cognitions than those with low contact ($F(1, 47) = 3.27$, $p < .10$, $\eta^2 = .07$). There were no significant comparisons between cognitions on any other scenario for participants with disabilities. For participants without disabilities responding to the Physical Disability scenario, those with high contact reported significantly more positive cognitions than those with low contact ($F(1, 47) = 4.91$, $p < .05$, $\eta^2 = .10$). This effect was not observed for any other scenario, and there were no other significant comparisons for this interaction.

In the interaction between MAS Scenario, Contact, and Age, there was one significant comparison between younger and older participants with disabilities with low contact who responded to the No Disability scenario ($F(1, 47) = 4.49$, $p < .05$, $\eta^2 = .09$). Younger participants reported significantly more positive cognitions ($M = 21.21$, $SE =$

2.25) than older participants ($M = 28.06$, $SE = 2.32$). This effect was only observed for participants with disabilities with low contact. There were no other significant comparisons for this interaction. No other analysis in the ANOVA on the MAS Cognitions subscale approached significance ($p > .10$).

MAS Behaviors Subscale

There were no significant main effects of independent variables on MAS Behaviors subscale scores.

In pairwise comparisons for the interaction between MAS Scenario and Participant Disability, there was a marginally significant comparison between participants with disabilities that responded to the No Disability scenario or the Physical Disability Scenario ($F(2, 47) = 2.92$, $p < .10$, $\eta^2 = .11$). Those that responded to the Physical Disability scenario were trending towards reporting more positive behaviors ($M = 13.63$, $SE = 1.22$) than those that responded to the No Disability scenario ($M = 18.56$, $SE = 1.69$). There was not a similar effect observed for those responding to the Learning Disability scenario, or for participants without disabilities.

For the interaction between MAS Scenario and Contact, participants with high contact reported marginally more positive behaviors when responding to either the Learning Disability ($M = 15.24$, $SE = 1.40$) or Physical Disability ($M = 14.00$, $SE = 1.37$) scenario than the No Disability scenario ($M = 19.22$, $SE = 1.69$), ($F(2, 47) = 2.99$, $p < .10$, $\eta^2 = .11$). There was not a similar effect observed for participants with low contact, and no other comparisons were significant for this interaction.

In pairwise comparisons for the interaction between MAS Scenario and Age, older participants reported marginally more positive behaviors when responding to either the Learning Disability ($M = 15.46, SE = 1.49$) or Physical Disability ($M = 15.62, SE = 1.43$) scenario than the No Disability scenario ($M = 19.89, SE = 1.52$), ($F(2, 47) = 2.80, p < .10, \eta^2 = .11$). The comparisons for younger participants were not significant for this interaction.

For the interaction between MAS Scenario, Participant Disability, and Contact, cognitions reported on the Physical Disability scenario differed for participants with and without disabilities and for those with high and low contact (Figures 15 & 16). In a comparison between participants with and without disabilities with low contact, those with disabilities reported significantly more positive behaviors in response to the Physical Disability Scenario than those without disabilities ($F(1, 47) = 5.85, p < .05, \eta^2 = .11$). There was not a significant comparison for participants with high contact. However, there was also a difference in behaviors in response to the Physical Disability scenario for participants without disabilities between those with high and low contact. Those with high contact were trending toward reporting more positive behaviors than those with low contact ($F(1, 47) = 3.52, p < .10, \eta^2 = .07$). The only other significant comparison for this interaction was between participants with disabilities with high contact responding to different scenarios. Those that responded to either the Learning Disability or Physical Disability scenario reported more positive behaviors than those who responded to the No Disability scenario ($F(2, 47) = 4.21, p < .05, \eta^2 = .15$). There was not a similar effect observed for participants with low contact, or for those without disabilities.

There were also significant comparisons between MAS Scenario and Participant Disability with the inclusion of Gender. However, there were only significant differences in behaviors for females. Females with disabilities reported significantly more positive behaviors in response to the Physical Disability ($M = 12.63, SE = 1.41$) than to the No Disability scenario ($M = 19.33, SE = 1.94$), ($F(2, 47) = 4.00, p < .05, \eta^2 = .15$). There was not a significant comparison for participants without disabilities, or involving other scenarios. There was, however, a significant comparison between female participants with and without disabilities that responded to the Physical Disability scenario ($F(1, 47) = 5.65, p < .05, \eta^2 = .11$). Those with disabilities reported more positive behaviors ($M = 12.63, SE = 1.41$) than those without disabilities ($M = 17.92, SE = 1.72$). This effect was not observed for any other scenario.

MAS Scenario and Participant Disability also produced significant pairwise comparisons when combined with Age. Older participants with disabilities reported significantly more positive behaviors when responding to either the Learning Disability ($M = 15.67, SE = 2.35$) or Physical Disability ($M = 13.96, SE = 1.70$) scenario than the No Disability scenario ($M = 21.78, SE = 2.35$), ($F(2, 47) = 3.70, p < .05, \eta^2 = .14$). There was not a similar effect observed for younger participants or for those without disabilities. Between younger and older participants, there was a marginally significant comparison for those with disabilities that responded to the No Disability scenario ($F(1, 47) = 3.63, p < .10, \eta^2 = .07$). Younger participants were trending towards reporting more positive behaviors ($M = 15.33, SE = 2.43$) than older participants ($M = 21.78, SE = 2.35$).

This comparison was not significant for participants without disabilities or for those responding to other scenarios.

In the interaction between MAS Scenario, Contact, and Gender, female participants with high contact that responded to the Physical Disability scenario reported significantly more positive behaviors ($M = 13.17$, $SE = 1.78$) than those that responded to the No Disability scenario ($M = 20.08$, $SE = 1.94$), ($F(1, 47) = 3.50$, $p < .05$, $\eta^2 = .13$). This comparison was not significant for males, for participants with low contact, or for any other scenarios. The only other significant comparison for this interaction was between male participants with high and low contact that responded to the Learning Disability scenario ($F(1, 47) = 4.75$, $p < .05$, $\eta^2 = .09$). Those with high contact reported more positive behaviors ($M = 12.83$, $SE = 2.08$) than those with low contact ($M = 19.38$, $SE = 2.16$). This comparison was not significant for female participants or between any other scenarios.

There was only a marginal comparison observed in the interaction between MAS Scenario, Contact, and Age. For participants with low contact that responded to the No Disability scenario, those that were younger were trending towards reporting more positive behaviors ($M = 14.92$, $SE = 1.89$) than those that were older ($M = 20.33$, $SE = 1.94$), ($F(1, 47) = 4.02$, $p < .10$, $\eta^2 = .08$). This comparison was not significant for those with high contact or those who responded to any other scenario.

There was a significant interaction between MAS Scenario, Gender, and Age ($F(1, 89) = 3.30$, $p < .05$, $\eta^2 = .12$) (Figures 17 & 18). Older male participants reported marginally more positive behaviors when responding to either the Learning Disability or

Physical Disability scenario than the No Disability scenario ($F(2, 47) = 3.06, p < .10, \eta^2 = .12$). There was not a similar effect observed for younger participants or females. There was a significant comparison between younger and older male participants responding to the No Disability scenario ($F(1, 47) = 5.12, p < .05, \eta^2 = .10$). Younger participants reported more positive behaviors than older participants. There was also a marginally significant comparison between younger and older male participants that responded to the Learning Disability scenario ($F(1, 47) = 3.36, p < .10, \eta^2 = .07$). Younger participants were trending towards reporting more positive behaviors than older participants. There were no significant comparisons for females in this interaction.

No other pairwise comparisons for the MAS Behaviors subscale were significant, and no other analysis in the ANOVA on the MAS Behaviors subscale approached significance ($p > .10$).

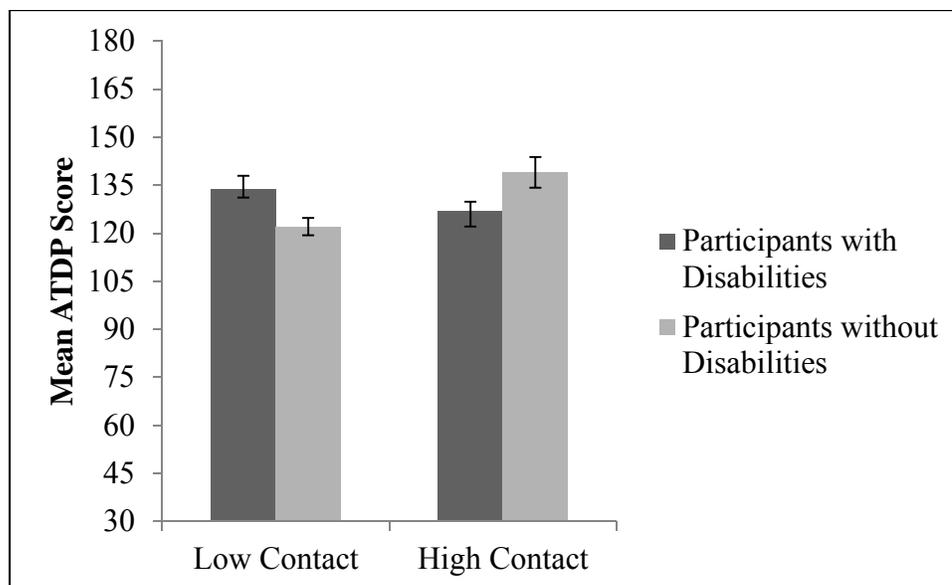
Hierarchical Multiple Regression

Communal Attachments and Personal Identity Scale

Multiple regression analysis was used to test if Communal Disability Identity and Personal Disability Identity scores predicted the variance in participants' ATDP scores. The whole sample of participants with disabilities was used for these analyses ($n = 79$). Age and Gender were included due to theoretical involvement of these variables in predicting attitudes. Two steps of regression were performed, both using forced entry. Age and Gender were entered in the first step of the regression, with Communal Disability Identity and Personal Disability Identity being added together in the second step. In the first step, Age explained a significant amount of the variance in ATDP scores,

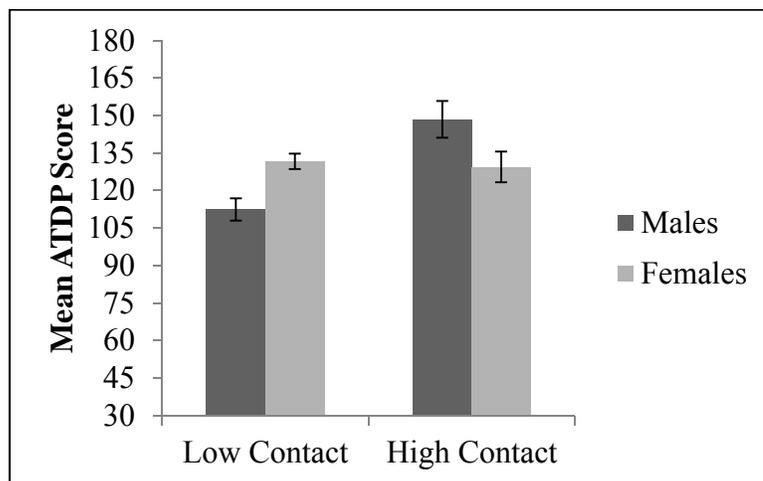
but Gender had a non-significant effect (see Table 1). In the second step, Communal Disability Identity was the only variable that explained a significant amount of the variance. The regression model with Age, Gender, Communal Disability Identity, and Personal Disability Identity explained 35.1% of the variance in ATDP scores.

Figure 2.



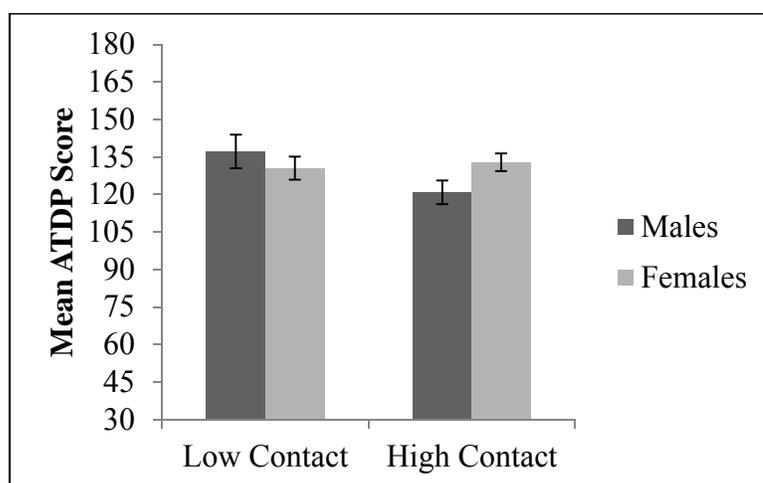
Interaction effects of Participant Disability and Contact on ATDP scores. Higher scores indicate more positive attitudes toward people with disabilities.

Figure 3.



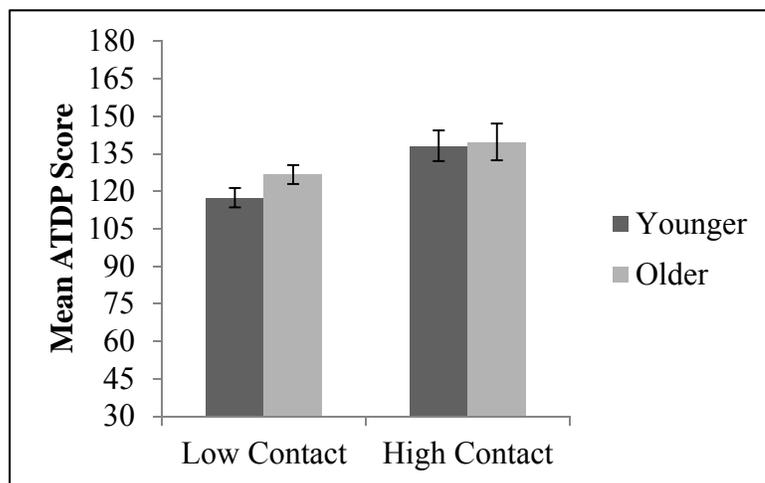
Interaction effects of Participant Disability, Contact, and Gender on ATDP scores, for participants without disabilities. Higher scores indicate more positive attitudes toward people with disabilities.

Figure 4.



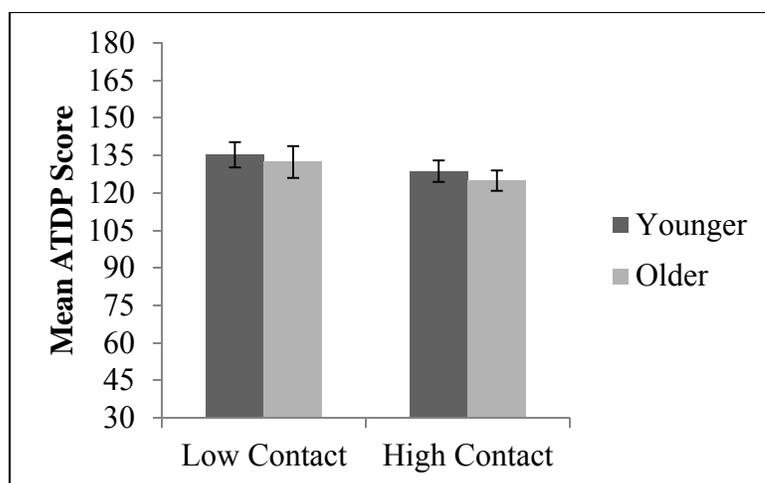
Interaction effects of Participant Disability, Contact, and Gender on ATDP scores, for participants with disabilities. Higher scores indicate more positive attitudes toward people with disabilities.

Figure 5.



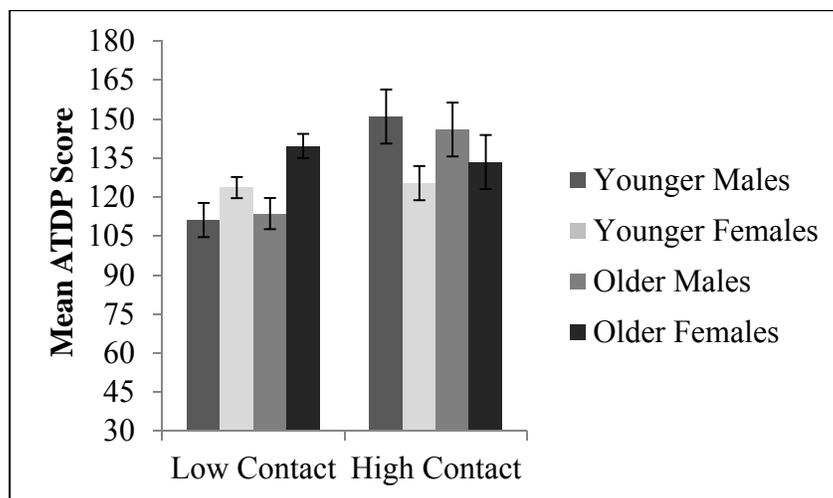
Interaction effects of Participant Disability, Contact, and Age on ATDP scores, for participants without disabilities. Higher scores indicate more positive attitudes toward people without disabilities.

Figure 6.



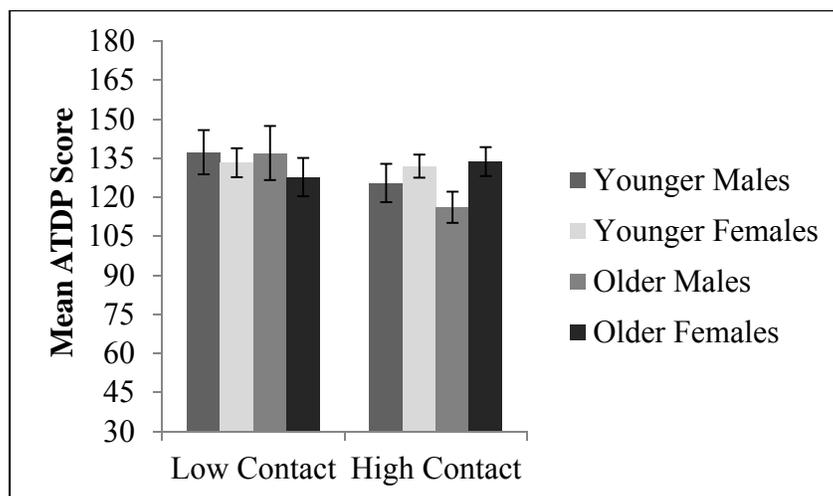
Interaction effects of Participant Disability, Contact, and Age on ATDP scores, for participants with disabilities. Higher scores indicate more positive attitudes toward people with disabilities.

Figure 7.



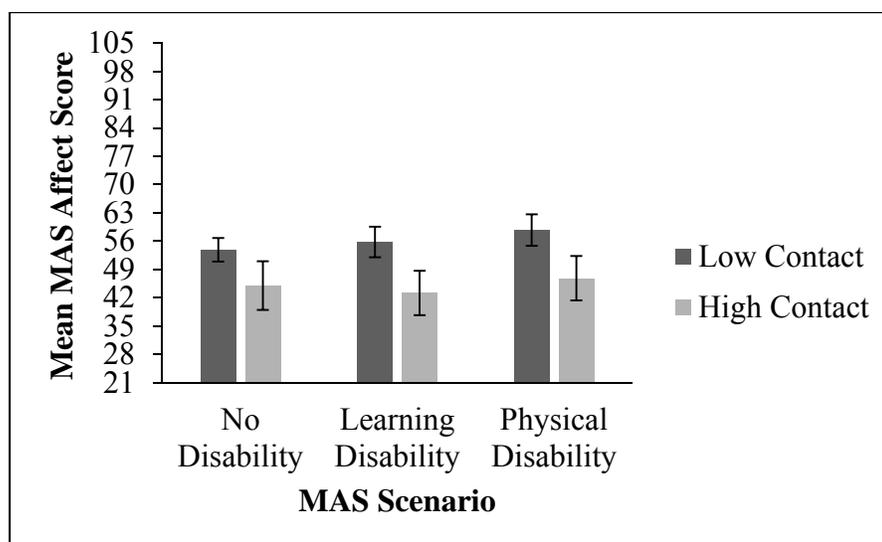
Interaction effects of Participant Disability, Contact, Age, and Gender on ATDP scores, for participants without disabilities. Higher scores indicate more positive attitudes toward people without disabilities.

Figure 8.



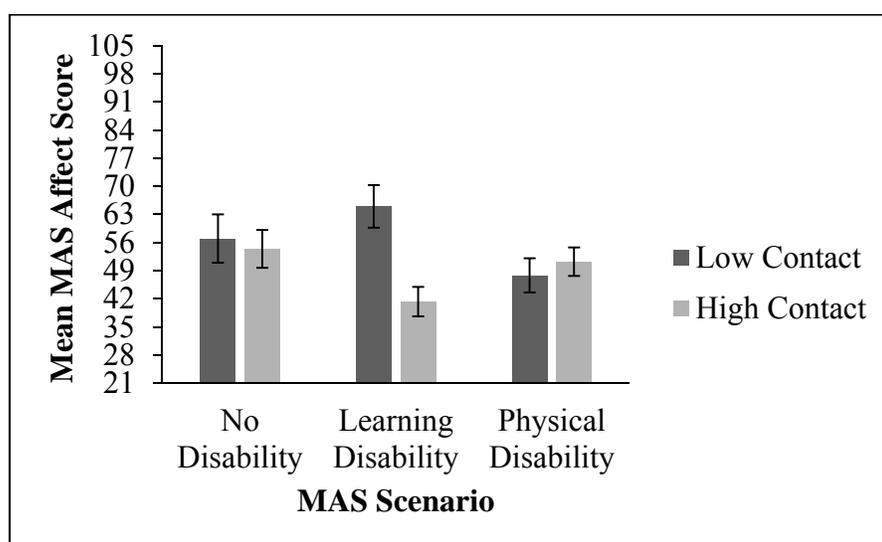
Interaction effects of Participant Disability, Contact, Age, and Gender on ATDP scores, for participants with disabilities. Higher scores indicate more positive attitudes toward people without disabilities.

Figure 9.



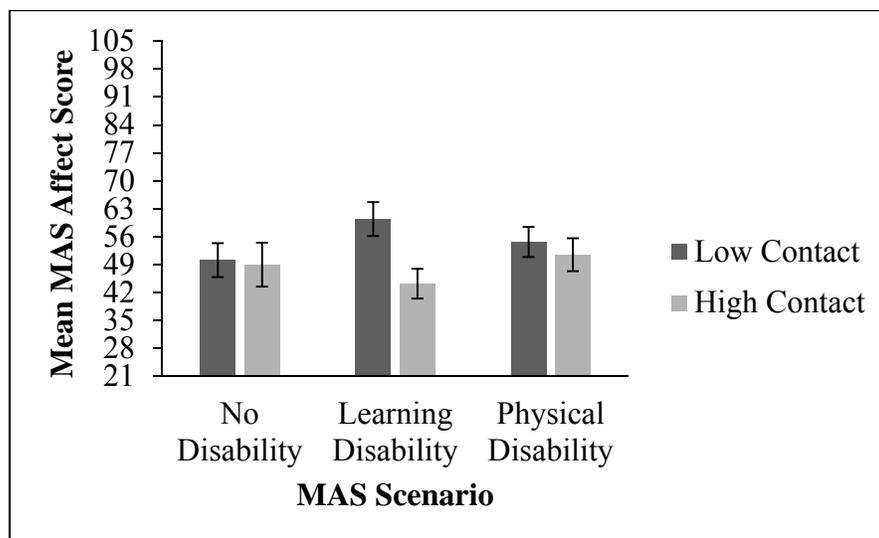
Interaction effects of MAS Scenario, Participant Disability, and Contact on MAS Affect scores, for participants without disabilities. Higher scores indicate less positive affect.

Figure 10.



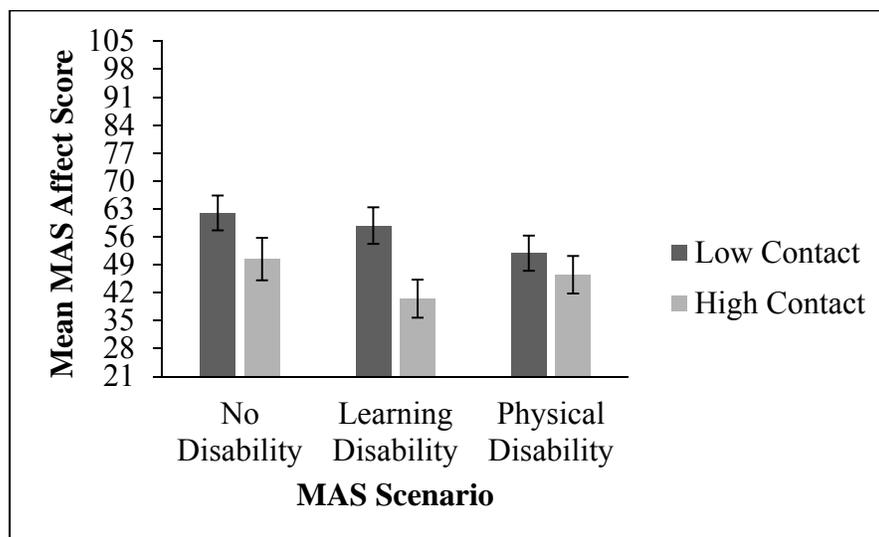
Interaction effects of MAS Scenario, Participant Disability, and Contact on MAS Affect scores, for participants with disabilities. Higher scores indicate less positive affect.

Figure 11.



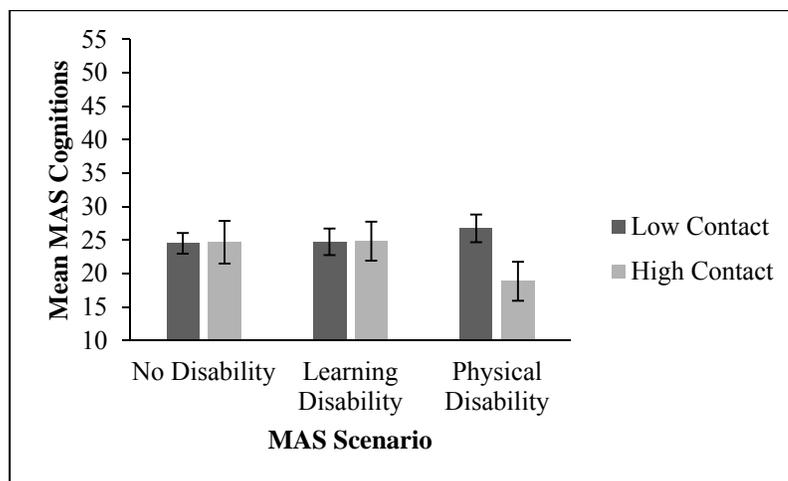
Interaction effects of MAS Scenario, Contact, and Age on MAS Affect scores, for younger participants. Higher scores indicate less positive affect.

Figure 12.



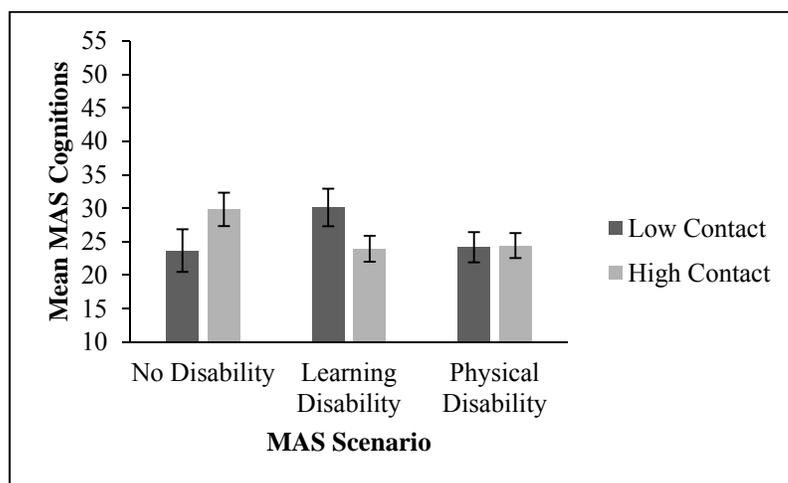
Interaction effects of MAS Scenario, Contact, and Age on MAS Affect scores, for older participants. Higher scores indicate less positive affect.

Figure 13.



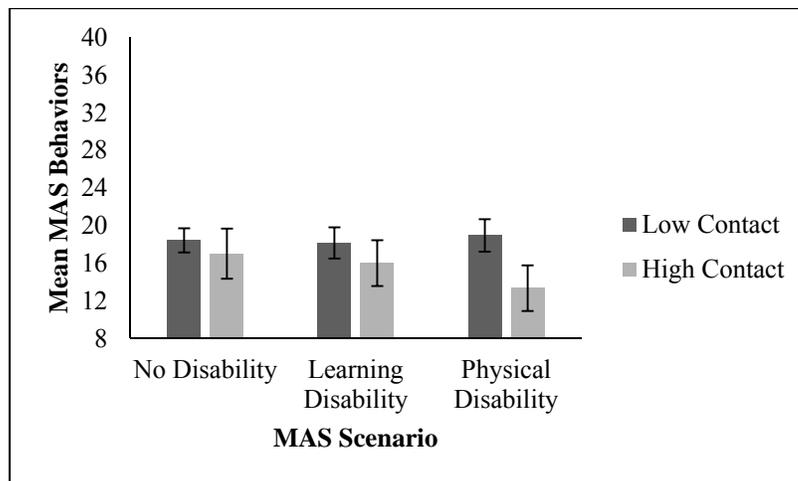
Interaction effects of MAS Scenario, Participant Disability, and Contact on MAS Cognitions scores, for participants without disabilities. Higher scores indicate less positive cognitions.

Figure 14.



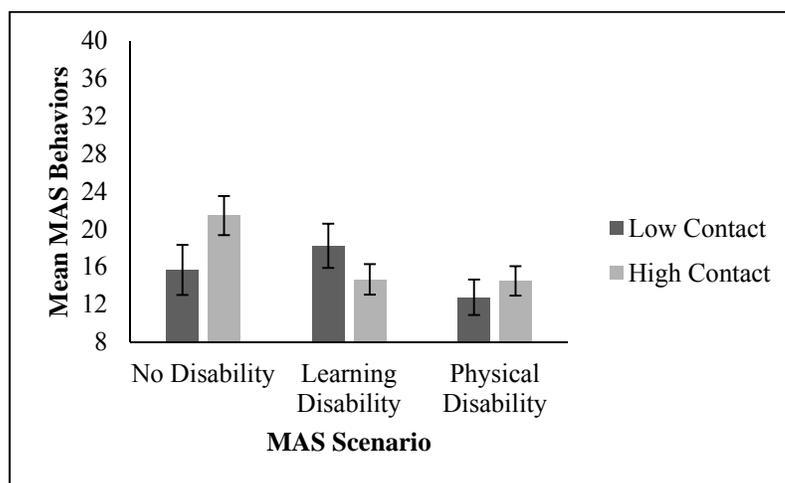
Interaction effects of MAS Scenario, Participant Disability, and Contact on MAS Cognitions scores, for participants with disabilities. Higher scores indicate less positive cognitions.

Figure 15.



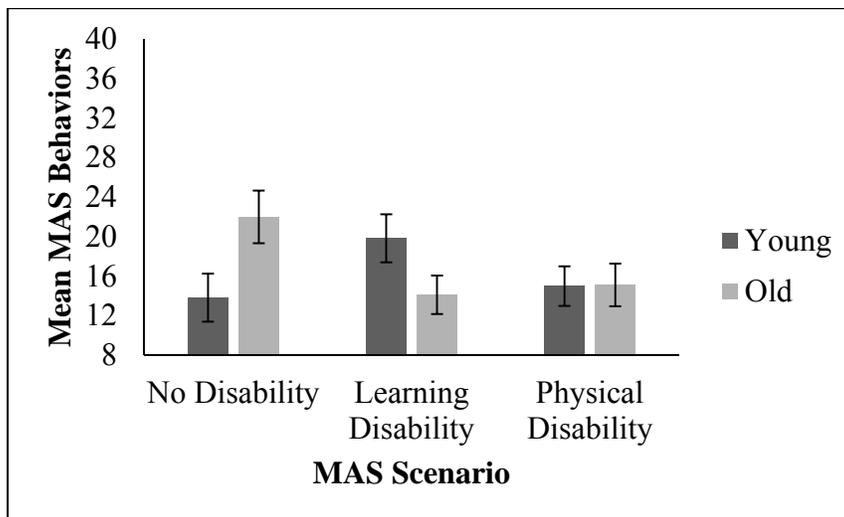
Interaction effects of MAS Scenario, Participant Disability, and Contact on MAS Behaviors scores, for participants without disabilities. Higher scores indicate less positive behaviors.

Figure 16.



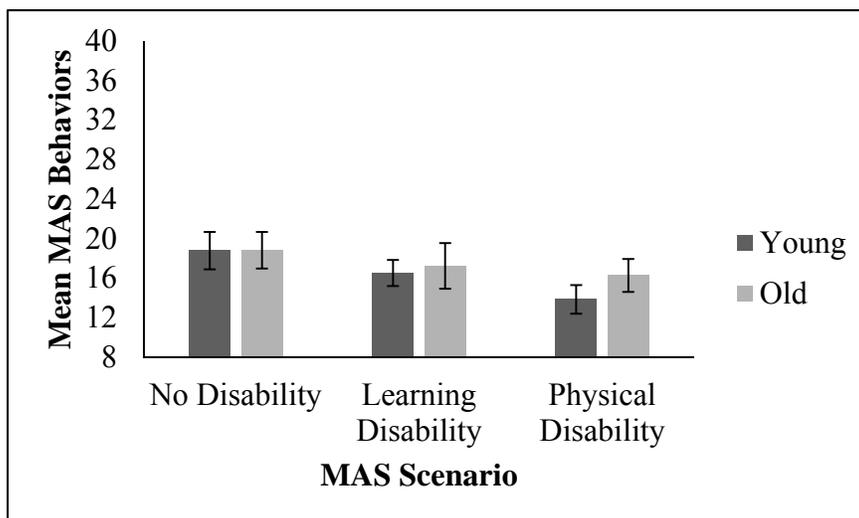
Interaction effects of MAS Scenario, Participant Disability, and Contact on MAS Behaviors scores, for participants with disabilities. Higher scores indicate less positive behaviors.

Figure 17.



Interaction effects of MAS Scenario, Age, and Gender on MAS Behaviors scores, for male participants. Higher scores indicate less positive behaviors.

Figure 18.



Interaction effects of MAS Scenario, Age, and Gender on MAS Behaviors scores, for female participants. Higher scores indicate less positive behaviors.

Table 1.

Step	Variable	<i>b</i>	<i>SE B</i>	β
<hr/>				
1				
	Age	0.34 (.01, .68)	0.17	.23*
	Gender	6.81 (-1.32, 14.93)	4.07	.19
<hr/>				
2				
	Age	0.13 (-0.18, 0.43)	0.15	.08
	Gender	6.81 (-0.17, 13.78)	3.50	.19
	Communal Disability Identity	1.70 (0.89, 2.51)	0.40	.48***
	Personal Disability Identity	0.22 (-0.19, 0.62)	.20	.12
<hr/>				

*Linear model of predictors of ATDP scores, with 95% confidence intervals reported in parentheses. * $p < .05$; *** $p < .001$; $R^2 = .06$ for Step 1; $\Delta R^2 = .27$ for Step 2 ($ps < .001$)*

CHAPTER 7 – Study 1 Discussion

In-Group Preference

The first hypothesis for study 1 was that participants with disabilities would report more positive attitudes towards others with disabilities, and participants without disabilities would report more positive attitudes towards others who also had no disabilities.

On a group level, participants with disabilities reported more positive attitudes than those without disabilities, but only among those with low contact. For those with high contact, participants without disabilities reported the most positive attitudes. A similar interaction between contact and disability was observed on an interpersonal level as well. In-group preferences for people without disabilities tended to occur only among those with low contact. The opposite was true for people with disabilities, with those with low contact reporting more positive attitudes in response to an interaction with someone with no disability, than an interaction with someone with a disability. Those with high contact, however, did show in-group preference, reporting more positive attitudes towards interacting with someone with a disability than someone with no disability. A possible explanation of this finding might be that people with disabilities that do not interact often with others with disabilities may feel less connected to the disability community, and therefore may relate more to people without disabilities.

Age was also involved in in-group preferences. Younger participants both with and without disabilities with low contact tended to report more positive attitudes regarding the interaction with someone without a disability. Older participants, in

contrast, reported more positive attitudes towards interactions involving a partner with a disability, even for those with low contact.

The behaviors scale was the only measure on which people with disabilities consistently demonstrated in-group preference. Participants with disabilities reported more positive behaviors in interactions with others with disabilities than with someone without a disability. This was especially consistent among those with high contact, but was also observed for those with low contact in response to an interaction with someone with a physical disability.

These findings reflect mixed support for the in-group preference hypothesis. Those that are younger and interact with people with disabilities less frequently tend to respond more positively to interacting with someone with no disability, with the only exception being people with disabilities with low contact, who responded more positively to an interaction with someone with a physical disability on the behaviors scale. Older participants and those with high contact, both with and without disabilities, tended to report more positive attitudes. Overall, these findings highlight the substantial influence of contact on attitudes about disability.

Contact

The hypothesis that participants with more previous contact with people with disabilities would report more positive attitudes toward people with disabilities compared to participants with less contact was largely supported in study 1. This hypothesis had two components, attitudes toward people with disabilities on a group level, and on an interpersonal level.

On a group level, contact was significantly related to more positive attitudes toward people with disabilities as a group for those without disabilities. Having more previous contact was related to more positive attitudes toward people with disabilities as a group, especially for males. Male participants without disabilities with high contact reported the most positive attitudes, and those with low contact reported the least positive attitudes, with female participants reporting attitudes between the two male groups regardless of contact. This is an interesting finding, because previous studies have repeatedly found that females report the most positive attitudes toward people with disabilities (Chesler, 1965; Freed, 1964; Siller, 1963, 1964; Yuker, Block, & Youngg, 1966, as cited in Livneh, 2012). The finding that males with high contact report more positive attitudes than females with high or low contact stresses the important role that contact plays in improving attitudes toward disability for males.

Contact played an interesting role in differences between the attitudes reported by participants with and without disabilities. Among those with low contact, participants with disabilities reported more positive attitudes than those without disabilities. However, among those with high contact, participants without disabilities had more positive attitudes. It is interesting to note that those without disabilities with high contact reported more positive attitudes than even participants with disabilities with high contact. This finding presents notable support for intergroup contact theory.

Older participants tended to report more positive attitudes than younger participants, especially for those without disabilities. With gender also taken into account,

older females reported more positive attitudes than older males, for both participants with and without disabilities. This falls into line with previous research on the effect of gender and age on attitudes toward people with disabilities, with females and older adults tending to report more positive attitudes than males and younger adults (Chesler, 1965; Freed, 1964; Siller, 1963, 1964; Yuker, Block, & Youngg, 1966; Ryan, 1981; Siller & Chapman, 1964; Siller et al., 1967, as cited in Livneh, 2012).

On an interpersonal level, attitudes were measured within three domains: affect, cognitions, and behavior. The hypothesis that participants with more previous contact would report more positive attitudes toward an interaction with a person with a disability was supported in the domain of affect. Participants who had more previous contact reported more positive affect towards interacting with someone with a learning disability than someone with no disability, and were trending toward reporting more positive affect towards interacting with someone with a physical disability as well.

Overall, participants reported more positive affect regarding an interaction with a student if they had more previous contact with people with disabilities, regardless of whether the interaction partner had a disability. This finding suggests that more positive affect regarding interactions in general could be a possible explanation of some people having had more contact with people with disabilities. The greater frequency with which one interacts with people in general, the more likely one would be to interact with people with disabilities.

Contact had less of an effect on the cognitions reported by participants, although participants without disabilities with high contact did report more positive cognitions

regarding an interaction with someone with a physical disability than those with low contact. A similar effect was also observed for participants with disabilities with high contact, who reported marginally more positive attitudes regarding a partner with a learning disability than those with low contact.

For the behavioral aspect of attitudes, participants with disabilities tended to report more positive attitudes in response to interactions involving a partner with a disability than with someone with no disability. As was noted in the section on in-group preferences, there was a tendency for people with disabilities, especially those with high contact, to report more positive behaviors towards in-group interactions. Contact appeared to have less of an influence on the behaviors reported by participants without disabilities than it did on the affect of those without disabilities. This might suggest that, although those that interact with people with disabilities more often might feel more positively about those interactions, they may still experience interaction strain which could lead them to act less positively. It is also important to note that the hypothetical interaction used in this study was with a stranger. Individuals with high contact may be frequently interacting with close friends or family members with disabilities, but may not have broad experience with disability. Considering frequency of contact alone does not allow for further exploration of the elements and types of contact that may also influence attitudes.

Hierarchy of Stigma

The hypothesis that all participants would report more positive attitudes regarding a social interaction with a student with a physical disability than with a cognitive

disability was not supported. There were not significant differences in attitudes towards people with learning disabilities and physical disabilities. Rather, attitudes towards people with physical disabilities remained relatively stable, while attitudes toward people with learning disabilities were more variable. It is interesting to note that reported affect towards people with learning disabilities depended largely on contact. Participants with low contact reported the most negative affect toward an interaction with someone with a learning disability, while participants with high contact who were also responding to the learning disability condition reported the most positive affect. This effect was not noted to the same extent for cognitions or behaviors. Possible explanations for the lack of substantial differences in attitudes reported towards people with learning and physical disabilities include that both partners disclosed their disability in the interaction, which may reduce the ambiguity sometimes associated with invisible conditions such as learning disabilities (Bailey, 1991; Smart, 2009).

Disability Identity

The hypothesis that, for participants with disabilities, a greater sense of attachment to the disability community would be related to more positive attitudes toward people with disabilities as a group was supported. Personal Disability identity, however, was not strongly related to attitudes toward people with disabilities as group. Communal Disability Identity, as the name suggests, relates to how individuals feel about their connection to the greater community of people with disabilities. Personal Disability Identity, on the other hand, is related to personal self-concept and affirmation of one's own disability. These findings suggest that people who have accepted their own disability

do not necessarily feel like a part of the disability community. This is a novel finding that stresses the importance of studying the complexity of disability factors and how they relate both to personal and communal identity development.

CHAPTER 8 – Study 2 Method

Participants

Two samples were included in Study 2, both consisting of students enrolled in classes at Oregon State University (OSU). Participants were required to be 18 years or older and living in the U.S.

Psychology of Disability Students (Intervention Group)

The intervention group consisted of students enrolled in an upper-division course on Psychology of Disability ($n = 19$). Participants ranged in age from 20 to 26 years ($M = 21.95$ years, $SD = 1.58$). Fifteen participants were female (78.9%). The majority of participants reported that they were White/Caucasian (73.7%), (10.5% Asian, 5.3% Black/African American, and 5.3% Other). Five participants reported having a disability.

Upper-Level Psychology Course Students (Quasi-Control Group)

The control group consisted of students enrolled in an upper-division psychology course with limited disability-related course content, but similar in size and composition to the Psychology of Disability course ($n = 17$). Participants ranged in age from 20 to 28 years ($M = 22.29$ years, $SD = 2.17$). Nine of the participants were female (52.9%). The majority of participants reported that they were White/Caucasian (82.4%), (5.9% Asian, 5.9% Native Hawaiian/Pacific Islander). One participant reported having a disability.

Materials

Of the scales used in Study 1, those that were also used in Study 2 were: the Attitudes Toward Disabled Persons Scale (ATDP), the contact scale, and the demographic questions.

Disability Model Scales

The Disability Model Scales (see Appendix) were added to Study 2 with the purpose of exploring the role that one's disability model orientation may play in determining attitudes towards disability. This new scale in development consists of three subscales, and each is intended to measure one of the three major disability models – Moral, Medical, and Social. Items were derived from Olkin's theoretical framework (Olkin, 2002, p. 133). Items on all subscales were scored on a 6-point scale ranging from 1 (Disagree Strongly) to 6 (Agree Strongly). The Moral subscale is six items long (Time 1 $\alpha = .66$; Time 2: $\alpha = .76$), with scores ranging between 6 and 36 points, and asks participants the extent to which they agree with statements such as, "Disability is caused by immoral behavior or sins." The Medical subscale consists of five items (Time 1 $\alpha = .70$; Time 2: $\alpha = .79$), with possible scores between 5 and 30 points, and with statements such as, "A disability is a medical problem that resides in the individual." The Social subscale consists of six items (Time 1 $\alpha = .80$; Time 2: $\alpha = .91$), with possible scores between 6 and 36 points, and asks participants to respond to statements such as, "Our society fails to accommodate people with disabilities."

Procedure

The course for the Intervention group was selected due to its focus on the experience and social construction of disability. The course involved seminar-style discussion and interaction between the students and the instructor, who had a disability. A course taught with a similar discussion style and at a similar level was selected for the Quasi-Control group. This course was not specifically related to disability, but did

include a brief discussion of memory-related impairments that followed the traditional medical model paradigm.

This study was approved by the Oregon State University Institutional Review Board. A research assistant visited the control and experimental classes during the first week of the term to invite students to participate in the study. Students were invited to complete two surveys, a pre-test at the beginning of the term, and a post-test at the end of the term, 9 weeks later. Participation was optional, with an alternative assignment available for those who chose not to take part in the study. Students received extra credit points, whether they completed the study or the alternative assignment. Students interested in participating completed an informed consent document, which was used to assign identification numbers to match participants' pre- and post-test responses. All participants completed the ATDP scale, Disability Model Scale, demographic questions, and contact measure. After 9 weeks, participants were invited to complete the survey again as a post-test. Only participants that completed both the pre- and post-test were included in analyses. The attrition rate was less than 6% for both samples, with only two participants being excluded.

CHAPTER 9 – Study 2 Results

Mixed-design ANOVAs and a mediation analysis were utilized to examine the effects of Group, Time, Contact, and Disability Model, upon the ATDP scale. All pairwise comparisons were performed using simple effects analyses based on the linearly independent pairwise comparisons among the estimated marginal means. Prior to running analyses, ATDP scores were transformed to fix normality issues. Scores were reflected to correct for negative skew and then subjected to a log transformation. Following transformation, scores were re-reflected for interpretation. Reported means for the ATDP are log transformed.

Mixed-Design ANOVA

ATDP

A two-way mixed-design ANOVA was conducted with the ATDP as the dependent variable, and Time (time 1 vs. time 2) and Group (intervention vs. quasi-control) as independent variables to examine change in ATDP scores over time within subjects, with the change in scores being compared between subjects in the intervention and quasi-control groups.

There was not a significant within-subjects main effect of Time on ATDP scores ($p > .05$). In between-subjects analyses there was a marginal main effect of Group on mean ATDP score ($F(1, 34) = 3.31, p < .10, \eta^2 = .09$). There was a significant interaction between Time and Group, however ($F(1, 34) = 9.39, p < .01, \eta^2 = .22$) (Figure 19). In pairwise comparisons, there was not a significant difference in mean ATDP scores between Groups at Time 1, ($p > .05$). At Time 2, the mean ATDP score reported by

participants in the intervention group was significantly more positive than that reported by participants in the quasi-control group ($F(1, 34) = 9.51, p < .01, \eta^2 = .22$). There was not a significant difference in mean ATDP scores within the quasi-control group between Time 1 and Time 2 ($p > .05$). In the intervention group, mean ATDP scores were significantly higher at Time 2 than at Time 1 ($F(1, 34) = 11.54, p < .01, \eta^2 = .25$).

Disability Model Scales

One-way mixed ANOVAs were conducted with each of the Disability Model scales separately. In each ANOVA, the Disability Model scale (Moral Model, Medical Model, or Social Model) was the dependent variable, with Time (time 1 vs. time 2) and Group (intervention vs. quasi-control) as independent variables to examine change in Disability Model Scale scores over time within subjects, with the change in scores being compared between subjects in the intervention and quasi-control groups.

Moral Model Scale

There were no significant effects on Moral Model scale scores, between groups or over time (Quasi-Control Time 1: $M = 8.82, SE = .89$; Time 2: $M = 9.00, SE = 1.08$), (Intervention Time 1: $M = 10.21, SE = .85$; Time 2: $M = 11.32, SE = 1.02$), ($F(1, 34) < 2.70, p > .05, \eta^2 < .07$).

Medical Model Scale

There was a significant within-subjects main effect of Time on Medical Model scores ($F(1, 34) = 15.40, p < .001, \eta^2 = .31$) (Figure 20). The interaction between Time and Group was also significant ($F(1, 34) = 6.82, p < .05, \eta^2 = .17$). There was a significant between-subjects main effect of Group on Medical Model scores ($F(1, 34) =$

18.98, $p < .001$, $\eta^2 = .36$). In pairwise comparisons, participants in the quasi-control group reported significantly higher Medical Model scores than participants in the intervention group at Time 1 ($F(1, 34) = 6.21$, $p < .05$, $\eta^2 = .15$). The significance of the difference in Medical Model scores between Groups increased at Time 2 ($F(1, 34) = 31.03$, $p < .001$, $\eta^2 = .48$). There was not a significant difference in Medical Model scores in the quasi-control group between Time 1 and Time 2 ($p > .05$). In the intervention group, Medical Model scores were significantly lower at Time 2 than at Time 1 ($F(1, 34) = 22.61$, $p < .001$, $\eta^2 = .40$).

Social Model Scale

There was a significant within-subjects main effect of Time on Social Model scores ($F(1, 34) = 7.19$, $p < .05$, $\eta^2 = .18$) (Figure 21). There was also a significant interaction between Time and Group ($F(1, 34) = 9.90$, $p < .01$, $\eta^2 = .23$), and a significant between-subjects main effect of Group on Social Model scores ($F(1, 34) = 15.47$, $p < .001$, $\eta^2 = .31$). In pairwise comparisons, participants in the intervention group reported significantly higher Social Model scores than participants in the quasi-control group at Time 1 ($F(1, 34) = 5.64$, $p < .05$, $\eta^2 = .14$). At Time 2 the significance of this difference increased, with participants in the intervention group again reporting significantly higher Social Model scores than participants in the quasi-control group ($F(1, 34) = 23.81$, $p < .001$, $\eta^2 = .41$). Social Model scores were not significantly different between Time 1 and Time 2 in the quasi-control group ($p > .05$). In the intervention group, Social Model scores were significantly higher at Time 2 than at Time 1 ($F(1, 34) = 17.98$, $p < .001$, $\eta^2 = .35$).

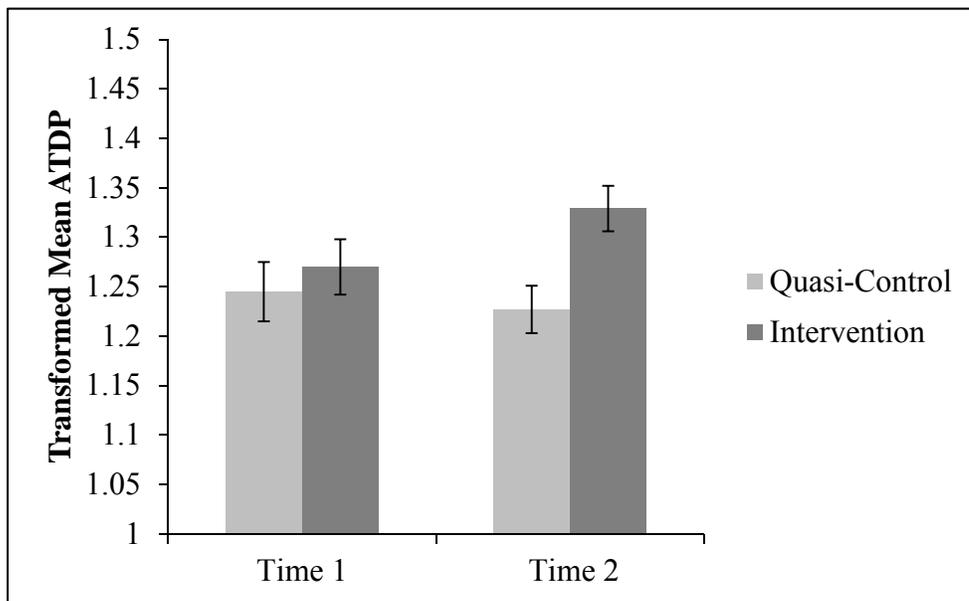
Mediation Analysis

A mediation analysis was conducted to examine whether the relationship between Group and ATDP scores could be explained by the relationship between Group and Disability Model. A mediation model was proposed, predicting that there would be a direct effect between the predictor (Group) and outcome (attitudes toward people with disabilities as a group, measured through ATDP score), with three potential mediators (Moral, Medical, and Social model of disability) (Figure 1). Due to the longitudinal design of the study, ATDP scores at Time 1 were entered as a control variable.

Group significantly predicted both Social and Medical Model orientation at Time 2. Group explained 46% of the variance in Social Model orientation ($b = .14, t = 4.81, p < .001$), and 48% of the variance in Medical Model orientation ($b = -.14, t = -5.44, p < .001$). Group did not significantly predict Moral Model orientation ($p > .05$).

When all potential mediators were included in the model with the predictor and outcome, Social Model was the only Disability Model orientation that significantly predicted attitudes ($b = .01, t = 2.60, p = .01$). Without disability models included, the total effect of Group explained 70% of the variance in attitudes ($b = .002, t = 4.14, p < .001$). The direct effect, which is the effect of Group on attitudes, controlling for the effect of the mediators, was reduced, but remained significant ($b = .001, t = 2.46, p = .02$). This model explained 79% of the variance in attitudes. There was a significant indirect effect of Group on attitudes through Social Model orientation ($b = .0008, 95\% \text{BCa CI } [0.0002, 0.0016]$). This indicates partial mediation.

Figure 19.



Interaction effects of time and group on ATDP scores, with log transformed means.

Higher scores indicate more positive attitudes toward people with disabilities.

Figure 20.

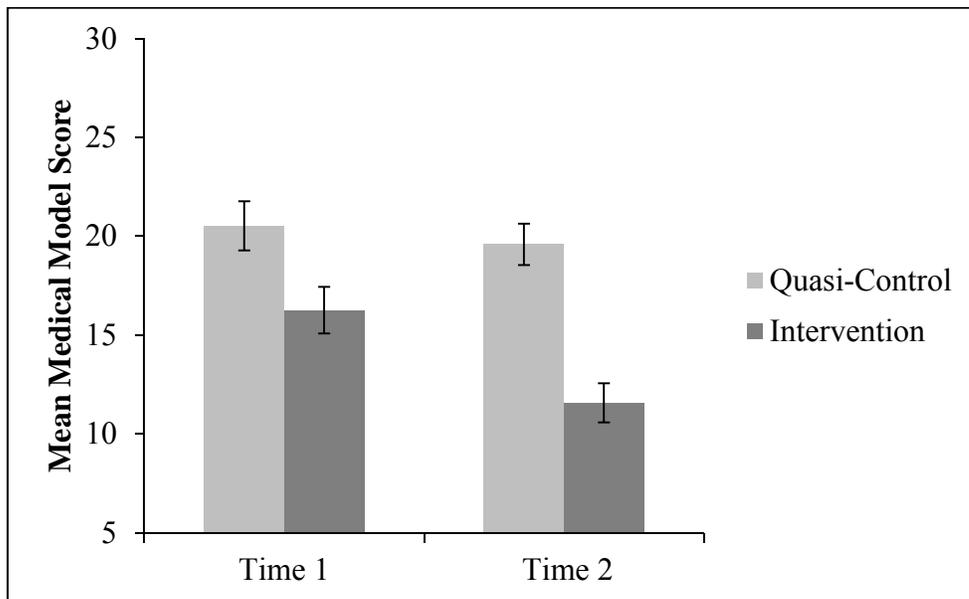
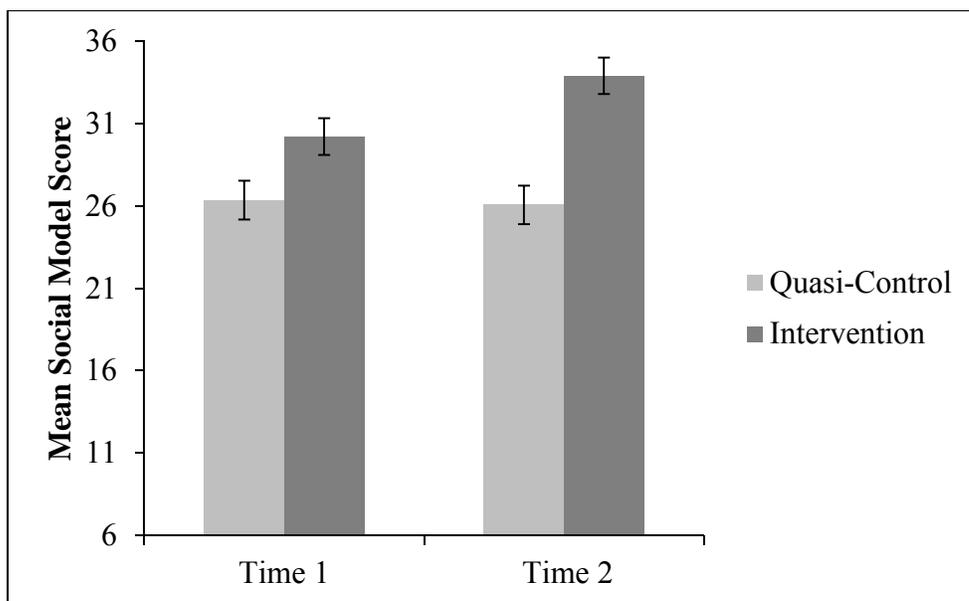
*Interaction effects of time and group on Medical Model scale scores.*

Figure 21.

*Interaction effects of time and group on Social Model scale scores.*

CHAPTER 10 – Study 2 Discussion

The hypothesis that participants in the intervention group would report more positive attitudes toward people with disabilities following intervention than the quasi-control group was supported. Further, this improvement of attitudes towards people with disabilities was significant in comparison to baseline. The second hypothesis for study two, that participants in the intervention group would report higher social model scores than participants in the quasi-control group following the intervention, was also supported. The increase in social model scores, like the improvement of attitudes, was also significant compared to baseline.

An additional finding of interest was that, in the intervention group, medical model scores were significantly reduced from time 1 to time 2. This is of note because it suggests that the intervention not only added to the participant's knowledge of the social model of disability, but also led individuals to view disability less as a medical impairment and more as a social construction. The combination of these changes in disability model orientation, along with the significant improvement in attitudes about disability, suggests that the intervention was successful.

The effectiveness of the intervention may be related to the extent to which it utilized the components of successful interventions suggested by the literature. The course was ten weeks in length, which likely allowed sufficient time and repetition of topics for students to incorporate the content into their disability schemas. Course content was taught from the social model, which challenged preconceptions of disability, but in a non-threatening and socially normative manner within the classroom culture. Critical

analysis of the existence of prejudice and discrimination toward people with disabilities also fell in line with the social model content of the course. Finally, the course incorporated both appropriate authority of the presenter and contact due to the instructor of the course personally experiencing a disability. In a study by Shannon, Schoen, and Tansey (2009), the only significant form of contact for improving attitudes toward people with disabilities in an educational setting was found to be having an instructor with a disability. This structured form of contact may, in part, explain the significant improvement of attitudes toward people with disabilities through the intervention. Despite this, it is unlikely to be related to the changes in disability model orientation. The significant increase in social and decrease in medical model orientations in comparison to participants in the quasi-control group suggests that the instructional component of the intervention was also influential in the changes in group scores from baseline.

The importance of the content of the course in improving attitudes was further supported by the results of the mediation analysis. We know that social model orientation increased while medical model orientation decreased in the intervention group. However, according to the mediation analysis, only social model orientation was related to attitudes toward people with disabilities. The intervention had a significant effect on improving attitudes, but this relationship was partially mediated by social model orientation. Although medical model orientation decreased significantly, this change was not significantly associated with attitudes. These findings provide support for balancing the presentation of disability topics from the traditional medical view with social model interpretations. There is evidence that this is currently not happening in undergraduate

psychology courses in the U.S., with course descriptions addressing disability using the medical model significantly more often than the social model (Rosa et al., in press).

The hypothesis that all three disability models would act as mediators of the relationship between course and attitudes was not supported. Moral model orientation was low for both groups, indicating that participants tended to view disability using the medical and social models. The relationship between the social model of disability and attitudes may be explained by the constructs measured by the ATDP scale. The ATDP is used to measure attitudes toward people with disabilities as a group, and asks the participant to evaluate stereotypical statements about people with disabilities (Yuker, Block, & Youngg, 1970). The attitudes measured by the ATDP are based on evaluations of people with disabilities, not about the nature of disability. The social model may help to improve attitudes towards people with disabilities through the stress that it places on viewing disability as a social construction and a natural part of human variation. The medical model is related to beliefs about how disability should be handled, and may therefore be less related to personal attitudes toward people with disabilities.

CHAPTER 11 – General Discussion and Conclusion

Limitations

Many of the limitations of the present research originate with the nature of the scales used, as they utilize direct measurement and are self-report. In direct measurement, participants are aware that their attitudes toward a particular target are being measured (Antonak & Livneh, 2000). Issues with this method are that the measurement itself might influence or create an attitude, and that the response may not represent the true attitude (Antonak & Livneh, 2000).

In addition to being a direct measure, the scales used are based on self-report by participants. Self-report inventories are an introspective technique that involve asking the test-taker to report on internal and unobservable constructs. It must be assumed that participants were both willing and able to report their attitudes toward people with disabilities. However, the use of subjective data is the most commonly used method to measure the complex attitudes of a large group of people, and these methods are socially acceptable and practical for the purpose of evaluating attitudes about disability.

Age was measured and included in analyses as an independent variable for the first study. However, ages fell within relatively narrow ranges after age and gender matching, ranging from 18 to 49 among participants without disabilities, and from 18 to 51 for those with disabilities. Past research has indicated that attitudes toward people with disabilities tend to be the most positive during adulthood, and less positive during early childhood, adolescence, and old age (Ryan, 1981; Siller, 1963; Siller & Chapman, 1964; Siller et al., 1967, as cited in Livneh, 2012). The sample used in study 1 included only

participants within the age range that tends to report the most positive attitudes. For this reason, age may not have been a relevant predictor for the present research.

The high correlations between the MAS subscales on the Physical Disability scenario and the ATDP scale suggest that the ATDP measures primarily attitudes towards people with physical disabilities. This scale uses the blanket term “people with disabilities.” The high correlation between the ATDP and attitudes towards physical disability also indicates that participants in this study relate the term “disability” with physical disabilities and not cognitive or possibly other types as well. This is important to note as the findings related to the ATDP may be more appropriately interpreted as “attitudes towards people with physical disabilities,” than “attitudes towards people with disabilities as a group.”

In study 2, the intervention may have had a particularly positive influence due to the instructor personally having a disability. As a variable that has been found to have a particularly strong effect on improving attitudes toward disability (Olson, 1993; Shannon, Schoen, and Tansey, 2009), this may influence how the results can be interpreted. Future research is recommended that examines the efficacy of the intervention when led by an instructor without a disability. Contact could possibly be built into the course in alternative ways, such as through the use of guest speakers with disabilities.

The present study did not utilize randomization to assign participants to the Intervention and Quasi-Control groups. Due to this limitation, it is possible that the participants that chose to take the Intervention course may have differed significantly from those that chose to take the Quasi-Control course in ways that were not measured in

the present study. Another concern is that, although attitudes were improved through the intervention, we cannot be certain that this change will last, or whether it will translate to behavioral change. Ideally, the intervention would lead to change in the behavior of the participants, and replace discriminatory and prejudice-based behavior with more socially appropriate alternatives. However, whether the study had such an impact, and whether it changed attitudes to an extent that is socially significant was not measured in the present study.

Other limitations include that the sample was composed only of college students in the state of Oregon. It is possible that baseline attitudes toward people with disabilities for this group may have differed from other age groups and regions. Further, the population of participants without disabilities in study 1 included a larger proportion of non-Caucasian participants than would be expected for the geographical area, with 18% reporting that they grew up outside of the U.S. Differences in reported attitudes between groups in study 1 could be due to cultural differences to an unknown extent. For these reasons, the generalizability of this study's results may be limited, although it provides a solid foundation for future research among different populations.

Discussion of Findings

Major findings from the first study include the strength of contact in influencing attitudes about disability on both a group and interpersonal level, especially for people without disabilities; and the important role played by communal disability identity in the attitudes of people with disabilities. Contact has been examined extensively by previous studies, both between people with and without disabilities and in general intergroup

interactions (Kleck, 1969; Allport, 1954; Pettigrew & Tropp, 2006; Altman, 1981). The present study added to the literature by investigating the differential effects of contact upon both group and interpersonal attitudes about disability. The consistency of contact in predicting more positive attitudes in this study provides support for increasing opportunities for people with and without disabilities to interact on a daily basis. This is most likely to occur in work and education settings. Although legislation has increased the accessibility of education and employment for people with disabilities in recent years, there remains a need to facilitate positive intergroup interactions by reducing attitudinal barriers. The efficacy of an educational intervention to address these remaining issues was examined in study 2.

The second major finding of study 1 was related to the role that disability identity plays in the attitudes of people with disabilities. Personal disability identity involves the affirmation of disability as an important part of oneself, whereas communal disability identity relates to feelings of connectedness to others with disabilities. It was predicted that both components of disability identity would be related to attitudes toward people with disabilities as a group. However, communal disability identity was most related to these attitudes. This is likely due to the importance of connection in communal disability identity, and the likelihood that those with high communal attachment also feel more positively about others in their community. The lack of a significant relationship between personal disability identity and attitudes towards others with disabilities suggests that personal acceptance of one's own disability is not necessarily linked to feelings about other types of disabilities or other people that also experience disability. These findings

stress the importance of community connections for improving attitudes about disability. Disability is a unique minority identity due to the complexity and diversity of people with disabilities. It is possible that those with more common disabilities may find it easier to connect with others that have similar experiences, as is evident in the culture and pride of the Deaf community (Fischer & McWhirter, 2001). However, connections may also be made through social media and the internet. Research on this new component of disability community is limited, but has examined the importance of social media in the Autistic community (Davidson, 2008).

The findings of study 2 provided support for the efficacy of education about disability presented from the social model in improving attitudes toward people with disabilities. As was addressed in the study 2 discussion, few undergraduate psychology courses include social model considerations in their discussions of disability (Rosa et al., in press). Although the curriculum of the intervention course in study 2 focused primarily on disability, disability is applicable to a broad range of other topics within psychology as well as other disciplines. The creation of more courses that address disability issues should be a goal of institutions of higher education, but the addition of balanced discussion of disability may also be effective in improving attitudes. Future research should examine the efficacy of including disability in discussions of diversity, taught from the social model, for the improvement of attitudes about disability.

Conclusion

Negative attitudes about disability remain a pervasive issue in our society. As people with disabilities make up almost 20 percent of the population in the U.S. (Brault,

2012), a large minority of our citizens face systematic barriers on the basis of widespread negative stereotypes. One of the most researched methods for improving between-group attitudes is contact. The present research provided additional support for this method, as well as for a number of other processes. Disability identity has been demonstrated as an important factor in adaptation to disability (Bogart, 2015; Hahn & Belt, 2004). The present study examined the role that disability identity may play in attitudes towards others with disabilities. The finding that communal disability identity is related to attitudes towards people with disabilities as a group has implications for how disability identity is studied, and also highlights the important role that community support may play for people that experience disability.

The present study also provided support for the inclusion of disability topics in coursework, and for the conceptualization of disability as a social construction. When combined in an intervention, these methods successfully improved participants' attitudes toward people with disabilities as a group. Although there were limitations to this intervention, and it may have been particularly successful due to the inclusion of contact, it acts as a foundation for the creation of disability curriculum in higher education. The discussion of disability as a social construction within education and broader contexts may serve to reduce attitudinal barriers toward disability and their negative effects upon society.

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APPENDIX – Disability Model Scales

To what extent do you personally agree with the following statements?

	Disagree strongly	Disagree	Disagree slightly	Agree slightly	Agree	Agree strongly
1. Disability is caused by immoral behavior or sins.	1	2	3	4	5	6
2. Disability is a test of faith.	1	2	3	4	5	6
3. Disability brings shame to the person with the disability and the person's family.	1	2	3	4	5	6
4. God gives us only what we can bear in terms of disability.	1	2	3	4	5	6
5. There's a reason people are chosen to have disabilities.	1	2	3	4	5	6
6. There is meaning and purpose in disability.	1	2	3	4	5	6
7. A disability is a medical problem that resides in the individual.	1	2	3	4	5	6
8. Disability is inherently pathological.	1	2	3	4	5	6
9. Disability is a medical abnormality caused by genetics, bad health habits, or a person's behavior.	1	2	3	4	5	6
10. The goal should be to cure disability.	1	2	3	4	5	6
11. Healthcare professionals should strive to make patients with disabilities as normal as possible.	1	2	3	4	5	6

	Disagree strongly	Disagree	Disagree slightly	Agree slightly	Agree	Agree strongly
12. Disability is socially constructed.	1	2	3	4	5	6
13. Our society fails to accommodate people with disabilities.	1	2	3	4	5	6
14. People with disabilities can be considered a minority group that has been denied its civil rights.	1	2	3	4	5	6
15. Prejudice, stigma, discrimination, and a lack of accommodations limit people with disabilities.	1	2	3	4	5	6
16. Society has failed a segment of its citizens by not accommodating people with disabilities.	1	2	3	4	5	6
17. An important way to help the situation of people with disabilities is to change social policy to increase access and inclusion.	1	2	3	4	5	6

Moral model scale: Items 1-6

Medical model scale: Items 7-11

Social model scale: Items 12-17

