

A SOCIAL IDENTITY ANALYSIS OF PEOPLE WITH DISABILITIES PERCEIVING
DISCRIMINATION AS ILLEGITIMATE

By

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Abstract

Discrimination—negative differential treatment against a group or a person based on their group membership—is not always considered unacceptable (Jetten, Iyer, Branscombe, & Zhang, 2013). Discrimination against people with disabilities is especially difficult to diagnose as illegitimate because differential *ability* has long been used a criterion to exclude or treat differently (e.g., Blind or visually impaired people are unable to drive automobiles; some jobs occupied by disabled people can be paid at sub-minimum wages). This ambiguity functions as a formidable obstacle for the collective health and efficacy of the disability community, both because perceiving discrimination as illegitimate has been shown to catalyze collective action (Hansen & Sassenberg, 2011; van Zomeren, Postmes, & Spears, 2008), and because it provides the foundation for positive group identification that can buffer against the psychological harms of pervasive stigma (Branscombe, Schmitt, & Harvey, 1999).

Drawing on social identity theory (SIT; Tajfel & Turner, 1979) predictions, Study 1 ($N = 335$ people with disabilities) assesses whether socio-structural beliefs—permeability of group boundaries, cognitive alternatives to the status quo, and perceived pervasiveness of discrimination—predict perceptions of illegitimate discrimination. The central findings from Study 1 suggest that cognitive alternatives to the status quo and pervasiveness of discrimination, each independently account for variance in explaining perceptions of discrimination as illegitimate. Counter to expectations, group boundary permeability (impairment characteristics: visible, unconcealable, disruptive, and high proportion of life) did not predict participants' perceptions of discrimination as illegitimate.

Study 2 ($N = 172$) investigated the differential influence of disability model endorsement on perceiving discrimination as illegitimate through the socio-structural beliefs from Study 1. Specifically, I measured individual differences in participants' endorsement of medical vs. social model, predicting that to the degree participants endorsed medical model logic, they would perceive discrimination as legitimate, whereas those who showed greater endorsement of social model logic would perceive discrimination as illegitimate. A structural equation model fit to the data with medical and social model endorsement as the predictors, perceived illegitimacy of discrimination as the outcome variable, and

socio-structural beliefs as the mediators, revealed that social model endorsement, but not medical model endorsement significantly predicted illegitimacy of discrimination. Moreover, there was an indirect effect of cognitive alternatives to the status quo and group boundary permeability on the relationship between social model endorsement and illegitimacy of discrimination. There was also an indirect effect of group boundary permeability for medical model endorsement. Perceived pervasiveness of discrimination was not a mediator in the model of best fit.

Finally, in Study 3 ($N = 144$), disability model emphasis (medical=internal limitations, personal responsibility vs. social=external limitations, social responsibility) were experimentally varied, with the expectation that those in the social model condition would perceive discrimination as more illegitimate than those in the medical model condition. This relationship was expected to be accounted for by socio-structural beliefs, as in Study 2. While the manipulation showed a null effect on outcome variables of interest, the manipulation check—participant perceptions of locus of limitations and responsibility for fixing these limitations—did significantly vary by condition; and, when used as the predictor variable, it positively predicted perceptions of discrimination as illegitimate. Consistent with expectations, this relationship was fully mediated by socio-structural beliefs.

The implications of this work are especially relevant for political mobilization within the disability community via clear-cut expectations about what is and is not legitimate exclusionary treatment. To the degree that disability advocacy and rights-based organizations can leverage social model rhetoric to frame issues that affect the disability community (e.g., health care, employment, housing), the more they can reduce the ambiguity of what is acceptable treatment toward the group. As we know from an abundance of real world observations, the clearer cut the injustice, the more people are willing to act to change it.

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A Social Identity Analysis of People with Disabilities Perceiving Discrimination as Illegitimate

Prior to 1970, potential teaching candidates who had a disability were discouraged or turned away from teaching in the New York City school system because “the board’s [of education] logic—which appeared irrefutable to many would-be educators with disabilities—that leading pupils out of a building in case of a fire was part of a teacher’s job description” (Fleischer, Zames, & Zames, 2012, p. 73). One of the leaders of the disability rights movement and former U.S. Assistant Secretary of Education, Judith Heumann, was one such capable teaching applicant who failed to meet these medical expectations, but instead of accepting the decision, she decided to challenge the legitimacy of the ruling (Fleischer et al., 2012). The challenge to the legitimacy of this seemingly ‘common-sense’ exclusion of people with disabilities (PWDs) from employment marked the beginning of the prominent disability legal rights organization Disability in Action and catalyzed subsequent efforts to codify change (i.e. Section 504 of the Rehabilitation Act of 1973) that would challenge the legitimacy of disability discrimination across the country.

Several points of interest arise from such a case study. Does social change on behalf of PWDs depend on disabled people’s questioning the legitimacy of the status quo? If so, a critical question is: what factors led Judith Heumann to question the legitimacy of the exclusionary practice of the NYC Board of Education in the first place? Foregrounding these points of interest is the general orientation to the study of disability psychology that largely overlooks the collective or politicized action that PWDs have engaged in for the past century (Fine & Asch, 1988; Hahn, 1986). As a contrast to the more traditional approaches to disability in psychological science that consider disability-related issues at an individual-level of analysis, the social identity approach to disability (Dirth & Branscombe, 2018), by synthesizing the meta-theoretical contributions of the social identity approach (Reicher, Spears, & Haslam, 2010; Tajfel & Turner, 1979; Turner, Hogg, Oakes, Reicher, Weatherall, 1987) and Disability Studies (Linton, Mello, & O’Neil, 1995), emphasizes the *intergroup* psychological experiences of people with disabilities.

This project empirically examines some of these *intergroup* social psychological processes that are likely involved in Judith Heumann’s decision to challenge the legitimacy of institutionalized

discrimination against people with disabilities. After situating PWDs within an intergroup frame, Study 1 provides an examination of PWDs' beliefs about the social structure and their capacity to predict perceiving discrimination as illegitimate. Adding to the socio-structural factors of cognitive alternatives to the status quo, permeability of group boundaries, and pervasiveness of discrimination (Jetten et al., 2013), Study 2 examines how PWDs' endorsement of contrasting conceptualizations of disability (i.e., medical and social models; Smart & Smart, 2006) affect perceptions of discrimination as illegitimate. Finally, Study 3 experimentally manipulates disability model focus to explore the causal relationship between medical vs. social model framing and PWDs' perceptions of discrimination as illegitimate.

The disability community

This project is predicated on the idea that *disability* constitutes an important social category with which PWDs can attach a degree of psychological meaning (Turner et al., 1987). The concept of disability has evolved rapidly over the course of the past two centuries (Stiker, 1999), though one of the most significant cultural changes was the emergence of large bureaucratic institutions (e.g., Social Security Administration) to manage disability across a range of social domains (Ingstad & Whyte, 1995; 2007; Longmore & Umansky, 2001; Stone, 1984). Because of the pervasiveness of medicalized designation of disability status and subsequent treatment by medical providers, rehabilitation specialists, and government agencies, it is apparent that disability constitutes an increasingly coherent social category within which is experienced by nearly 20% of the U.S. population (CDC, 2015). Additionally, the experience of being categorized as a PWD corresponds to marginalized group status that can be traced throughout modern history in a variety of institutional and cultural forms.

Disability as a historically oppressed group

Disability history often begins with the pre-scientific era that treated physical abnormalities according to cosmological beliefs that attributed divine causality to physical/mental deviations (Garland-Thomson, 1997; Ingstad & Whyte, 1995; 2007; Stiker, 1999). The consequence of marking difference-as-deviance outlasted supernatural explanations of disability, framing more recent cultural responses. For example, the cultural institution of *freak shows* belies the same tendency for Western citizens to reaffirm

their normative status by marking physically and racially contrasting bodies as worthy of public viewing (Bogdan, 1988; Garland-Thomson, 1997; 2005). Underlying these historical approaches to disability is the pervasive sense of negativity and inferiority surrounding disability differences, and a profound aversion to the prospect of having a disability (Shakespeare, 1994). Having a disability meant being subject to the association between disability and poor character and/or moral bankruptcy (Fine & Asch, 1988).

Enlightenment era scientific pursuits further compounded this preoccupation with difference as deviance (Davis, 1995). Between the 19th and 20th centuries, the Eugenics movement, fueled by the scientific zeitgeist, targeted PWDs for elimination because they were thought to be making the body politic less *fit*. In the U.S., the Eugenics movement was championed by many progressives as a way of preventing the contamination of the country with inferior and defective genetic stock (Hubbard, 1997; Pfeiffer, 1994). The consequences of Eugenicist policies included the involuntary sterilization of nearly 60,000 people in the U.S., often from multiply marginalized backgrounds, with impairment used as the primary justification (Stern, 2015). Eugenicist policies were carried to their extreme in Nazi Germany as PWDs were the earliest victims of the Holocaust (Snyder & Mitchell, 2010). Further reaffirming the less-than-fully-human status of people with disabilities, these nearly 300,000 deaths were never prosecuted to the same degree as other racial, ethnic, and sexual groups (Marks, 1999; Ravaud & Stiker, 2001; Watermeyer & Görgens, 2010). As Snyder and Mitchell (2010) observe, “one could effectively assume that if the Nazis had not moved from the persecution of biological and cognitive “deviants” to the extermination of racial, ethnic, and sexual minorities, the imaginary line between “medical intervention” and murder would not have been crossed” (p. 102-103).

The Eugenicist impulse to “help” various categories of disabled people followed other institutional arrangements at the time, namely the demands of a more industrialized workforce. Industrialization is further implicated in the oppression of disabled people to the extent that labor became an important domain for achieving full citizenship, materially and symbolically (Abberley, 1987). PWDs are designated as *disabled* in the modern age because of their incompatibility with the precipitous growth

in manufacturing jobs that demanded specific functional capabilities (Stone, 1984). The social importance of labor for securing life sustaining provisions led to a formalization of disability as a protected class of individuals who could not work and so were provided for by the state (Stone, 1984). Though a seemingly humanitarian arrangement, this categorization of disability as dependent on the tax payer and/or the charity of others came to naturalize the lower-class status of PWDs. For someone with a disability, it is only within the last quarter century, since the passage of the Americans with Disabilities Act (1991), that social expectations of getting an education and receiving gainful employment were written into federal law. Internalizing lower social expectations of dependency was undoubtedly a norm in previous generations and given the current gap in unemployment rates between those with (81%) and without (30%) disabilities (McMahon & Shaw, 2005) more still needs to be done to communicate these higher expectations.

Albeit a cursory review of oppressive historical arrangements, a clear picture emerges of the ways disability has been a stigmatized *social category* for much of modern human history. Critical to the major point of this paper, this treatment exists on a category basis largely independent of individual disability “type”. To the extent that one was considered subnormal in corporeal sense, he or she was designated in a special class, at best to be under supervision and custody of the state, and at worst subject to sterilization or even euthanasia. Marking this history continues to be a vital resource for the sustenance of the disability community in the sense that it calls attention to the systemic and collective injustices people with disabilities have experienced across time and space (Hahn, 1985; 1988; Linton et al., 1995).

Contemporary disability disparities. There are number of social disparities that continue to persist between people with and without disabilities. PWDs face higher rates of unemployment and lower college graduation rates (US Department of Labor, Bureau of Labor Statistics, 2017) and higher representation below the poverty line (Erickson, Lee, & Von Shrader, 2015) compared to nondisabled people. Moreover, PWDs experience significant health disparities where they are at greater risk for secondary health conditions unrelated to their impairment condition (Kinne, Patrick, & Doyle, 2004). In

other words, inadequate health care quality, access, education, and social support perpetuate poor health outcomes for PWDs relative to their nondisabled peers (Drum, Krahn, Cully, & Hammond, 2005).

Internalized disability oppression. As Watermeyer and Görgins (2010) state, “disabled selves are shaped through processes of lifelong socialization saturated with devaluing meanings...a very different trajectory from their nondisabled contemporaries, [and] radically different social responses at every level...” (p. 262). Disability scholars have increasingly called attention to this dominant cultural ideology which they have called *ableism* (Campbell, 2009; Wolbring, 2008). PWDs are acutely aware, as a function of their socialization in an ableist culture, of the valuation of autonomy, growth, self-control, and ability (Hughes, 2007). The pervasiveness of ableism, combined with the fact that disabled people growing up have little contact with the disability community, can support PWDs internalizing values antithetical to their condition, and in turn, accepting their inferior status and responding to their disability with shame, redoubling their efforts to cure and distance themselves from their disability (Campbell, 2008; Watermeyer & Görgins, 2010). Within this arrangement, PWDs could be expected to individualistically cope with their experience working to move into the nondisabled group (Branscombe & Ellemers, 1999; Dirth & Branscombe, 2018). Likewise, PWDs may be far less inclined to recognize, name, and contest negative differential treatment against PWDs, or themselves as a function of their disability because they may perceive treatment as ‘unfortunate’ but ‘just the way it is’ (Dirth & Branscombe, 2017).

Collective resistance and action. While there are significant disparities and historical headwinds that PWDs must navigate in their everyday world, it is also important to document the progress that PWDs in the United States have made over the last 50 years. This progress is largely a function of hard-won anti-discrimination legislative victories for PWDs including Section 504 of the Rehabilitation Act (1973), which prohibited discrimination within federally funded institutions and ensured children with disabilities have access to equal education opportunities; and the Americans with Disabilities Act (1990), which prohibits discrimination across all public domains (e.g., housing, transportation, employment, etc.). Beyond what these legislative measures do for PWDs are the stories of

PWDs coming together, across impairment types, to demonstrate and rally for the passage of these bills (Fleischer et al., 2012). For example, in 1977, 150 disabled activists organized a sit-in at the San Francisco Federal Building that held offices of the Department of Health, Education, and Welfare (HEW) to protest the delayed passage of enforcement regulations for Section 504. This demonstration is notable because, at 26 days, it represents the longest sit-in in U.S. history (Barnartt & Scotch, 2001). Activism by Disability advocacy groups like ADAPT and Disability in Action, to resist the repeal of the Affordable Care Act (2010) or the passage of H.R. 620¹, show the continuity between past and present collective action by and for PWDs, and distinct real-world examples of PWDs contesting injustice against the disability community.

As a function of the political gains brought about by the disability rights movement, academic spaces have seen an increase in the representation of disabled scholars (Linton et al., 1995). Consequently, the transdisciplinary field of Disability Studies (DS) has emerged from an increasing number of PWDs articulating their own research questions informed by insider experiences with disability. Specifically, DS pushes back against traditional approaches to disability research and practice that treats disability as an objective medical condition requiring diagnosis and remediation. DS scholars, following disability activists have identified the *medical model* approach to disability as a primary source of stigmatization and dehumanization, where a PWD is reduced to the impairment condition that must be eliminated (Swain & French, 2000). Contrasting the medical model, early DS scholarship and activism articulated a *social model* approach that considers disability as something externally imposed on top of a specific impairment condition (Shakespeare, 2006; UPIAS, 1979). The social model underpins much of the scholarship in DS, because it enables a more expansive understanding of disability as a social, cultural, and historical construct, beyond a medical condition (Linton, 1998). Likewise, it provides a more inclusive basis for experiencing disability category membership across impairment groups as it assumes broad, external sources of limitation rather than idiosyncratic, individual symptoms (Dirth &

¹ H.R. 620 is a legislative proposal that weakens the ADA's Title III statute by increasing the delay in addressing a consumer complaint (up to 180 days) before a lawsuit is permitted (National Disability Rights Network, 2017)

Branscombe, 2017; 2018; Smart & Smart, 2006). Most significant to this project, the articulation and development of the social model within DS scholarship provides the necessary paradigm shift for situating disability experience within the social psychological theoretical proposals offered by the social identity approach (Tajfel & Turner, 1979; Turner et al., 1987).

Social identity approach to disability

While traditional approaches to disability in psychology were reticent to consider disability as an intergroup psychological phenomenon (Barker, 1948; Meyerson, 1988; Tajfel, 1978), it seems indisputable that contemporary disability experiences are intricately linked to an awareness and subsequent solidarity with others who share the experience of disability (Anspach, 1979; Fine & Asch, 1988; Scotch, 1988). Therefore, using a social identity approach to disability can provide a novel understanding of psychological phenomena affecting PWDs that are irreducible to the level of the individual and allow for disability experiences to change over time and across space as a function of socio-structural factors like ongoing status relationships and perceived permeability of group boundaries (Dirth & Branscombe, 2018).

More precisely, the SIA to disability uses social identity and self-categorization theories (Tajfel & Turner, 1979; Turner et al., 1987) to account for when a PWD will categorize as a member of the disability group and how a PWD will manage the stigma that accompanies disability group membership. Relevant to the present inquiry, SIT proposes that in the presence of pervasive stigma and discrimination, group members can attempt to distance themselves from the group in order to protect their personal identity from threat (social mobility), or they can move closer to the group in order to reinterpret the meaning of the devalued characteristic (social creativity), or challenge the outgroup's claim to a higher status position (social competition; Branscombe, Fernández, Gómez, & Cronin, 2011). According to SIT, whether a PWD will pursue a collective coping strategy, over an individualistic coping strategy, depends on group members' perceptions of group boundaries as permeable (Ellemers, 1993; Ellemers, van Knippenburg, & Wilke, 1990). If mobilizing out of the group is not feasible because of rigid group boundaries (e.g., they cannot physically change groups or adequately approximate high-status group

norms, values, and/or physical presentation), subsequent strategies depend on the relative stability and legitimacy of intergroup status relations (Tajfel & Turner, 1979). Should status relations be stable and legitimate, emphasizing the positive distinctiveness of the group through social creativity is a viable strategy (Jackson, Sullivan, Harish, & Hodge, 1996). However, if status relations become destabilized, and if the unequal status relations are called into question by the stigmatized group, group members are more likely to engage in collective action (social competition) towards achieving a higher status position (Ellemers, Wilke, & van Knippenberg, 1993).

Perceiving discrimination as illegitimate

How group members begin to challenge the legitimacy of unequal status relations between groups is a significant question that SIT can help explain (Tajfel & Turner, 1979; Reicher et al., 2010). One way for stigmatized group members to call into question the ongoing status relations between-groups is to point to negative differential or exclusionary treatment (i.e., discrimination) against the ingroup as illegitimate (Jetten, Iyer, Branscombe, & Zhang., 2013).

It is notable that negative differential treatment is/has not always perceived as *unacceptable* discrimination. Both historical (i.e., denying women or African Americans the right to vote) and contemporary (i.e., cannot vote if one is under 18 years-old) examples speak to the subjectivity of negative differential treatment. For PWDs, the contestation of what is legitimate differential treatment is an ongoing project that can be found in everything from health insurance policies (e.g., pre-existing conditions; caps on insurance spending; Leys, 2018; Kodjak & Davis, 2018), to making private businesses accessible (H.R. 620, 2018), to paying disabled workers sub-minimum wages (Fair Labor Standards Act, 1938; O'Hara, 2016). Indeed, to the degree that disability exclusion is pervasive and legitimate, one can expect reduced collective coping strategies and more reticence in affirming one's disabled group membership (Jetten, Schmitt, & Branscombe, 2013; Jetten, Schmitt, Branscombe, Garza, & Mewse, 2011).

In Jetten and colleagues (2013) review of what factors shift stigmatized group members perceptions of group-based discrimination from being acceptable to unacceptable, they suggest that first

and foremost, the criteria for differential treatment must be viewed as group rather than individually-based. For PWDs, this can be somewhat difficult, given the predominant disability paradigm that suggests idiosyncratic impairment factors are what dictate everyday social interactions (Fine & Asch, 1988), and the underappreciated reality that PWDs, across impairment-types, share a lot of social treatment in common (e.g., stereotypes, economic and health outcomes; Nario-Redmond, 2010; Erickson et al., 2015; Kinne et al., 2004). Even so, the way I am approaching discriminatory treatment, including the way I am measuring perceptions of discrimination legitimacy in the current project, assumes group-based rather than individual-based criteria for exclusion.

Beyond this group-based prerequisite, Jetten and colleagues (2013) review three primary factors that predict perceptions of discrimination as illegitimate: permeability of group boundaries, cognitive alternatives to the status quo, and pervasiveness of group-based discrimination. These factors are rooted in the fundamental SIT assumption that people strive for positive social identity, and it is a group members' beliefs about the nature of the intergroup social structure, that determine how people will pursue a positive social identity (Ellemers, 1993).

Permeability of group boundaries

Perceived permeability of group boundaries has long been considered a pivotal factor for predicting when stigmatized group members would pursue individualistic or collectivist coping outcomes (Ellemers, 1993; Tajfel & Turner, 1979). As Jetten and colleagues (2013) suggest, even when discrimination is viewed as illegitimate, if there is a sense that group boundaries are permeable and social mobility is feasible, stigmatized group members are likely to seek an exit from the stigmatized group. When that possibility is foreclosed to group members, because they perceive there is no physical or symbolic way of moving into the higher status group, they are more likely to pursue strategies to improve the distinctiveness of the group. Indeed, extensive research in the social identity tradition suggests that when there are more rigid barriers to achieving high status, stigmatized group members are pressed to move *toward* rather than *away* from the group to rectify the situation (Danaher & Branscombe, 2010;

Ellemers, 1993; Ellemers et al., 1990; Hersby, Ryan, & Jetten, 2009; Wright, Taylor, & Moghaddam, 1990).

For PWDs, group boundary permeability may be influenced by multiple factors, including impairment-related characteristics. For example, if a PWD has a nonvisible or less disruptive impairment, she/he may be able to better approximate nondisabled group status, thereby avoiding pervasive stigma (Bogart, Rottenstein, Lund, & Bouchard, 2017). Likewise, if she/he can sufficiently remediate his/her impairment condition through medical treatment (e.g., Fernández, Branscombe, Gómez, & Morales, 2012), or mitigate barriers to mainstream social exclusion through material means (e.g., money, technologies) they will be more likely to pursue individual coping strategies (Dirth & Branscombe, 2018).

Cognitive alternatives to the status quo. Exclusion is more likely to be viewed as illegitimate to the degree that a member of a marginalized group believes there are alternative futures where the group is not oppressed (Tajfel, 1978). This follows a basic SIT proposition that to the extent status relations between groups are stable and secure, both the high and low status group members will generally accept the status quo (Tajfel & Turner, 1979). For stigmatized group members specifically, pursuing social competition to cope with stigmatization is unlikely when status relations are secure. Without a clear sense that exclusion could be changed, or there is a future where it will ‘get better’, group members may be unlikely to contest discrimination, or even construe exclusion as group-based in the first place (Jetten et al., 2013). However, when there are cognitive alternatives to ongoing status disparities, group members can experience stronger identification with the group and may seek out further steps to realize that ‘better future’ through collective rather than individual strategies (Zhang, Jetten, Iyer, & Cui, 2013). In some cases, group members who see a potential for status relations to change may pursue collective coping strategies even when social mobility is feasible (Ellemers, 1993). For PWDs, the expectation is that those who can envision alternatives to current inequality will be more inclined to call into question the legitimacy of disability exclusion.

Pervasiveness of discrimination. Pervasiveness of discrimination refers to how widespread and frequent group-based discrimination is perceived to be (Jetten et al., 2013). When a group member

experiences pervasive discrimination, it is not only a barrier to many aspects of his or her daily life, but it becomes a persistent reminder of his/her group membership. Therefore, one would expect someone who experiences pervasive discrimination to have a stronger intergroup understanding of social reality where ingroup similarities and between-group differences are accentuated (Tajfel, 1978). Likewise, the more pervasive discrimination is, the less likely that the exclusion is legitimate and perceived as based on some legitimate correspondence between the criteria for exclusion and one's group membership. In other words, a PWD being excluded in one domain (e.g., sports) could be understood on the basis that a criterion for exclusion will be falling below some level of athletic prowess. However, a PWD being excluded in sports *and* education, employment, and housing domains stretches that criteria for exclusion to the point where it much less tenable. Therefore, one would expect perceived pervasiveness of discrimination to be predictive of illegitimacy appraisals of discrimination.

Group identification. While it is not a socio-structural belief, group identification is potentially predictive of perceived illegitimacy of discrimination, because it promotes a view of the world through an intergroup—'us' vs. 'them'—lens (Tajfel & Turner, 1979). This is a theoretical relationship that has been effectively demonstrated across hundreds, if not thousands of studies (van Zomeren, Postmes, & Spears, 2008). A consequence of stigmatized group identification, therefore, is the perception that the treatment one receives is based on his/her group membership as opposed to personal characteristics—a critical prerequisite to perceiving the discrimination as illegitimate (Jetten et al., 2013). Prior research indicates that disability social identification is predictive of interpreting unequal group outcomes as the result of discrimination (Nario-Redmond & Oleson, 2016), a closely related construct to perceiving discrimination as illegitimate. For PWDs, stronger social identification with the disability community is expected to be positively related to perceptions of discrimination as illegitimate.

Overview of Study 1

Study 1 sets out to identify the social psychological factors that can promote (or inhibit) disabled persons' perceptions of discrimination as illegitimate. SIT proposes that group members' socio-structural beliefs are significant predictors of perceiving discrimination as illegitimate. These beliefs about the

permeability of group boundaries, alternatives to the status quo, and pervasiveness of discrimination, have been validated across many investigations (Jetten et al., 2013), though never with people with disabilities as the sample. Likewise, disability group identification is predicted to serve as an independent predictor of perceiving discrimination as illegitimate.

Method

Participants

Participants ($N=349$) were recruited from Amazon's Mechanical Turk and paid \$1.00 for their participation in the study (see Table 1 for sample characteristics). To recruit participants with disabilities, I asked for "participants who could be identified as having a disability". I provided a prompt at the beginning of the survey to ask participants again if they fit this study's requirements, and at the end of the study, I provided a prompt that requested, "In order to ensure the validity of this study's results, we ask that you confirm that you identify yourself as having a disability. If you *do not* identify yourself as having a disability, you are still entitled to payment for completing this study, but we ask that you check the box labeled "No" for our records". Thirteen participants were removed for indicating before or after the study that they were not disabled, or for not answering the verification question at the end of the study.

Measures

Illegitimacy of Discrimination. To measure illegitimacy of discrimination, participants were presented with a list of 10 scenarios that described negative differential treatment against Disabled people (Dirth & Branscombe, 2017; e.g., *A Blind accountant who has been at the company for 15 years was passed up for a promotion by a sighted-individual who has only been working in the company for 3 years;* see appendix A). For each scenario, participants were asked to indicate on a 1 (very legitimate) to 7 (very illegitimate) Likert-type scale, how they perceived the differential treatment. Scenarios were included to the degree that they provided ambiguity in how legitimate they seemed as opposed to including scenarios that depicted outright bias (e.g., *A politician uses a mocking gesture to depict a disabled reporter at a rally*). The scenarios were validated in several previous studies (Dirth & Branscombe, 2017), and they

showed good reliability ($\alpha=.82$; $M=5.19$; $SD=1.07$) and acceptable skewness and kurtosis statistics in this study.

Disability identification. Measuring disability group identification continues to present a few challenges in the literature (Dirth & Branscombe, 2018). For instance, typical measurements of disability identity do not do enough to effectively distinguish between the personal and the collective self (e.g., “I am proud of my disability”, “I identify as a person with a disability”, Bogart et al., 2017; Darling, 2003). Moreover, while it is not necessarily an issue for other marginalized groups, for PWDs, the centrality or salience of group membership could be rather acute but not positive, and sometimes quite negative (e.g., Cruwys & Gunaseelan, 2018; Watson, 2002). Finally, it continues to be difficult to distinguish between one’s sense of group membership with a pan-impairment, disability community or a sub-group of people who share a designated condition (e.g., Autism, Deafness) or set of conditions (e.g., Physical Disability).

To manage these concerns, disability identification was measured using Luhtanen and Crocker’s (1992) private and importance collective self-esteem subscales to account for both one’s affective attachment with one’s group and the personal importance of membership to that group. The private collective self-esteem sub-scale is characterized by positive affect directed toward the disability community (4 items; e.g., *Overall, I feel that the Disability community, of which I am a member, is not worthwhile.* (Reversed); *I feel good about the Disability community*) whereas the importance collective self-esteem sub-scale is characterized by the centrality of the disability community to one’s self-concept (4 items; e.g., *The disability community, to which I belong, is an important reflection of who I am.; In general, belonging to the disability community is an important part of my self-image;* See Appendix A). The importance ($\alpha=.80$; $M=3.32$; $SD=1.44$) and private ($\alpha=.73$; $M=4.21$; $SD=1.30$) subscales had good reliability and averaged scores for both subscales were normally distributed. The correlation between the subscales ($r = .51$) indicates they are measuring related, yet separate constructs.

Pervasiveness of Discrimination. Perceptions of the pervasiveness of discrimination against disabled people were measured using a 1-7 Likert-type scale (1=Not at all; 7=Quite a lot). Participants answered two questions: “How widespread is discrimination against people with disabilities?” and “How

frequent is discrimination against disabled people?” The 2-item measure had good reliability ($\alpha=.90$; $M=4.85$; $SD=1.26$) and averaged scores were normally distributed.

Cognitive alternatives to status quo. A 3-item measure was generated based on themes outlined in Jetten et al. (2013) and by translating items from Zhang and colleagues’ (2013) study investigating cognitive alternatives to the status quo. Sample items to which participants were to rate their level of agreement on a 1-7 Likert-type scale include: “In the future, people with disabilities will have the same opportunities as nondisabled people”, “Greater equality and inclusion are very much attainable for people with disabilities”, and “The existing unequal social reality between those with and without disabilities is not the only possible reality”. Because the three-item measure had low reliability ($\alpha=.57$), the second item was dropped (See Appendix A; $\alpha=.70$; $M=4.51$; $SD=1.41$). The final 2-item composite was normally distributed.

Group boundary permeability. Permeability was operationalized as a PWD’s capacity to physically appear as nondisabled. Prior research and theorizing has noted the significance of various impairment specific characteristics (e.g., duration, visibility) that can influence disability identity processes (i.e., Bogart, 2014; Bogart et al., 2017). This construct was measured using information provided about the nature of participants’ impairments. Namely, visibility (coded 0=Visible/Easily observed by others, 1=Non-visible/Not easily observed by others), concealability (1 item: “I can easily conceal my disability from others”), disruptiveness (1 item: “How disruptive is your disability to your everyday life?”; 1=Not very disruptive – 7 = Highly disruptive), and proportion of life with disability (Years having a disability/Age).

Results

Personal characteristics. The initial step of my analysis was to determine if participant characteristics were related to their perceptions of discrimination as illegitimate. Indeed, as Table 3 indicates there were several factors that showed a relationship with the dependent variable of interest: age ($r = .21$), gender ($r = .20$), education level ($r = -.11$), and income ($r = -.22$). I included these factors as covariates in the first step of the regression model.

Predicting perceptions of illegitimate discrimination. To see if the hypothesized factors independently predict perceived legitimacy of discrimination, I ran an ordinary least squares (OLS) regression analysis entering sets of variables sequentially (see Table 4). After the covariates (age, gender, education, and income; STEP 1), I added disability identification (private, importance; STEP 2), pervasiveness of discrimination (STEP 3), cognitive alternatives to the status quo (STEP 4), and impairment characteristics (visibility, concealability, disruptiveness, and duration; STEP 5).

Results indicate the complete model accounted for 21.2% of the variance of perceived legitimacy of discrimination. Each step following the entry of the covariates accounted for a significant amount of additional variance (Step 2 $\Delta R^2 = .023$; Step 3 $\Delta R^2 = .058$; Step 4 $\Delta R^2 = .011$) except for the final step ($\Delta R^2 = .014$). This indicates that the disability identification, perceived pervasiveness of discrimination, and cognitive alternatives to the status quo steps independently predict perceptions that discrimination is illegitimate. The final model shows that the private collective self-esteem subscale was only marginally significant ($\beta = .112, p = .07, 95\% \text{ CI } [-.008-.203]$), and the importance subscale did not approach significance ($\beta = -.084, p = .229, 95\% \text{ CI } [-.157-.026]$) in predicting illegitimacy of discrimination. Perceiving pervasive discrimination ($\beta = .244, p < .001, 95\% \text{ CI } [.118-.303]$) and cognitive alternatives to the status quo ($\beta = .122, p = .020, 95\% \text{ CI } [.018-.205]$) showed modest yet significant coefficients, but the proxy measures for permeability—impairment characteristics—did not.

Discussion

This study provides a first examination of the ways socio-structural beliefs predict PWDs perceptions of discrimination as illegitimate. While this set of relationships has been tested widely in the literature, both in minimal groups paradigms and in other historically marginalized groups, it has yet to be tested using a sample of people with disabilities. The results generally support social identity theory's (SIT) contention that a group members' perceptions of how pervasive group-based discrimination appears to be and their capacity to think of alternative, more equitable intergroup arrangements are significant antecedents to calling into question negative treatment against the group.

Counter to SIT hypotheses, group boundary permeability did not account for significant variance in illegitimacy of discrimination. There are a couple of reasons why this null finding might have occurred. The first possibility concerns the way the permeability construct was operationalized and measured in Study 1. Rather than assessing participants' subjective beliefs about the rigidity of group boundaries, I assumed that certain impairment characteristics would provide an indication of how likely participants could physically mobilize into the higher status (nondisabled) group. For instance, the more visible and disruptive an impairment is, and the more difficulty one has concealing an impairment, the less capacity a PWD ostensibly has approximating nondisabled group membership. Likewise, if a PWD has spent a greater proportion of their life with a disability, they should have lower expectations of changing their disability status (Bogart, 2014; Bogart et al., 2017). Indeed, Nario-Redmond and Oleson (2016) found that proportion of life with a disability was a significant predictor of attributing disability inequality to group-based discrimination.

Drawing an inference from the null findings, I suspect participants' *beliefs* about the rigidity or permeability of group boundaries are separate from the capacity afforded by one's impairment presentation to physically approximate nondisabled group membership. As Armenta and colleagues (2017) note in their review of the group boundary permeability construct, permeability can include both physical and *symbolic* efforts to matriculate into the higher status group. In other words, while one may consider it as impossible to physically change group memberships (i.e., cure one's impairment condition), she/he may successfully access the symbolic resources of the higher status (nondisabled) group. Even while a person may have a visible and/or disruptive condition, he or she may have access to medical and technological resources that make it easier for mainstream social participation. Indeed, the full regression model indicates education level ($\beta = -.153$, 95%CI [-.274--.053]) and income (to a lesser extent ($\beta = -.083$, 95%CI [-.151-.019])) negatively predicted perceptions of discrimination as illegitimate. For PWDs, education attainment and material resources could afford more access to better medical treatment (Drum et al., 2005; Kinne et al., 2004) and more opportunities to matriculate into mainstream society (Block, Balcazar, & Keys, 2002).

Another result that countered Study 1 hypotheses was Disability group identification's failure to add meaningfully to the predictive model. The private collective self-esteem subscale was only marginally significant, and the importance collective self-esteem subscale did not even approach significance as a predictor of illegitimacy of discrimination. The different predictive relationship between the private and importance subscales and perceptions of discrimination as illegitimate suggest the centrality of disability group membership to the self-concept and one's affinity toward the disability group are related but distinctive aspects of disability identification. From the data, it is participants' affinity toward the disability community, and not the centrality of that group membership to participants' self-concept that predicts illegitimacy of appraisals. This is likely because affinity or affective attachment toward the group is more consistent with SIT's operationalization of social identity (Ellemers et al., 1999), whereas centrality is more consistent with the cognitive operationalization of social identity provided by self-categorization theory (Turner et al., 1987; van Zomeren et al., 2008). Given that this research is derived from the stigma-management propositions found in SIT, it should not be too surprising that its formulation of social identity is more closely related to the variables of interest.

More generally, while it collectively added significantly to the predictive model, disability group identification collectively, it a very modest contribution (removing group identification from the regression model changes the Adjusted R^2 from .215 to .212, a .3% change in the variance in illegitimacy perceptions). Given that identification does not operate as a primary theoretical predictor of perceptions of illegitimate discrimination in the same way as the socio-structural beliefs included in the model, this finding appears less surprising. Group identification could be said to appear as influential at different points in the set of relationships examined in Study 1. For instance, stronger group identification has elsewhere been found to be an outcome of perceiving discrimination as illegitimate (e.g., Branscombe, Schmitt, Harvey, 1999). Doosje, Spears, & Ellemers (2002) provide evidence that group identification can be both a cause and a consequence of perceiving changes in the intergroup status relations. Additionally, stronger group identification may be catalyzing the perception that negative differential treatment is based on group criteria rather than one's personal characteristics in the first place (a prerequisite of perceiving

discrimination as illegitimate; DePaulo & Morris, 2006; Postmes, Branscombe, Spears, & Young, 1999) and less consequential to the subsequent belief that it is illegitimate. In sum, given the modest role of disability group identification as a predictor, its potential bi-directional role in perceptions of discrimination as illegitimate, and the primary objective of this project to predict perceptions of illegitimate discrimination (and not group identification), disability group identification is not carried forward as a variable of interest in Studies 2 and 3.

Introduction to Study 2

Building on the central findings from Study 1, I was interested in whether PWDs' orientation to disability, or their endorsement of different disability models, influences their perception of discrimination as illegitimate. Disability activists and researchers have identified *disability models* as ostensible paradigms that dictate what aspects of disability are most impactful for a PWD and subsequently prioritized in policy, research, and education (e.g., Linton et al., 1995; Smart & Smart, 2006). Disability models, by framing disability-related issues, shape expectations about disability-related issues for people with and without disabilities (Beckett & Campbell, 2009; Darling, 2003; Darling & Heckert, 2010; Dirth & Branscombe, 2017; Little, 2010; Wang, 1998). In terms of content, activists and researchers have identified two dominant and contrasting models of disability—the social and medical models (Marks, 1999; UPIAS, 1979; Shakespeare, 2006). Both disability models provide information about what are the most significant aspects of disability, and consequently could shape beliefs about the socio-structural relations that affect PWDs.

Medical model. The medical model of disability is characterized by its predominant emphasis on the impairment condition as an objective property of an individual body or mind (Ferguson, Ferguson, & Taylor, 1992; Smart & Smart, 2006). Endorsement of a medical model of disability has relevance to perceiving discrimination as illegitimate primarily because of its conceptual relationship to socio-structural beliefs about pervasiveness of discrimination, permeability of group boundaries, and cognitive alternatives to the status quo. From the medical model premise, disability issues are idiosyncratic, operating at the level of the individual, and therefore undermine possibilities for building connections to

others across conditions in the broader disability community (Schur, 1971; Wang, 1998). Accordingly, the salience of the *intergroup* reality is reduced, and exclusionary treatment is likely to be construed in more interpersonal terms according to features of one's impairment condition, not as pervasive across disability group membership (Jetten et al., 2013).

Related to cognitive alternatives to the status quo, Dirth and Branscombe (2017) demonstrate with a nondisabled sample that a medical model framing of disability provides a legitimizing function of disability disparities such that inequalities are understood as unfortunate but unavoidable. Through medical model logic, disabilities are imagined to be abnormal and pathological and hence inferior by their very nature (Bickenbach, 1993). Therefore, it should be less tenable through the medical model to imagine a future where PWDs will have similar opportunities as nondisabled people.

Finally, according to the medical model emphases, remediation and rehabilitation of the impairment condition are considered priority (Conrad, 1975; Smart & Smart, 2006). One inference of this logic is an expectation that a PWD can recover (with sufficient intervention and effort) from his/her ailment and subsequently exit the stigmatized disability group. Not only does the medical model provide an expectation that one is capable of recovery (i.e., group boundaries are permeable), it suggests that recovery (social mobility strategy; Tajfel & Turner, 1979; Dirth & Branscombe, 2018) should be the primary motivation of the disabled person. In sum, to the degree a PWD endorses medical model logic, she/he will be more inclined to perceive group boundaries as permeable.

Social model. Contrasting the medical model, the social model is characterized by an emphasis on the environment, physical and social, as the source of limitations for a PWD (Dirth & Branscombe, 2017; Shakespeare, 2006; Smart & Smart, 2006). As with the medical model, the social model is likely to connect to predictors of perceiving discrimination as illegitimate. First, externalizing the source of disability-related issues is amenable to building coalitions between PWDs across impairment-types and is thought to be a key catalyst to the formation of the disability rights movement (Fleischer et al., 2012). Whereas the medical model emphasizes the idiosyncratic and individual-centered nature of limitations, the social model shifts the focus to barriers like negative social attitudes and inaccessible social

environments that are pervasive across a variety of social domains (Barnes & Mercer, 2005; Dirth & Branscombe, 2017).

This hypothesis is evidenced in Dirth and Branscombe's (2017) study of disability models' differential influence on perceptions of structural discrimination and subsequent support for pro-disabled policies. In the social model condition, nondisabled participants read an article describing disability-related difficulties as a function of external factors (social and physical environment), whereas those in the medical model condition read about difficulties as a function of internal factors (impairment symptoms). Those in the social model condition showed greater recognition of structural discrimination against people with disabilities than those in the medical model condition, providing support to the idea that the social model can potentially influence PWDs perceptions of discrimination as pervasive.

The social model logic also suggests alternatives to the *group* status quo by focusing on social responsibility, rather than individual responsibility for changing disability-related limitations (Dirth & Branscombe, 2017). Indeed, if disability-related difficulties are considered more the product of the environment that was designed without PWDs in mind, then there is nothing inherently pathological or inferior about PWDs (Dembo, Levitan, & Wright, 1975). Therefore, with greater social awareness and understanding, more progressive political policies that account for common needs of the disability community, and the universal removal of architectural barriers, a future where PWDs have the same opportunities as nondisabled people is attainable.

Finally, whereas the medical model promotes a social mobility strategy that is predicated on the perception that group boundaries are permeable, the social model emphasizes extra-individual solutions to disability-related issues that do *not* require a PWD to exit the group to deal with the issues. In fact, potential solutions like policy changes and removal of barriers are more likely to require collective efforts by PWDs and will only be successful to the degree that PWDs move toward rather than away from the group. Therefore, to the degree that PWDs endorse the logic of the social model, they will be less likely to perceive group boundaries as permeable.

Overview of Study 2

The central objective of Study 2 is to consider whether PWDs' relative endorsement of the social and medical models underpins PWDs' perceptions of discrimination as illegitimate, and whether socio-structural beliefs account for this relationship. In accordance with previous theory and evidence (e.g., Darling & Heckert, 2013; Dirth & Branscombe, 2017; 2018; Little, 2010; Wang, 1998), I predict a contrasting set of relationships between endorsement of the social and medical models of disability. Social model endorsement will predict more illegitimacy appraisals, whereas medical model endorsement will predict less. Regarding the mediating relationship, social model endorsement should be positively related to pervasiveness of discrimination, cognitive alternatives to the status quo, and rigid group boundaries, whereas endorsing the medical model will act in the opposite direction (see Figure 1).

Method

Following a similar procedure as in Study 1, Participants ($N=189$) were recruited from Amazon's Mechanical Turk and paid \$1.00 for their participation in the study. The study posting was set as unavailable for those who participated in Study 1. As in Study 1, participants were recruited to the degree that they self-identified as having a disability, and participants were asked before and after the study to reaffirm their status as a person with a disability. Seventeen participants were excluded from analysis for either indicating they were nondisabled or for not answering the verification question at the end of the study. See Table 1 for the demographic characteristics of the sample.

Measures

Social model endorsement. Five items were generated to assess participant endorsement of the social model of disability (Darling & Heckert, 2010; Dirth & Branscombe, 2017). Participants were asked to rate their agreement using an 1-7 Likert type scale with items such as "The social and physical environment can cause, contribute to, and exaggerate disability", "There is a need to stop focusing on particular disability conditions and instead focus on universal problems facing people with all types of disabilities", and "Society needs to accept more responsibility to correct the ways in which they have treated people with disabilities unfairly" (see Appendix B). These items had good reliability ($\alpha=.71$; $M=5.12$; $SD=.94$) and the composite measure was normally distributed.

Medical model endorsement. Five items were generated to assess participant endorsement of the medical model of disability (Darling & Heckert, 2010; Dirth & Branscombe, 2017). Participants were asked to rate their agreement using an 1-7 Likert type scale with items such as “It is mainly the effects of a diagnosed medical condition that cause difficulties in a disabled person’s life”, “Medical experts are in the best position to assess a disabled person’s quality of life”, and “It is the diagnosed medical condition that places limits on a disabled person’s life”. These items had good reliability ($\alpha=.72$; $M=4.41$; $SD=1.18$) and the composite was normally distributed.

Group boundary permeability. To better account for participants’ beliefs about group boundary permeability, I generated 6 items with themes that matched with conceptualizations of group boundary permeability (Hersby et al., 2009; Verkuyten & Reijerse, 2008; Mummenday, Klink, Mielke, Wenzel, & Blanz, 1999). Participants rated their agreement with the items using a 1-7 Likert type scale (e.g., *It is easy for people with disabilities to be accepted in mainstream society*; *In principle, the difference between people with and without disabilities is not significant*; *People with disabilities are rarely successful in mainstream society* [Reversed]).

An exploratory factor analysis using a maximum likelihood extraction and direct oblimin rotation revealed two factors accounting for 57% of the variance. One item had a small ($< .2$) loading on both factors and was removed (see Appendix B for order of item removal). Because the measure was expected, a priori, to consist of a single factor, I removed two items that accounted for one of the two factors (ostensibly because they both were reversed scored). The final 3 items resulted in a single factor solution that continued to account for 57% of the variance. Reliability analysis indicated a lower than acceptable reliability ($\alpha=.62$), however removing an item improved reliability considerably ($\alpha=.72$; $M=3.16$; $SD=1.52$). The final 2-item composite measure was normally distributed.

Additional measures. The same measures of perceived pervasiveness of discrimination, cognitive alternatives to the status quo, and perceived illegitimacy of discrimination were used as in Study

¹². Perceived pervasiveness of discrimination had good reliability ($\alpha=.90$; $M=5.28$; $SD=1.26$) and averaged scores were normally distributed. As in Study 1, the 3-item measure of cognitive alternatives to the status quo showed modest reliability ($\alpha=.59$). Again, the same item was removed, but it did not improve reliability considerably ($\alpha=.64$; $M=4.60$; $SD=1.30$).

Perceived illegitimacy of discrimination ($\alpha=.84$; $M=5.43$; $SD=1.00$) showed good reliability; however, an exploratory factor analysis revealed two factors rather than one as anticipated. Items 1, 4, and 5 were removed due to their high loadings on the second factor. The final set of 7 items accounted for 50% of the variance and had good reliability ($\alpha=.83$; $M=5.64$; $SD=1.05$). Averaged items were normally distributed.

Results

Personal characteristics. To account for possible covariates, I assessed the correlations between participant characteristics and primary outcome variable of interest (perceptions of discrimination as illegitimate). Age, gender, and income were significantly related to perceived illegitimacy of discrimination (see Table 6) and were therefore included as covariates in the analysis.

Model analyses. Initial examination of the relationships between variables of interest indicate significant relationships between the mediator variables (pervasiveness of discrimination, cognitive alternatives to the status quo, and permeability of group boundaries) and perceptions of discrimination as illegitimate and in the hypothesized directions (see Table 5). Moreover, there was a significant relationship between social model endorsement and perceived illegitimacy of discrimination ($r = .570$), but medical model endorsement did not show a significant relationship ($r = -.003$). Finally, social model endorsement was significantly related to pervasiveness of discrimination ($r = .484$) and cognitive alternatives to the status quo ($r = .450$), but not permeability of group boundaries ($r = -.112$). Medical model endorsement on the other hand, was not significantly related to pervasiveness of discrimination (r

² Disability group identification (Private collective self-esteem) was measured in Study 2 for exploratory purposes. Including it in the structural model did not contribute positively to the model fit statistics.

= -.024) or cognitive alternatives ($r = -.009$) but was related to permeability ($r = .243$). Measures of medical and social model endorsement were not significantly related to each other ($r = .016$).

While social (but not medical) model endorsement was significantly related to perceived illegitimacy of discrimination, but medical model endorsement still maintained a relationship with group boundary permeability, I elected to fit a structural equation model to the data (see Figure 4). The initial test of the model revealed a poor fit ($CFI=.72$), and the modification indices suggested there were issues with the underlying factor structure of the constructs included in the model. Group boundary permeability and perceived illegitimacy of discrimination items accounted for the factor structure issue. After correcting the underlying factor structure (addressed in the Study 2 measures section above), the hypothesized model had an acceptable fit with the data ($\chi^2(172)=336.73^{***}$; $CFI=.90$; $TLI=.88$; $RMSEA=.06$).

In line with SIT propositions, group boundary permeability ($\beta = -.39, p < .001$) and cognitive alternatives to the status quo ($\beta = .20, p = .030$) predicted perceived illegitimacy of discrimination (see Figure 4). However, perceived pervasiveness of discrimination did not predict illegitimacy appraisals ($\beta = .01$). Next, medical model endorsement predicted group boundary permeability ($\beta = .29, p = .009$), but not cognitive alternatives ($\beta = -.02, p = .876$) or pervasiveness of discrimination ($\beta = -.06, p = .550$). Medical model endorsement also failed to hold a direct relationship with perceived illegitimacy of discrimination ($\beta = .05, p = .510$). Social model endorsement predicted pervasiveness of discrimination, ($\beta = .99, p < .001$), cognitive alternatives to the status quo ($\beta = 1.06, p < .001$), and permeability of group boundaries ($\beta = -.31, p = .030$). Moreover, social model endorsement predicted perceived illegitimacy of discrimination ($\beta = .58, p = .003$).

The model also revealed several indirect effects. The relationship between social model endorsement and perceiving discrimination as illegitimate was mediated by perceived permeability of group boundaries ($r = .22, p = .035$) and cognitive alternatives to the status quo ($r = .12, p = .033$). There was also an indirect effect of perceived permeability of group boundaries on the relationship between medical model endorsement and perceived illegitimacy of discrimination ($r = -.11, p = .019$).

Discussion

Study 2 provides further support that PWDs perceived socio-structural reality is indeed important when it comes to perceiving discrimination as illegitimate. Independent of medical and social model endorsement, perceived permeability of group boundaries negatively predicted and cognitive alternatives to the status quo positively predicted perceptions of discrimination as illegitimate. Counter to SIT prediction (Tajfel & Turner, 1979; Jetten et al., 2013), and to Study 1 findings, perceived pervasiveness of discrimination had a null relationship with illegitimacy appraisals in the structural model.

PWDs' differential endorsement of social vs. medical model of disability also played a significant role in perceptions of socio-structural factors, though in different ways. For example, social model endorsement was positively related to cognitive alternatives to the status quo, perceived pervasiveness of discrimination, and was negatively related to permeability of group boundaries. Comparatively, medical model endorsement was negatively related to permeability but had no relationship with cognitive alternatives nor perceived pervasiveness. Finally, permeability of group boundaries mediated the relationship between both social and medical model endorsement and perceived illegitimacy of discrimination, while cognitive alternatives to the status quo only mediated the social model-perceived illegitimacy relationship. Pervasiveness of discrimination did not account for either relationship.

The non-significant relationship between medical model endorsement and perceiving discrimination as illegitimate was especially notable given that it countered one of the study's main hypotheses. Prior research, in fact, demonstrates that considering a medical model of disability promotes the legitimization of disability-based inequality (in a nondisabled sample; Dirth & Branscombe, 2017), so it is curious that the legitimizing function was not evident in this sample of disabled people. One explanation could be that while the medical model does not necessarily promote perceptions of discrimination as illegitimate, neither does it inhibit them. In other words, the medical model could act as a neutral baseline, and to the extent that one moves from this baseline to endorse more of a social model, they begin to perceive discrimination as illegitimate (Gill, 1997; Little, 2010; Schur, 1998; Swain & French, 2000).

One exception to the medical model's null findings was the indirect effect of group boundary permeability on the relationship between medical model and perceived illegitimacy of discrimination. Whereas the medical model did not predict pervasiveness of discrimination or cognitive alternatives to the status quo, it did increase PWDs' sense that group boundaries were permeable. This finding supports the medical model logic that it is possible and preferable to intervene at the level of the individual to mitigate disability-related limitations. This emphasis on individual-centered approaches to managing disability issues (i.e., remediation or rehabilitation) is emblematic of a social mobility strategy (SIT; Tajfel & Turner, 1979), and is predicated on the idea that one can leave the disability group with enough treatment and effort (Gill, 1997; Gilson, Tusler, & Gill, 1997). In sum, the conceptual relationship between permeability of group boundaries and the medical model logic is much closer than that of cognitive alternatives to the status quo and perceived pervasiveness of discrimination to the medical model logic. The latter constructs require more awareness and appreciation of intergroup status relations which is obfuscated by medical model logic.

The second unexpected finding was the failure of pervasiveness of discrimination to provide an indirect effect on the relationship between neither social nor medical model endorsement and perceived illegitimacy of discrimination. While social (but not medical) model endorsement did predict increased pervasiveness of discrimination, pervasiveness of discrimination did not predict perceptions of illegitimate discrimination, a finding that runs counter to SIT propositions (Jetten et al., 2013). It is notable that prior to fitting the hypothesized model to the data, the relationship between pervasiveness of discrimination and illegitimacy of discrimination was sizable ($r = .492$). The reason for this null effect could be that the variance accounted for by perceived pervasiveness of discrimination likely had significant overlaps with cognitive alternatives to the status quo and group boundary permeability, both of which were correlated with pervasiveness (r 's = .258 and -.328 respectively; see Table 5). However, more likely is the addition of social model endorsement in Study 2, which revealed a sizable relationship to pervasiveness of discrimination ($r = .484$).

Introduction to Study 3

Study 2 provides initial insights into the differential influence of disability model endorsement on PWDs' socio-structural beliefs and their subsequent perceptions of discrimination as illegitimate. One limitation of Study 2, however, is the inability to make a causal inference regarding the influence of disability model endorsement and perceptions of discrimination as illegitimate.

To improve upon Study 2, Study 3 seeks to provide an experimental test of the proposition that social vs. medical model logic differentially affects perceptions of discrimination as illegitimate via socio-structural beliefs. Considering the null effects of medical model endorsement on perceptions of discrimination as illegitimate, I simplified the operationalization of medical vs. social model endorsement to two primary dimensions: locus of disability-related difficulties and locus of responsibility for fixing those difficulties (Dirth & Branscombe, 2017; Smart & Smart, 2006). Regarding locus of disability-related difficulties, there is a clear-cut distinction between the medical and social models: The medical model locates difficulties internal to the person, in his/her impairment symptoms, whereas the social model locates difficulties external to the person, in his/her environment (Hughes & Paterson, 1997; Shakespeare, 2006). Locus of responsibility for fixing difficulties shows similar contrasts between the social and medical models. The medical model sees responsibility as located with the individual, in conjunction with his/her family and a medical provider, whereas the social model sees responsibility more in society, specifically with policy makers and civil servants (Shakespeare, 2006). Situating the medical and social models on a spectrum, enables a manipulation design that would potentially lead to contrasting effects on the outcome variables of interest.

Overview of Study 3

The primary goal of Study 3 was to experimentally replicate the findings of Study 2, again using a sample of PWDs. The first hypothesis for Study 3, derived from SIT (Tajfel & Turner, 1979), suggests that once again socio-structural beliefs (group boundary permeability, cognitive alternatives to the status quo, and pervasiveness of discrimination) will predict perceptions of discrimination as illegitimate. Following theorizing from disability activists and researchers (e.g., Dirth & Branscombe, 2017; Hahn, 1988; Little, 2010) the second hypothesis asserts that participants in the social model condition will

perceive greater illegitimacy of discrimination than those in the medical model condition. Finally, socio-structural beliefs will mediate the relationship between condition and perceiving discrimination as illegitimate.

Method

Following a similar recruitment procedure as in Studies 1 and 2, Participants ($N=184$) were recruited from Amazon's Mechanical Turk and paid \$2.00 for their participation in the study³. Participants were recruited based on their identification as a person with a disability and were asked before and after the study for participants to reaffirm their status as a person with a disability. Fifteen participants were excluded from analysis for indicating they were *not* disabled on the verification questions. See Table 1 for the demographic features of the sample.

Participants were told this was a study about their experiences with and opinions about disability, and they were randomly assigned to either the medical ($n = 87$) or the social ($n = 82$) model condition. In the medical model condition, participants were asked to first, think about how their impairment condition caused the difficulties in their everyday life, and second, to think about how they worked with a medical or rehabilitation professional to mitigate these difficulties. In the social model condition, participants were asked to first, think about how their environment, both physical and social, caused the difficulties in their everyday life; and second, think about how the broader society could help mitigate these difficulties (see Appendix C for full text). Following each of the two prompts in both conditions, participants were asked to write down their reflections in a text box.

Measures

Manipulation checks. First, open-ended answers were checked for relevance to the prompt. I also measured participants' perceptions of the locus of disability difficulties on a scale from -10 (entirely inside the person) to 10 (entirely outside the person), and where the responsibility lay for fixing disability

³ The study posting was set as unavailable for those who participated in Studies 1 and 2

limitation on a scale from -10 (entirely with the individual) to 10 (entirely with the broader society) to verify a condition effect on the themes of interest.

Group boundary permeability. Because the construct showed factor structure problems in Study 2 and construct validity issues more generally, a different measure of permeability was used for Study 3⁴. I adapted Armenta and colleagues' (2018) measure of membership permeability, for a disabled sample. Membership permeability is defined as “the perceived objective or subjective possibility of changing group membership” (p. 3). Participants rated their agreement using a 1-7 Likert type scale to various *constraints* to changing group membership (e.g., “People with disabilities and nondisabled people are fundamentally different”; “No matter what effort I make, I will never be viewed as a nondisabled person”; See Appendix C for complete list of items, noting that higher scores indicate group boundary *impermeability*). 2 items were removed because of poor fit with the factor structure. The final 8-item composite showed good reliability ($\alpha=.89$; $M=4.10$; $SD=1.41$) and averaged scores were normally distributed.

Other measures. The same measure for pervasiveness of discrimination, cognitive alternatives to the status quo, and illegitimacy of discrimination were used as in Study 2. The items for pervasiveness of discrimination ($\alpha=.85$; $M=5.26$; $SD=1.26$) and perceived illegitimacy of discrimination ($\alpha=.85$; $M=5.39$; $SD=1.02$) had good reliability. Items for cognitive alternatives to the status quo had modest reliability ($\alpha=.64$; $M=4.84$; $SD=1.11$). Averaged items for each measure were normally distributed.

Results

Manipulation check. Post-manipulation open-ended responses were examined as a check to see if participants were engaging with the prompt. Seventeen participants were dropped from further analysis because their responses showed a lack of attentiveness (e.g., they wrote random characters in the textbox).

⁴ I also verified the 2-item measure from Study 2, prior to the analyses, to check its relationship to Armenta and colleagues' (2017) measure. There was a substantial correlation between the two measures ($r = .613$) and including Study 2's permeability of group boundaries measure in a reliability analysis with the items from Study 3 did not reduce the alpha level. Finally, a composite of Study 2 items held similar relationships with all the variables of interest as Armenta and colleagues' measure. Therefore, for the sake of parsimony, only the Armenta et al. (2017) measure was used in the final analysis.

Locus of disability difficulties varied significantly based on condition (Medical $M=.160$, $SD=.575$; Social $M=2.33$, $SD=.60$; $F(1, 144)=6.837$, $p = .01$, $\eta^2=.046$), where higher numbers represent greater *externalization* of disability difficulties. Likewise, responsibility for fixing also varied significantly by condition (Medical $M=.467$; $SD=.576$; Social $M=2.768$, $SD=.601$; $F(1, 144)=7.642$, $p = .001$, $\eta^2=.051$), where higher numbers indicate a greater *socialization* of responsibility for fixing disability difficulties. Both results suggest the manipulation had the intended thematic impact.

Personal characteristics. To account for possible covariates, I assessed the correlations between participant characteristics and the outcome variable of interest. Age, gender, and income were significantly related to perceived illegitimacy of discrimination (see Table 8) and were therefore included as covariates in subsequent analysis.

Mediating variables. Regression analysis predicting perceived illegitimacy with the socio-structural belief constructs revealed a significant effect of pervasiveness of discrimination ($\beta = .319$, $p <.001$) and cognitive alternatives to the status quo ($\beta = .262$, $p <.001$), but permeability of group boundaries was not significant ($\beta = .003$, $p = .67$),

Condition effects. Analysis of variance for the perceived illegitimacy of discrimination variable did not reveal a significant effect of condition (Medical $M=5.40$, $SD=1.24$; Social $M=5.29$, $SD=1.10$; $F(1, 149)=.017$, $p = .89$, $\eta^2=.000$), even when controlling for age, gender, and income level. Similarly, analysis of variance for each of the mediators of perceived illegitimacy of discrimination revealed non-significant condition effects on pervasiveness of discrimination (Medical $M=5.21$, $SD=1.38$; Social $M=5.33$, $SD=1.11$; $F(1, 149) = 1.63$, $p = .20$, $\eta^2=.01$), cognitive alternatives to the status quo (Medical $M=5.21$, $SD=1.19$; Social $M=5.19$, $SD=1.18$; $F(1, 149) = .167$, $p = .68$, $\eta^2=.001$) and impermeability of group boundaries (Medical $M=3.81$, $SD=1.44$; Social $M=4.40$, $SD=1.43$; $F(1, 148) = 1.75$, $p = .07$, $\eta^2=.012$).

Exploratory analyses. Because the manipulation of disability model focus was not robust enough to shift participant perceptions of the illegitimacy of discrimination, exploratory analysis was conducted to see if the manipulation check items could operate as the predictor variable, similarly to the Study 2 model. First, I created a “disability model focus” index of the two manipulation check items

($\alpha=.80$; $M = 1.50$, $SD = 4.56$), then I examined the direct effect of this index on perceived illegitimacy of discrimination. Controlling for age, gender, and income level, disability model focus had a direct effect on illegitimacy of discrimination ($b = .05$, $p = .015$). Because model focus had a significant direct effect, I moved to see if it also predicted the hypothesized mediating variables. Indeed, responsibility for fixing predicted impermeability of group boundaries ($b = .07$, $p = .005$), pervasiveness of discrimination ($b = .05$, $p = .02$), and cognitive alternatives to the status quo ($b = .06$, $p = .008$). Finally, mediation analysis using PROCESS in SPSS (Hays, 2013) revealed a full mediation of the relationship between model focus and perceived illegitimacy of discrimination (Total indirect effect $b = .053$, $SE = .022$, 95% CI [.010-.096]), with a significant indirect effect of cognitive alternatives to the status quo ($b = .017$, $SE = .009$, 95% CI [.003-.038]) and pervasiveness of discrimination ($b = .014$; $SE = .008$, 95% CI [.003-.035]), but not impermeability of group boundaries ($b = -.004$; $SE = .006$, 95% CI [-.020-.003]; see Figure 3 for all path coefficients). The cognitive alternatives and the pervasiveness indirect effects were not significantly different from each other in size.

Discussion

Study 3 provides an experimental test of whether disability model focus impacts PWDs' perceptions of discrimination as illegitimate. Findings indicated a null effect of condition on perceived illegitimacy of discrimination and the anticipated mediating role of socio-structural beliefs. The experimental manipulation did have the expected effect on the manipulation check measures of locus of disability limitations and 'who is responsible for fixing limitations', so it is possible that the manipulation was not sufficiently robust to drive a change in illegitimacy appraisals, especially given that neither did it have a significant effect on cognitive alternatives to the status quo, pervasiveness of discrimination, nor impermeability of group boundaries.

Exploratory analyses of the relationship between the manipulation check measures and the outcome variables revealed that an index of disability model focus predicted illegitimacy appraisals. To the extent that participants' perceptions aligned with a social model focus (i.e., externalized limitations and socialized responsibility), they were more inclined to view discrimination as illegitimate. Moreover,

this relationship was entirely accounted for by the indirect effects of perceived pervasiveness of discrimination and cognitive alternatives to the status quo (but not impermeability of group boundaries). This finding partially replicates the model tested in Study 2, the difference being that that pervasiveness of discrimination was not a mediator in the previous study whereas permeability of group boundaries was a mediator. This finding is likely an artifact of operationalizing and measuring the disability model, not as individual differences in medical and social model endorsement, but as a bipolar measure of perceptions regarding the locus of limitations and responsibility for fixing limitations. The latter measurement, used in Study 3, has less conceptual overlap with pervasiveness of discrimination than did Study 2's items.

In sum, the exploratory analyses suggest that a causal relationship between the disability model foci and perceived illegitimacy of discrimination cannot be fully dismissed. The manipulation shifted participants' perceptions of locus of difficulties and who was responsible for fixing disability difficulties, it simply was not robust enough to elicit the hypothesized effects on dependent variable of interest. It is notable that Dirth and Branscombe (2017) showed significant condition effects of disability model themes in their investigation of the influence of disability models on support for pro-disability policy. One significant difference between Study 3 of this project and their study is that their study featured an exclusively nondisabled sample. It is likely that nondisabled participants are less likely to have nuanced views of disability issues and could be more influenced by an emphasis on specific (social vs. medical) model themes. Relatedly, in Dirth and Branscombe's manipulation, they had participants read an ostensible research report about the nature of disability-related limitations as either internal (medical) or external (social) to a disabled person. In Study 3 of this present project, participants were asked to reflect on the nature of *their personal* limitations, focusing on the internal (medical) or external (social) aspects. This personal reflection could have created more variance in how model themes are interpreted compared to the straightforward research report from Dirth and Branscombe's model manipulation. Finally, Study 3's manipulation included the theme of 'responsibility for fixing disability difficulties' that was not present in the Dirth and Branscombe manipulation. This addition was intended to compensate for potential variability in participants' reflections. For instance, if a participant could not think of ways in

which their limitations were a function of their physical or social environment (e.g., chronic pain), they could possibly still generate socially-based intervention ideas. It is unclear whether this addition strengthened or weakened the manipulation effect, though it is possible that it contributed to participant fatigue, given they had an additional open-ended response to complete.

General Discussion

The primary objective of this research was to provide a better understanding of when people with disabilities will perceive negative differential treatment against their group as illegitimate. One way in which this project approached this objective was by testing the social identity theory (SIT) proposition that socio-structural beliefs are a critical determinant of illegitimacy appraisals for stigmatized group members (Jetten et al., 2013; Tajfel & Turner, 1979). Specifically, stigmatized group members' beliefs about the relative ease with which they can move in and out of their group (permeability of group boundaries), the frequency and prevalence of discrimination their group experiences (pervasiveness of discrimination), and the possibilities for a more equitable future (cognitive alternatives to the status quo) are the primary subjective factors that dictate strategies for coping with a stigmatized identity.

Across three studies, findings provide a conceptual replication of SIT predictions that socio-structural beliefs predict perceptions of discrimination as illegitimate, adding to the literature the perspectives of people with disabilities. The caveat to this is that only cognitive alternatives to the status quo was significant across all three studies, whereas pervasiveness of discrimination was significant in Studies 1 and 3, and group boundary permeability was only significant in Study 2. Regardless, this should not diminish the importance of the convergent evidence in this project that provides a suitable starting point for fleshing out PWDs' beliefs about the socio-structural relations between disabled and nondisabled group members.

More generally, the findings across the three studies further validate an important premise of the social identity approach to disability (Dirth & Branscombe, 2018)—that disability research is enriched by the theoretical breadth and depth of the social identity approach. Situating disability within the social identity approach, as this project does, broadens the phenomena of interest for disability psychology

researchers and places an emphasis on the role of the disability community to co-construct what it means to be a part of the disability category. At the same time, the SIA potentially benefits from a consideration of disability as an intergroup phenomenon. Namely, the unique contours and contradictions evident within the disability community bring into relief underexplained social identity processes that are germane to many intergroup contexts. For example, because the disability community is neither intergenerational nor necessarily consolidated geographically, it relies almost entirely on discursive strategies (i.e., social model emphasis) and organizational participation (i.e., disability advocacy organizations) to engender a sense of shared experience across a multitude of individual impairment conditions (Darling, 2003). Likewise, the relatively recent emergence of the disability community, its coalitional features (i.e., numerous subgroups organized by impairment type), and the tension between personal and group-based interpretations of disability experience each reveal underexplored areas of the social identity approach.

Significance of disability models. The second approach taken to achieve this project's primary objective was to leverage Disability Studies' insights about the dynamic, sociocultural nature of disability (Linton et al., 1995; Dirth & Branscombe, 2018). Specifically, I was interested in the differential influence of disability models on PWDs' beliefs about their social structure. After all, disability researchers and scholars, especially those from Disability Studies, have noted the emergence of the social model of disability as a crucial premise of disability rights movement (Fleischer et al., 2012; Longmore & Umansky, 2001; Shakespeare, 2006). Concomitantly, pushing back against medical model logic has long been a priority for disability activists and advocates, given the contention that the medical model engenders stigmatization and exculpates society from any responsibility for removing barriers to full social participation for PWDs (UPIAS, 1979). However, investigations that empirically test the psychological underpinnings of these disability paradigms remain sparse.

Studies 2 and 3 seek to correct this gap in the literature and provide initial support to the fact that social model logic does indeed shift PWDs' beliefs about the social structure. In Study 2, endorsement of social model logic predicted perceptions of discrimination as illegitimate as a function of increased

cognitive alternatives to the status quo and decreased perceptions that group boundaries were permeable. Endorsement of medical model logic, however, did not directly predict illegitimacy of discrimination, though the medical model did predict greater group boundary permeability which served as an indirect effect on the relationship between medical model endorsement and perceiving discrimination as illegitimate.

Experimental manipulation of disability model did not have a significant effect on perceptions of discrimination as illegitimate in Study 3. Neither were there condition effects on socio-structural beliefs. However, a positive take-away from Study 3 is the correlational extension of Study 2's findings. Indeed, disabled participants in Study 3 increased their perceptions of disability discrimination as illegitimate to the degree that they emphasize social model logic—externalizing the source of disability-related limitations and socialize responsibility for fixing those limitations. Like Study 2, Study 3 provides evidence that the link between the social model and perceiving discrimination as illegitimate is explained by a shift in socio-structural beliefs, namely pervasiveness of discrimination and cognitive alternatives to the status quo, and not permeability of group boundaries as in Study 2.

More generally, the present findings add to the recent empirical findings that disability models are much more than basic conceptual frameworks through which academics can think about disability. Embedded within these models are potent psychological tools for PWDs to make sense of their experiences, both personally and in relation to others. Disability models seem to provide differential information (i.e., medical vs. social) about what it means to have a disability, how to feel about disability, how to manage disability-related limitations, and who constitutes a resource for negotiating disability limitations. However, because disability models were originally articulated and developed in disability activism and later in Disability Studies scholarship, social psychology has been slow to operationalize and empirically consider the role disability models play in the subjective experience of disability. This project is an initial foray into this relatively uncharted territory and signals the generative potential for research on disability models as psychological constructs.

Limitations and future directions

Model Manipulation. There are several caveats that must be addressed for future research on this topic. The most significant limitation in this project was the non-significant experimental effects of the disability model manipulation. Because the manipulation check index of disability model foci significantly varied by condition, and this index showed the hypothesized predictive effects with other variables of interest, it is difficult to dismiss outright a potential causal relationship between disability model focus and perceived illegitimacy of discrimination. It would be worthwhile for future research to continue to test different framings of disability models to discern when the social vs. medical model of disability has a causal effect on perceptions of discrimination as illegitimate.

One way to change the manipulation would be to represent disability model content in a “research report” like in Dirth and Branscombe (2017) rather than a self-reflection activity. In other words, a manipulation could provide participants with information generated from an ostensible expert that prevents unnecessary variability in participant reaction and interpretation that is found in a self-reflection activity. Additionally, an induction that speaks about the disability community more broadly, and not as a reflection of personal experience, will help to prevent an inadvertent priming of personal rather than group identity. Previous research involving PWDs has noted that this type of priming can exert significant differences in interpretation and reaction to disability-related outcomes (Wang & Dovidio, 2011). To the degree that the activity used in the manipulation personalized one’s experience with disability, some degree of interference with subsequent evaluations of *intergroup* variables could be expected (i.e., sociostructural beliefs) thereby dampening the overall effect of the manipulation. Future studies would do well to account for a group vs. individual-level interpretation of disability in the manipulation.

Mechanical Turk sample. Another potential limitation of this project could be the interpretability of some of the results given the sample obtained across the three studies. Initially this project was thought to benefit from sampling PWDs from the MTurk service, given that it could provide a more representative sample of ages, impairment types, and orientations to disability than would be present in samples collected from impairment specific organizations (e.g., Little People of America; Autism Speaks), disability advocacy organizations (e.g., Centers for Independent Living; ADAPT), or consumers

of disability services at colleges and universities. Much of the burgeoning research in disability social identity, in fact, has recruited disabled participants from listservs of such organizations (e.g., Bogart et al., 2017; Bogart, Lund, & Rottenstein, 2018.; Darling & Heckert, 2010; Hahn & Belt, 2004; Nario-Redmond et al., 2012; Nario-Redmond & Oleson, 2016).

While an MTurk sample widens the array of disability experiences and orientations under investigation, it could also lead to interpretational ambiguity surrounding some of the null results. At the most basic level, participants in the MTurk sample, relative to a disability organization listserv, may be taking part in the research for different reasons, thereby offering less attention and care in their responses. This is not to say that MTurk workers are inherently less conscientious than other populations (see Hauser & Schwartz, 2015), but participants being recruited from a disability listserv may bring a different motivation into participation as a function of where they are being recruited from (i.e., addressed as a member of this organization).

Next, recruitment from both impairment-specific and disability advocacy organizations could produce different results when it comes to participants' interpretation and responses to the variables manipulated and measured in this project. As Fernández, Branscombe, Gómez, and Morales (2012) demonstrated in their study of Little People's stigma management strategies, the disability organization one belongs to provides important information about how the disability should be interpreted and acted upon. The Mturk sample, to the degree that is generally unaffiliated (70%), may have a wider range of understandings of disability-related issues, including the social and medical model constructs, and this increased variability could have influenced the potency of the manipulation in Study 3. Study 2 findings further support this contention given the nonsignificant relationship evidenced between social and medical model endorsement measures, a finding that runs counter to articulations of the two models' oppositional relationship to one another (Smart & Smart, 2006). Even so, this lack of affiliation could be interpreted as a potential strength of this study given that, even in a relatively apolitical sample of PWDs, across three studies the data matched study predictions.

Finally, using an MTurk sample amplifies more basic challenges to social psychological research using a sample of PWDs (Becker, Roberts, Morrison, & Silver, 2004; Kitchen, 2000). For example, in a quantitative study, it is difficult to discern whether impairment type is acting as a confounding variable, especially when participants indicate they have multiple impairment conditions. A participant who categorizes herself as physical disability could be 68 years old experiencing arthritis for the past 8 years, a 38-year-old wheelchair user who has had her disability since childhood, or a recently paralyzed 21-year-old (all cases from Study 3's sample). This is not to mention differential amounts of secondary symptoms (pain, fatigue, depression) impacting a PWD's experience. This ambiguity, to some degree, would not be as pervasive if one were recruited from an organization that is affiliated with an impairment sub-group (e.g., Little People of America), because one's self-categorization with the disability group, even a sub-group, would be further clarified by the mission of the group, and the psychological distance between people coming from the same sub-group might be minimized.

In sum, future research would do well to replicate Studies 2 and 3 using samples of PWDs from a disability organization listserv and to replicate prior disability social identity research using an unaffiliated sample. Such efforts could provide important information regarding the capacity of disability organizational affiliation to shape how one thinks about disability and to generalize extant work to a more diverse disabled population.

Disability identification. The role of disability group identification in the context of socio-structural beliefs needs also to be fleshed out in future research as it was not an essential feature of the current project. One avenue for future research will be to attend to the *relative* influence of disability group identification as a predictor versus an outcome of perceptions of illegitimate discrimination. Group identification is likely to serve a dual function, shaping perceptions of an intergroup reality, and subsequently getting bolstered by these perceptions (e.g., Doosje et al., 2002). Research that is conscious of this dynamism of disability group identification would do well to conduct more longitudinal research on disability identity as a function of participation in disability advocacy or other disability organizations, especially for young people with disabilities and those with newly acquired impairments. Such work will

provide much needed insights about how social identity more generally is formed and maintained over time and in relation to other group memberships (Reicher et al., 2010).

Second, future research must take time to identify the content of disability group identification. Study 1 provided initial evidence that the ‘centrality’ of disability group membership holds a different set of relationships to socio-structural beliefs than does ‘affective attachment’ to the disability group. This difference is likely an artifact of differences between the ‘cognitive’ aspects of social identity explored in self-categorization theory (Turner et al., 1987) and the ‘affective’ aspects more relevant to social identity theory (Tajfel & Turner, 1979). Another distinction to be discovered in future work might be between affirmation or pride focused group identity (Bogart et al., 2017; Swain & French, 2000) and a more politicized collective identity (Simon & Klandermans, 2001) that is to be found within disability activist domains (Anspach, 1979; Putnam, 2005; Schur, 1998). Addressing how, when, and where these different formations of disability identification are likely to emerge, and their relative influence on subsequent collective coping strategies (social creativity vs. social competition), will provide a significant contribution to work in the social identity approach to disability.

Finally, future research would also do well to explore other aspects of the medical and social models that may be more closely related to disability identity formation. For instance, one important contrast that was not present in this project was the tragedy (medical model) vs. affirmation (social model) orientation to disability (Gill, 1997; Swain & French, 2000). The valence of disability experiences undoubtedly provides its own important influences beyond the locus of disability-related limitations and/or the ultimate responsibility for fixing those limitations. Specifically, one could expect valence of disability experience to be closely linked to affective attachment to the disability community (disability identification; Swain & French, 2000), though that linkage could provide more clarified ‘us’ vs. ‘them’ interpretations of one’s social structure.

Measurement of group boundary permeability. While perceived pervasiveness of discrimination and cognitive alternatives to the status quo were measured the same way across the three studies, the permeability of group boundaries construct was measured differently from one study to the

next. While the rationale for changing the operationalization and measurement of this construct was to improve construct validity, it presents a serious challenge to interpreting results, either for or against the a priori predictions. The initial operationalization of group boundary permeability, a function of impairment characteristics that make it more difficult for a PWD to approximate nondisabled status, neglects the idea that group boundary permeability is a subjective belief about intergroup relations rather than material reality of the individual. Changing the permeability measure in Studies 2 and 3 improved construct validity, though future research should continue to validate the Armenta et al., (2017) measurement using disability samples.

More generally, group boundary permeability constitutes an important challenge for disability researchers and social identity theorists more generally. One unique contour of disability group membership is that most PWDs have experiences working with medical and rehabilitation providers to mitigate distressing symptoms of their impairment (e.g., surgery, pain management, therapy). An important direction for future research will be to document PWDs' orientations to such treatment through the prism of permeability of group boundaries. For instance, to what degree do members of the disability community use medical, rehabilitation, and technological means to distance themselves from the stigmatized identity, and do orientations to treatment vary as a function of social identification strength? Concomitantly, how does awareness of medical and technological innovation and one's material resources that could be used to access these innovations promote permeability beliefs? Like group boundary permeability's hypothesized function, across all three studies, income and/or higher education were negatively related to perceptions of illegitimate discrimination. This supports the idea that material resources are important for mainstream access for PWDs (Drum et al., 2005; Kinne et al., 2004) and provide more opportunities to matriculate into mainstream society (Block, Balcazar, & Keys, 2002).

The second unique contour of disability group membership is the permeability of group boundaries from high status to low status. Most research into stigma management (e.g., race, gender) takes for granted a notion of group boundary permeability that goes from low status (stigmatized) to high status (non-stigmatized). Far fewer investigations consider the impact of permeability of group

boundaries from high to low status, especially for the stigmatized group member⁵. An important direction for future research will be to flesh out how PWDs' perceptions of group boundary permeability might also include nondisabled people *joining* the group. This alternative notion of bi-directional group boundary permeability is likely to have distinct effects compared to the uni-directional operationalization. To what degree does this awareness of downward permeability threaten the distinctiveness of group membership and is this relationship different for high vs. low group identifiers? Conversely, might this awareness be a resource for disabled group members and function as a form of social creativity? Indeed, the term 'TABs' (temporarily able-bodied) has resonated for some within the disability community, perhaps lending credibility to the positive distinctiveness function of downward permeability. Regardless of proposed effect, this area of work could contribute not only to a better understanding of disability as a collective experience, but it can fill an important gap in the SIT literature.

Conclusions

Even when facing significant headwinds, disabled activists like Judith Heumann readily identify exclusionary treatment toward PWDs as unjust and work collectively to contest it. Situated within the broader social identity approach to disability (Dirth & Branscombe, 2018), this research provides a crucial first step to better understand the social psychological factors relevant to this process of disability empowerment. First, it is PWDs' beliefs about group boundary permeability, the pervasiveness of discrimination against the group, and whether the low status position of the disabled group is a foregone conclusion, that predicts when discrimination will be perceived as unacceptable. Second, disability models, especially the social model, long heralded as a catalyst for the disability rights movement, indeed play an important role in shaping PWDs beliefs about the structural relations between groups. Combined, the findings of this study suggest that, to the degree that disability advocacy and rights-based organizations leverage social model rhetoric to frame issues that affect the disability community (e.g.,

⁵ Research using a minimal groups paradigm shows that high status group members awareness that they could fall into the lower status group increases their satisfaction and strength of affiliation with the higher status group (Ellemers, 1993; Ellemers et al., 1990).

health care, employment, housing), they are agents in the creation of a distinct intergroup reality for their constituents. Not only does this reality reduce the ambiguity of what is acceptable treatment toward the group, but as evidenced in real-world case studies for the past 30 years, it undoubtedly a sturdy base for robust political engagement and collective action effort for members of the disability community for years to come.

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Tables and Figures

Table 1. Demographic characteristics of study participants.

Characteristic	Study 1 N=339	Study 2 N=190	Study 3 N=150
Age	<i>M</i> =36.37; <i>SD</i> =12.6	<i>M</i> =35.96; <i>SD</i> =12.6	<i>M</i> =35.02; <i>SD</i> =12.02
Gender			
<i>Male</i>	45.7%	44.4%	60.7%
<i>Female</i>	53.1%	55.0%	39.3%
<i>Other Gender</i>	.9%	.6%	0%
Ethnicity (How would you describe your ethnicity?)			
<i>American Indian/Native American</i>	1.5%	2.9%	3.3%
<i>Asian/Asian American</i>	1.5%	6.4%	3.3%
<i>Black/African American</i>	8.8%	5.3%	20.7%
<i>Hispanic/Latino</i>	6.7%	8.8%	2.7%
<i>White/Caucasian</i>	79.2%	75.4%	66.0%
<i>Multiracial</i>	2.3%	1.2%	4%
Socioeconomic Status <i>How would you describe the family income in your primary household relative to other households in the USA?(1=Extremely Low; 4= About the same; 7= Extremely High)</i>	<i>M</i> =3.47; <i>SD</i> =1.40	<i>M</i> =3.46; <i>SD</i> =1.48	<i>M</i> =4.10; <i>SD</i> =1.68
Education level (What is your highest level of education?)			
<i>Less than G.E.D./High School Equivalency</i>	2.6%	1.2%	1.3%
<i>At least G.E.D./High School Equivalency</i>	33.7%	28.7%	17.3%
<i>At least Associates Degree</i>	22.9%	21.1%	18.0%
<i>At least Bachelor's Degree</i>	32.1%	38.6%	50.0%
<i>At least Master's Degree</i>	8.5%	10.5%	13.3%
How would you describe the type of disability you have?			
<i>Deaf/Hard of Hearing</i>	7%	10.5%	10.7%
<i>Blind/Low Vision</i>	5%	4.7%	8.0%
<i>Psychological/Emotional</i>	21.1%	49.7%	45.3%
<i>Behavioral</i>	10.6%	4.7%	15.3%
<i>Intellectual/Developmental</i>	1.8%	.6%	2.0%
<i>Physical/Orthopedic</i>	28.7%	15.2%	40.0%
<i>Cognitive/Learning</i>	3.8%	1.2%	12.7%
<i>Brain Injury</i>	3.5%	1.2%	7.3%
<i>Chronic Illness</i>	13.8%	8.8%	9.3%
<i>Autism Spectrum</i>	4.7%	3.5%	3.5%
<i>Multiple*</i>	NA	43.1%	60.0%
How would you describe the type of disability you have?			
Congenital (had from, or soon after, birth)	33.4%	26.9%	30.0%

Acquired during your lifetime	66.6%	73.1%	68.7%
Proportion of life having a disability “For how long have you had a disability?”	$M=19.45$; $SD=12.88$	$M=19.58$; $SD=11.70$	$M=19.25$; $SD=14.53$
Proportion of Life	$M=.574$; $SD=.356$	$M=.579$; $SD=.328$	$M=.562$; $SD=.381$
Visibility of Disability			
Visible/Easily noticed by others	30.5%	† $M=2.62$; $SD=1.34$	† $M=2.97$; $SD=1.38$
Non-visible/Not easily noticed by others	69.5%		
Do you belong to an organization, group, or club whose purpose is disability- related?			
Yes	23.5%	28.1%	36.7%
No	76.2%	71.3%	63.3%
How often do you interact with other persons who have a disability?			
At least once a day	14.1%	15.2%	12.1%
Multiple times per week	26.1%	29.2%	31.3%
Multiple times per month	28.2%	22.2%	28.7%
Multiple times per year	19.9%	14.6%	18.0%
Less than once a year	11.4%	17.5%	9.3%

Note: *Participants permitted to select multiple disability categories in study 2. † Visibility was measured as a continuous variable in study 2.

Table 2. *Correlations among dependent variables and impairment characteristics in Study 1.*

	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
1. Illegitimacy of discrimination	--				
2. Private collective self-esteem	.480**	--			
3. Importance collective self-esteem	.468**	.358**	--		
4. Pervasiveness of discrimination	.121*	.104†	.323**	--	
5. Cognitive alternatives to the status quo	.340**	.416**	.390**	.467**	--
Visibility	.032	.063	-.016	-.087	.010
Concealability	-.053	-.024	-.105†	-.055	.066
Disruptiveness	.148**	-.181**	-.121*	.285**	-.030
Proportion of life with a disability	-.154**	.082	.133*	.081	.141*

† $p < .10$ * $p < .05$, ** $p < .01$

Table 3. Correlations among dependent variables, impairment characteristics, and demographic characteristics in Study 1.

	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
Illegitimacy of discrimination	.210**	.248**	-.230**	-.116*	.037
Private collective self-esteem	-.081	.011	.084	-.040	-.098
Importance collective self-esteem	-.188**	-.079	.081	-.034	-.133
Pervasiveness of discrimination	.053	.293**	-.193**	.028	-.193**
Cognitive alternatives to the status quo	-.114*	-.018	.089	-.009	.033
Visibility	-.089	-.057	-.009	.033	.039
Concealability	-.188	.027	.069	-.087	-.021
Disruptiveness	.168**	.198**	-.200**	.071	-.034
Proportion of life with a disability	-.321**	.008	.193**	-.018	-.059

1=Age, 2=Gender (1=Male, 2=Female), 3=SES, 4=Education, 5=Ethnicity (0=Non-White, 1=White); † $p < .10$ * $p < .05$, ** $p < .01$

Table 4. Stepwise regression model predicting perceived illegitimacy of discrimination

Predictor Variable	Step 1		Step 2		Step 3		Step 4		Step 5				
	<i>b</i>	<i>SEb</i>	<i>b</i>	β	<i>b</i>	<i>SEb</i>	β	<i>b</i>	<i>SEb</i>	β			
Personal characteristics													
<i>Age</i>	.016	.005	.182**	.180**	.015	.005	.173**	.017	.005	.187**	.014	.005	.158**
<i>Gender</i>	.466	.114	.214**	.204**	.290	.114	.133*	.311	.113	.143**	.341	.115	.115**
<i>Education</i>	-.130	.058	-.121*	-.115*	-.143	.056	-.133*	-.150	.056	-.140**	-.164	.056	-.153**
<i>Family income</i>	-.114	.044	-.143*	-.154**	-.083	.043	-.104†	-.085	.042	-.106*	-.066	.043	-.083
Disability identification													
<i>Private</i>			.152	.175**	.130	.052	.149*	.105	.053	.120*	.097	.054	.112†
<i>Importance</i>			-.049	-.062	-.071	.047	-.091	-.056	.047	-.072	-.058	.048	-.074
General pervasiveness of discrimination													
Cognitive alternatives to status quo					.226	.046	.262**	.209	.047	.242**	.214	.048	.248**
Permeability of group boundaries								.100	.047	.109*	.111	.048	.112*
Permeability of group boundaries													
<i>Visibility</i>											-.185	.135	-.076
<i>Concealability</i>											.047	.036	.076
<i>Disruptiveness</i>											-.004	.048	-.005
<i>Duration</i>											-.267	.169	-.085
ΔR^2		.138**				.023*			.058**	.011*			.013

Note: Gender: 0=Male, 1=Female; Visibility: 0=Not visible/Not easily noticed, 1=Visible/Easily noticed; Concealability= "I can easily conceal my disability"; Duration = Time having a disability/Age (e.g., Congenital = 1.00). † < .10, * < .05, ** < .01; *b* = unstandardized coefficient, *SEb* = standard error, β = standardized coefficient beta.

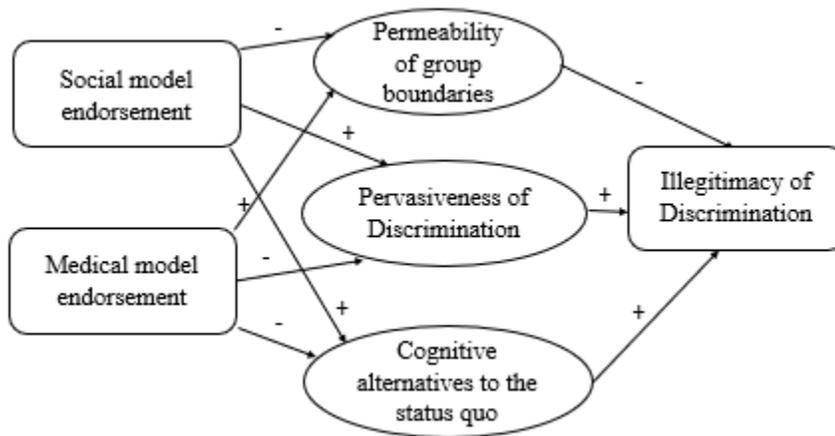


Figure 1: Model to be tested in Study 2.

Table 5. *Correlations among dependent variables in study 2.*

	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>
1. Social Model Endorsement	--					
2. Medical Model Endorsement	.016	--				
3. Illegitimacy of discrimination	.570**	-.003	--			
4. Pervasiveness of discrimination	.484**	-.024	.492**	--		
5. Cognitive alternatives to the status quo	.450**	-.009	.380**	-.328**	--	
6. Permeability of group boundaries	-.112	.243**	-.315**	.029	-.011	--

† $p < .10$ * $p < .05$, ** $p < .01$

Table 6. *Correlations among dependent variables and demographic characteristics in Study 2.*

	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>
Social Model endorsement	-.030	.192*	.021	-.061	.087	.056	-.064
Medical model endorsement	-.172*	.025	.131†	-.072	-.196**	.087	-.123
Illegitimacy of discrimination	.207**	.253**	-.160*	-.099	.128	-.085	.126
Pervasiveness of discrimination	.110	.124	-.141†	-.066	.090	.009	.226**
Cognitive alternatives to the status quo	.007	.119	.082	.034	.125	.047	-.123
Permeability of group boundaries	-.170*	-.144†	.437**	.180*	-.130†	-.136†	-.420**

1=Age, 2=Gender, 3=SES, 4=Education, 5=Ethnicity (0=Non-White, 1=White), 6=Proportion of life, 7=Visibility (1(not easily visible)-5(easily visible)), † $p < .10$ * $p < .05$, ** $p < .01$

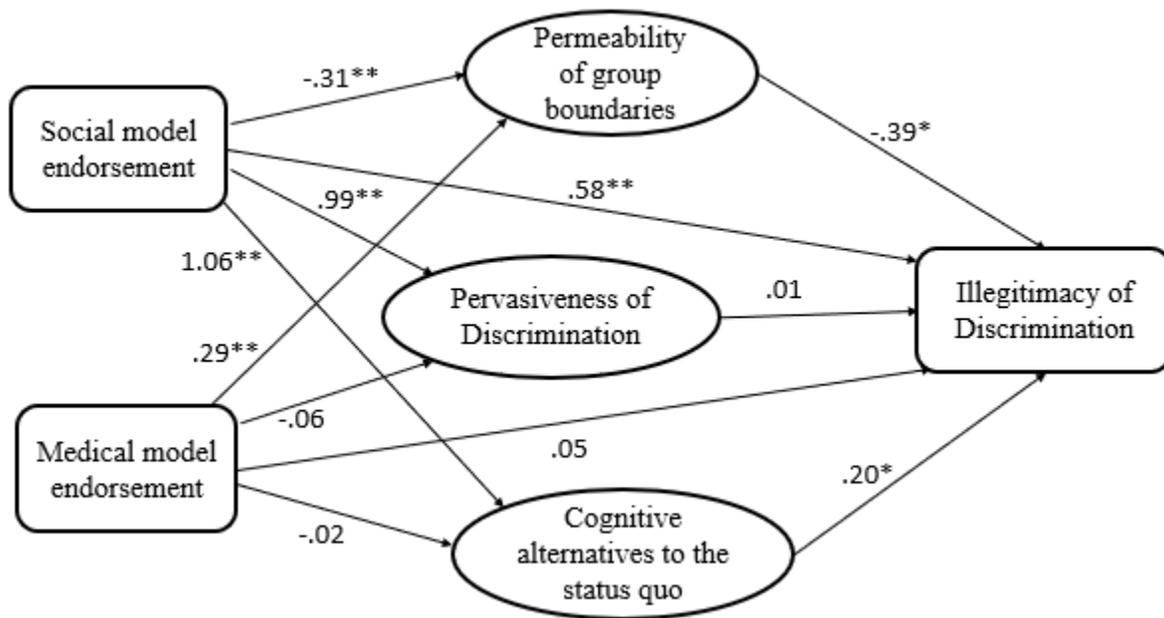


Figure 2. Tested model with regression slopes. Age, Gender, and SES included as covariates. $\chi^2(172)=336.73^{***}$; $CFI=.90$; $TLI=.88$; $RMSEA=.06$. $*p < .05$, $**p < .01$.

Table 7. *Correlations among dependent variables in Study 3.*

	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
1. Disability model focus	--				
2. Illegitimacy of discrimination	.058	--			
3. Pervasiveness of discrimination	.110	.423**	--		
4. Cognitive alternatives to the status quo	.217**	.377**	.304**	--	
5. Impermeability of group boundaries	.367**	-.011	.103	.137†	--

† $p < .10$ * $p < .05$, ** $p < .01$

Table 8. *Correlations among dependent variables and demographic characteristics in Study 3.*

	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>
Disability model focus	-.278**	-.249**	.312**	.205*	-.296**	.227**	.227**
Illegitimacy of discrimination	.257**	.182*	-.192*	-.037	.027	-.008	-.133
Pervasiveness of discrimination	.038	.213**	-.044	.098	-.081	.136†	.021
Cognitive alternatives to the status quo	-.083	-.098	.107	.090	-.166*	.034	.045
Impermeability of group boundaries	-.180*	-.279**	.433**	.263**	-.404**	.246**	.414**

1=Age, 2=Gender, 3=SES, 4=Education, 5=Ethnicity (0=Non-White, 1=White), 6=Proportion of life, 7=Visibility (1(not easily visible)-5(easily visible)). † $p < .10$ * $p < .05$, ** $p < .01$

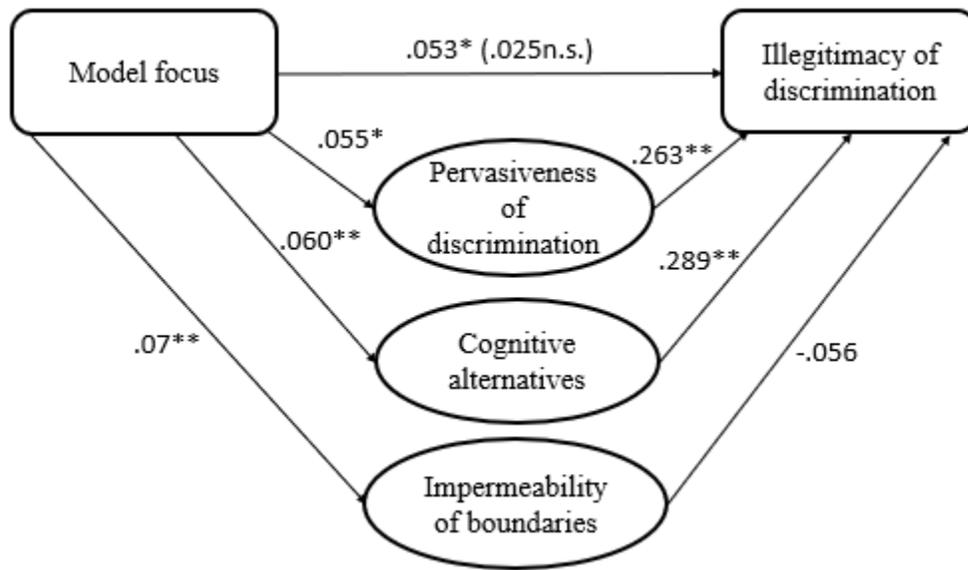


Figure 3. Exploratory mediation analysis in study 3 testing the mediational role of pervasiveness of discrimination, cognitive alternatives to the status quo, and impermeability of group boundaries in the relationship of responsibility for fixing on illegitimacy of discrimination. Total effect of model focus on illegitimacy of discrimination when controlling for age, gender, and level of education is in parentheses. Values represent unstandardized coefficients. $*p < .05$; $**p < .01$.

Appendix A
Study 1 materials

Perceptions of (illegitimate) discrimination:

We will now present you with several scenarios that involve discrimination (negative differential treatment) against disabled people. For each case, we would like you to consider the extent to which the discrimination is legitimate (acceptable) or illegitimate (unacceptable). Please use the scale provided.

1 = This treatment is definitely legitimate

4 = This treatment is both legitimate and illegitimate.

7 = This treatment is definitely illegitimate.

	Definitely legitimate		Both legitimate and illegitimate					Definitely illegitimate
	1	2	3	4	5	6	7	
1. Since many taxis do not have wheelchair lifts, wheelchair users often must wait 15-20 minutes longer, or must plan ahead to arrange taxi service.	1	2	3	4	5	6	7	
2. A Blind accountant who has been at the company for 15 years was passed up for a promotion by a sighted-individual who has only been working in the company for 3 years.	1	2	3	4	5	6	7	
3. A popular store in the neighborhood doesn't have an accessible entrance, so wheelchair users must be lifted three stairs if they want to shop there.	1	2	3	4	5	6	7	
4. A professional guitar player who is disabled is often told that he is brave and courageous, but not that he is talented.	1	2	3	4	5	6	7	
5. The accessible entrance to a building is located at the rear of the structure forcing those with mobility disabilities it to go extra distance to get inside.	1	2	3	4	5	6	7	
6. The bouncer at an exclusive dance club turns away a female wheelchair user and her (non-wheelchair using) date, citing that they wouldn't have a good time.	1	2	3	4	5	6	7	
7. People with disabilities are sometimes required to pay more for health insurance because of their "pre-existing" condition.	1	2	3	4	5	6	7	

8. Children with disabilities sometimes spend all but a couple periods of the day receiving educational instruction away from the rest of classmates.	1	2	3	4	5	6	7
9. A Deaf couple are seated in the back corner of a fancy restaurant; a hearing couple who arrived after them received their food first and more visits from their waiter.	1	2	3	4	5	6	7
10. A person with a nonvisible disability is interrogated by a passerby because she has an accessibility “placard” hanging in her vehicle.	1	2	3	4	5	6	7

Note. Same measure for Perceived Illegitimacy of Discrimination is used in all studies

Cognitive alternatives to status quo

	Strongly Disagree			Neither agree nor disagree			Strongly Agree
1. In the future, people with disabilities will have the same opportunities as nondisabled people.	1	2	3	4	5	6	7
2. The existing unequal social reality between those with and without disabilities is not the only possible reality.	1	2	3	4	5	6	7
3. Greater equality and inclusion are very much attainable for people with disabilities.	1	2	3	4	5	6	7

Note. Items in bold represent those included in the composite measure. The same items were included in Study 2, and the same item was removed from analysis in study 2. Study 3 included only the two bolded items.

Pervasiveness of discrimination

	Not at all						Quite a bit
1. How widespread is discrimination toward disabled people?	1	2	3	4	5	6	7
2. How frequently are people with disabilities discriminated against?	1	2	3	4	5	6	7

Note. The same measure for perceived pervasiveness of discrimination is used in study 2 and 3.

Disability identification:*Private collective self-esteem subscale* (Luhtanen & Crocker, 1992)

	Strongly Disagree			Neutral			Strongly Agree	
1. I often regret that I belong to the Disability community.	1	2	3	4	5	6	7	
2. In general, I'm glad to be a member of the Disability community.	1	2	3	4	5	6	7	
3. Overall, I often feel that the Disability community, of which I am a member, is not worthwhile.	1	2	3	4	5	6	7	
4. I feel good about the Disability community.	1	2	3	4	5	6	7	

Importance collective self-esteem subscale (Luhtanen & Crocker, 1992)

	Strongly Disagree			Neutral			Strongly Agree	
1. Overall, the disability community has very little to do with how I feel about myself. (Reversed)	1	2	3	4	5	6	7	
2. The disability community, to which I belong, is an important reflection of who I am.	1	2	3	4	5	6	7	
3. In general, belonging to the disability community is an important part of my self-image.	1	2	3	4	5	6	7	
4. The disability community is unimportant to my sense of what kind of person I am. (Reversed)	1	2	3	4	5	6	7	

Note: The same measures of disability identification are used in studies 2 and 3

Appendix B
Study 2 materials

Social model endorsement

	Strongly disagree		Neither agree nor disagree				Strongly agree	
	1	2	3	4	5	6	7	
1. There is a need to stop focusing on particular disability conditions and instead focus on universal problems facing people with all types of disabilities.	1	2	3	4	5	6	7	
2. Society needs to accept more responsibility to correct the ways in which they have treated people with disabilities unfairly.	1	2	3	4	5	6	7	
3. The social and physical environment can cause, contribute to, and exaggerate disability.	1	2	3	4	5	6	7	
4. Many of the difficulties of disability are located outside the individual, specifically within the environments not designed with disabled people's needs in mind.	1	2	3	4	5	6	7	
5. More emphasis should be on functional and environmental <i>adaptations</i> rather than <i>rehabilitation</i> of people with disabilities.	1	2	3	4	5	6	7	

Medical model endorsement

	Strongly Disagree		Neither agree nor disagree				Strongly Agree	
	1	2	3	4	5	6	7	
1. It is mainly the effects of a diagnosed medical condition that cause difficulties in a disabled person's life.	1	2	3	4	5	6	7	
2. A disabled person's experience is best understood by knowing the type of diagnosis they have (e.g., cerebral palsy, paralysis, etc.).	1	2	3	4	5	6	7	
3. By definition, disabilities are abnormal and pathological.	1	2	3	4	5	6	7	
4. Medical experts are in the best position to assess a disabled person's quality of life.	1	2	3	4	5	6	7	
5. It is the diagnosed medical condition that places limits on a disabled person's life.	1	2	3	4	5	6	7	

Permeability of group boundaries

	Strongly Disagree	2	3	Neither agree nor disagree	4	5	6	Strongly Agree
1. It is easy for people with disabilities to be accepted in mainstream society.	1	2	3	4	5	6	7	7
2. People with disabilities are rarely successful in mainstream society. (REVERSE). 2	1	2	3	4	5	6	7	7
3. It is easy for people with disabilities to get ahead.	1	2	3	4	5	6	7	7
4. It is not difficult to consider people with disabilities as normal. 1	1	2	3	4	5	6	7	7
5. In principle, the difference between people with and without disabilities is not significant. 3	1	2	3	4	5	6	7	7
6. No matter what effort people with disabilities make, they will never fully fit in.(REVERSE). 2	1	2	3	4	5	6	7	7

Note: Items in bold are the items included in the composite measure. Numbers after the un-bolded items represent the order in which items were excluded.

Perceptions of (illegitimate) discrimination:

	Definitely legitimate	2	3	Both legitimate and illegitimate	4	5	6	Definitely illegitimate
1. Since many taxis do not have wheelchair lifts, wheelchair users often must wait 15-20 minutes longer, or must plan ahead to arrange taxi service.	1	2	3	4	5	6	7	7
2. A Blind accountant who has been at the company for 15 years was passed up for a promotion by a sighted-individual who has only been working in the company for 3 years.	1	2	3	4	5	6	7	7
3. A popular store in the neighborhood doesn't have an accessible entrance, so wheelchair users must be lifted three stairs if they want to shop there.	1	2	3	4	5	6	7	7
4. A professional guitar player who is disabled is often told that he is brave and courageous, but not that he is talented.	1	2	3	4	5	6	7	7
5. The accessible entrance to a building is located at the rear of the structure forcing those with	1	2	3	4	5	6	7	7

	mobility disabilities it to go extra distance to get inside.							
6.	The bouncer at an exclusive dance club turns away a female wheelchair user and her (non-wheelchair using) date, citing that they wouldn't have a good time.	1	2	3	4	5	6	7
7.	People with disabilities are sometimes required to pay more for health insurance because of their "pre-existing" condition.	1	2	3	4	5	6	7
8.	Children with disabilities sometimes spend all but a couple periods of the day receiving educational instruction away from the rest of classmates.	1	2	3	4	5	6	7
9.	A Deaf couple are seated in the back corner of a fancy restaurant; a hearing couple who arrived after them received their food first and more visits from their waiter.	1	2	3	4	5	6	7
10.	A person with a nonvisible disability is interrogated by a passerby because she has an accessibility "placard" hanging in her vehicle.	1	2	3	4	5	6	7

Note. Items crossed out were removed to improve factors structure for the model of best fit.

Appendix C
Study 3 materials

Condition 1: Medical Model

Manipulation 1A

Disability researchers have documented the ways people with disabilities understand their disability experience. They find that one common narrative is to emphasize how one's impairment condition is the primary source of limitation or difficulty in one's everyday life. In other words, it is the symptoms of the impairment condition like weakness, fatigue, pain, or limited vision that are to blame for the limitations or difficulties encountered.

In light of this narrative that emphasizes internal disability factors, please reflect on the ways in which **your impairment (physical, sensory, cognitive, etc.) causes the limitations or difficulties you may experience**. Document your reflection below.

Manipulation 1B

Additionally, researchers find that by putting a focus on one's impairment as responsible for the limitations one might experience, this narrative provides a course of action for overcoming these limitations. In short, it suggests that individuals, working with medical and rehabilitation experts, can take steps to remedy the source of limitation—one's impairment condition.

Please reflect on the ways **you personally and/or with the help of medical or rehabilitation experts, can work** to remedy your impairment-related limitations. Document your reflection below.

Condition 2: Social Model

Manipulation 2A

Disability researchers have documented the ways people with disabilities understand their disability experience. They find that one common narrative is to emphasize how one's physical and social environment is the primary source of limitation or difficulty in one's everyday life. In other words, it is architectural barriers, inflexible social demands, and general lack of awareness that are to blame for the limitations or difficulties encountered.

In light of this narrative that emphasizes external disability factors, please reflect on the ways in which **your everyday environment, physical and/or social, causes the limitations or difficulties you may experience**. Document your reflection below.

Manipulation 2B

Additionally, researchers find that by putting a focus on one's physical and social environment as responsible for the limitations one might experience, this narrative provides a course of action for overcoming these limitations. In short, it suggests that the broader society, including policy makers and community members, can take steps to remedy the source of limitation—social and environmental barriers.

Using the space provided, please reflect on the ways **the broader society, including policy makers and community members can work** to remedy social and environmental-related limitations.

Manipulation check

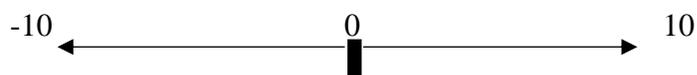
Use the slider scale to answer the following question:

1. *In general, where is the source of disability-related limitations?*

-10 = Inside the person's body and/or mind as a function of their impairment condition.

0 = Both inside the person's body/mind and outside in environmental/social barriers.

10 = Outside the person as a function of environmental and social barriers.



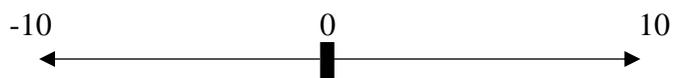
Use the slider scale to answer to the following question:

2. *In general, who is responsible for fixing disability-related limitations?*

-10 = The individual, his/her family, and his/her medical provider.

0 = Equally the individual/family/medical provider, and society more broadly.

10 = Society (i.e., policy makers, community leaders, and community members)



Permeability of group boundaries

Membership permeability subscale (Armenta et al., 2017)

	Strongly Disagree			Neither agree nor disagree				Strongly Agree
1. Disabled people and Nondisabled people are fundamentally different.	1	2	3	4	5	6	7	
2. Disabled people and Nondisabled people are worlds apart.	1	2	3	4	5	6	7	
3. The difference between a Disabled person and Nondisabled person is clear-cut.	1	2	3	4	5	6	7	
4. I can appear as a Nondisabled person if I want. R	1	2	3	4	5	6	7	

5. No matter what effort I make, I will never be seen as an Able-bodied person.	1	2	3	4	5	6	7
6. I could be regarded as a Nondisabled person if I wanted to. R	1	2	3	4	5	6	7
7. There is nothing that I can do that can make me be considered as a Nondisabled person.	1	2	3	4	5	6	7
8. Passing myself off as Nondisabled person goes against my values.	1	2	3	4	5	6	7
9. Wanting to appear as Nondisabled person goes against who I am.	1	2	3	4	5	6	7
10. Wanting to be treated as an Able-bodied person goes against my beliefs.	1	2	3	4	5	6	7

Note: Crossed out items were not included in composite measure.