

A DUAL EXAMINATION OF CONTENT AND EFFECTS: NEWS MEDIA
REPRESENTATIONS OF AUTISM SPECTRUM DISORDER AND THE EFFECTS OF
ATTRIBUTIONS ON COMMUNITY MEMBERS' SUPPORTIVE OR DISCRIMINATORY
FEELINGS, BEHAVIORAL INTENTIONS, AND BEHAVIORS TOWARD THE
DISABILITY

A Dissertation
Submitted to the Graduate Faculty
of the
North Dakota State University
of Agriculture and Applied Science

By

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In Partial Fulfillment
for the Degree of
DOCTOR OF PHILOSOPHY

Major Department:
Communication

March 2014

Fargo, North Dakota

North Dakota State University
Graduate School

Title

A Dual Examination of Content and Effects: News Media Representations of
Autism Spectrum Disorder and the Effects of Attributions on Community
Members' Supportive or Discriminatory Feelings, Behavioral Intentions, and
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ABSTRACT

The media has the ability to influence societal perceptions about important issues. This study involved a dual examination of content and effects of news media representations of a prominent health issue—autism spectrum disorder (ASD) that now affects 1 in 88 individuals (CDC, 2013). Study 1 examined the presence of attributions of ASD and signaling “stigma” cues in news media and Study 2 investigated the effects of attributions of ASD emphasized in news media on community members’ emotions, behavioral intentions, and behaviors toward the disability. Study 1 revealed associations between certain attributions and signaling “stigma” cues and indicated news circulation plays a role in the appearance of cause attributions and social skill deficit cues. The results also illuminated intriguing trends in the presence of certain attributions of ASD and signaling “stigma” cues in news media over the past 16 years. Study 2 shed light on the direct and indirect effects of attributions about ASD emphasized in news stories on community members’ emotions, behavioral intentions, and actual behaviors; these findings partially align with attribution theory. This research provides a holistic understanding about the presence and power of language emphasized in news stories about ASD. Implications and directions for future research are discussed.

ACKNOWLEDGEMENTS

I would like to thank my committee for their feedback. Each of you has played a unique and important role in the development and execution of my dissertation. I would also like to thank the NDSU Communication Department at large. I have spent 10 years in pursuit of my B.S., M.S., and Ph.D. degrees through this department, in addition to my College Teaching Certificate and Statistics Certificate. I have seen this department grow and change in a variety of ways. I am thankful to have been apart of these growths and changes as they offer great perspective for me.

My advisors have played a central role in my development as a scholar. Their careful guidance and advice has allowed me to grow into a strong member of our field. Dr. Judy Pearson constantly encouraged me to look at the bigger picture. She taught me to look beyond what people have done and trust my instinct as a researcher. Dr. Nan Yu provided a host of opportunities that furthered my knowledge of methods, data analysis, and grant writing. Communication is a young field and there is much to be done to further our discipline. My co-advisors (academic parents) have provided me with the tools—academic, relational, and professional—to pursue my goals to become a prominent scholar and share my knowledge with students (academic children). Academic “family lines” are the threads that bring our discipline together, yet promote diversity across traditions, perspectives, and approaches.

To my committee members, you have played an integral role in my education at NDSU. Dr. Beck, you have been an important mentor throughout my graduate education. As my Master’s advisor you were the first person to ask initial questions that made me think about a higher degree. I appreciate your contribution on this dissertation committee. Dr. Robinson, I initially took your emotions class in the psychology department. It was a wonderful class where

I learned about concepts I had been interested in for quite some time. Your contribution to this dissertation has been quite important and I thank you for your time and involvement in the project.

I want to thank my family for being supportive of my early career start and for their unwavering support over the years. In particular, I want to thank my mom. Few people would continue to listen and give “real world” advice to a person who is writing a dissertation—she did. At this point I always assumed I would include my horses Jax and Fire in acknowledgements, but I haven’t seen them for more than a few minutes at a time in the past four years. So they get no credit for the dissertation...they’ll understand. They will probably be glad the dissertation is done so I can see them again!

Finally, I don’t know how to thank my fiancé, Zach, enough for all of his love, support, and friendship. The early morning/late night talks, the times when I feel like I ran into a brick wall, the conversations about what my research is going to lead to next...I am so thankful for every single one of them. I should mention Bomber (our chi-weenie puppy) as well. He was a valuable part of the completion of this dissertation. Zach and I bought him in the spring of 2013 and he will be one year old soon. Now, we are looking forward to our wedding and the beginning of a new career. It has been a positive and productive year—thank you everyone for your support and guidance.

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CHAPTER 1. INTRODUCTION

Depictions of disabilities have piqued the public's interest for decades—movie and television portrayals provide a source of information about the meaning of the term disability (Bailey, 2011; Darke, 1998; Richardson, 2010). These media representations not only have a strong influence on how members of society come to understand and perceive disabilities (England-Kennedy, 2008; Quinlan & Bates, 2009), they also affect disabled people's perception of themselves (Zhang & Haller, 2013). Unfortunately, research has revealed decades of problematic media representations of disabilities (Zhang & Haller, 2013). Disabled individuals have either been excluded from the media, or represented with negative stereotypes that potentially perpetuate misunderstandings about their lives and political issues that affect them (Haller, 2010).

Media representations of disabilities feed societal fascination, but also can play a role in perpetuating stigmatization and discrimination—so much that disability initiatives have strived to avoid media attention in the past. Shapiro (1994) explained the disability lobbyists for the American Disability Act avoided media in advocating their ideas because they thought media stories would perpetuate negative stereotypes, misinform the public, and hinder them from their objective. Implications of media's misrepresentation of disabilities can be seen in a number of tangible ways—a trickle down effect—manifesting in limited opportunities for individuals with disabilities (Hebl & Dovidio, 2005; Kogan et al., 2008).

Approximately 50 million Americans have a disability; about half of these individuals' disabilities are considered severe (U.S. Department of Labor, 2012). This large proportion of U.S. citizens face a number of accessibility, communication, educational, and occupational barriers because of unique combinations of ambulatory, cognitive, hearing, independent-

living/self-care, and visual disabilities (U.S. Department of Labor, 2012). According to the U.S. Disability Status Report (2011) only 33.4% of working-aged (21 to 64) people with a disability are employed, and 27.8% are in poverty (as compared to 12.4% poverty rate for people who are not disabled). In terms of education, 12.5% people with a disability hold a bachelor's degree or higher, compared to 31.2% of people without a disability. Additionally, only 34.4% of people with a disability are allowed health insurance coverage through an employer or union, as compared to 63% of people without a disability. Living with a disability creates a number of barriers that manifest in different forms.

Daily experiences dealing with these types of barriers affect disabled individuals differently. Hahn and Belt (2004) explained many disabled citizens regard living with their disability as a valuable experience, whereas others view their disability as a negative defect that results in a loss or decline of function, ability, or potential. Haller, Dorris, and Rahn, (2006) argue the identity of the disability community is constructed through media representations. Individuals with disabilities negotiate their perception of themselves and their disabilities in a variety of ways, positive and negative.

People with disabilities reported turning to social media as a way to voice frustrations (Morris, 2013). Disabled individuals posted comments on Twitter and Facebook about their experience in completing the Work Capability Assessment (a work-ready assessment); comments that describe completing the assessment as a humiliating and degrading experience. Posters claim assessors lack 'understanding and knowledge' about impairments or ill health and capacity for employment (Morris, 2013). "The assessment is 'unjust, inhumane, and highly inaccurate in determining fitness to work' and the experience had a negative impact on some respondents' physical and mental health" (Morris, 2013, p. 725). Others tweeted and posted

comments about health and social care being limited, decreased, or dropped all together (Morris, 2013). Sudden withdrawal of support causes strain on family relationships. Individuals with disabilities also posted comments about stigma and discrimination: “A number of people said they felt that the government and media fuel negative attitudes towards disabled people” (Morris, 2013, p. 727). Social media provides disabled individuals with an outlet to express frustrations, and serves as a central hub for relating to others in similar situations. Mainstream media appears to have a different agenda—serving as a vehicle for the perpetuation of misguided perceptions about what the term disability actually means.

Statement of the Problem

Media representations of disabilities help society discover and interpret the unfamiliar, though they do so at the risk of potentially stigmatizing the disabilities they depict (Darke, 2010; Falk, 2001; Richardson, 2010). Journalists have the opportunity to alter such representations and improve public knowledge (Corrigan, Markowitz, & Watson, 2004; Corrigan, Markowitz, Watson, Rowan, & Kubiak, 2003; Corrigan et al., 2005; Hinshaw, 2007; Sartorius & Schultze, 2005). Scholarly examinations of media coverage about disabilities are vital; they serve to inform journalistic decisions that could enhance accurate public knowledge. Yet analyses of media coverage of disability issues and stigma have remained scarce (see Coverdale, Nairn, & Classen, 2002). This research extends current understanding about media coverage a prominent disability—Autism Spectrum Disorder (ASD)—in several ways.

First, the current research examines news media portrayals of ASD. Second, the research investigates the effects of media representations of ASD on social support or discrimination toward the disability. This applied research provides knowledge about how news media represents ASD as well as the effects of those representations so preliminary steps can be taken

to: 1) educate journalists about the implications of their language choices, and 2) teach community members how to be critical consumers of media portrayals of disabilities.

The remainder of Chapter 1 provides an overview of media representations of disabilities, media representations of ASD in particular, and a description of ASD. The current research sheds light on news media's role in the social construction of this prominent disability. Ultimately this research identifies how news media could help diminish stigmatization and discrimination of ASD through intricate language choices.

Media Representations of Disabilities

Representations of disabilities have been well documented—particularly through negative images (Nelson, 1994). Donaldson (1981) identified common image portrayals of individuals with disabilities; disabled people are commonly portrayed as leading stressful or traumatic lives, being over-compensated or wrongfully compensated, dealing with mental disorders, or demonstrating bizarre behaviors. More than two decades later these types of cliché images still appear in media representation of disabilities (Enns & Smit, 2001; Larsen & Haller, 2002; Poore, 2003; Whittington-Walsh, 2002). Haller (2010) argued the influence of negative film images has contributed to oppression of people with disabilities.

Scholars have identified patterns in the way media portrays people with disabilities and disability issues, emphasizing: 1) medical dependency, 2) social pathology, or 3) superhuman/supercrip (Clogston, 1990; Zhang & Haller, 2013). Emphasis on *medial issues* involves disabled people portrayed as being dependent on health professionals for cures or maintenance. *Social pathology* portrayals illustrate disabled people as disadvantaged and having to turn to society for support. For example, disabled people are often depicted as taking advantage of their disability to “gain unfair access to privileges and accommodations” (Quinlan

& Bates, 2008, p. 75). *Superhuman* or *supercrip* representations include disabled people as exceptional because they either achieve unexpected accomplishments or simply live a normal life just like other people. These types of media representations of disabilities are well documented (Clogston, 1990; Haller, 1995, 1999, 2003).

Phillips (2012) identified negative stereotypes in a content analysis of newspaper articles and headlines about disabilities. One headline, 'Life Fell Apart into Puzzle Pieces,' introduced a story about a family's tragedy of a mother being diagnosed with schizophrenia. A second headline, 'Ramping Out of a Dead End,' led to a couple's struggle in finding resources to help their child with Downs Syndrome develop. The news stories that follow these headlines portrayed 'disability' as representative of "a deep-seated social burden" (Phillips, 2012, p. 491). The symbolic "disability-as-societal-disorder link, often seen in hyper-sensationalized stories," causes people to think of disability in conjunction with complaints, chaos, and problems. Some exemplary titles that hyper-sensationalize disabilities include: 'A Crook Stole a Man's Identity and Disability Entitlements and Subsequently Imported 20 Foreign Cars Illegally,' 'A Train Passenger's Wheelchair was Stolen,' and 'Children with Disabilities were Kidnapped and Exploited by Roma' (Phillips, 2012, p. 493). These headlines and newspaper stories demonstrate several ways in which the media portrays disabilities as a social problem.

Media coverage of disability sports has been in question (Sikorski & Schierl, 2012; Tanner, Green, & Burns, 2011). Sikorski and Schierl (2012) point out disability sports are frequently portrayed in unfavorable and negative ways. For example, the Paralympics was originally designed to highlight and honor competitive sports for people with disabilities (International Paralympics Committee, 2011), but media has chosen to highlight competitors in the Paralympics as: "pitiful and pathetic, sinister/evil/criminal, or superhuman/supercrip"

(Nelson, 1994, p. 5). The media has also been criticized for “emphasizing the link between disability and incapability” (Brittain, 2009, p. 3). Tanner and colleagues (2011) examined the language reporters chose to adopt when describing Paralympics athletes and their performances. Journalists tend to adopt language that focused on the individual athlete’s disability, rather than utilizing normal sporting language when describing accounts of performance (Tanner et al., 2011). This finding suggests media’s reliance on traditional news values might push journalists to play up the human-interest aspect of Paralympics, rather than focus on the competitions and performances (Tanner et al., 2011). This approach is problematic as it shifts attention from the athletic event to the “unusual” aspect of the disabled people participating.

At the international level, Ghajarieh (2012) argued the Iranian media noticeably excludes HIV-positive people with disabilities and this lack of representation reinforces marginalization. A clear link exists between emergence of disability and HIV/AIDS (see Osowole, 2000; Taegtmeier et al., 2008), yet Iranian media has refused to release official statistics. Ghajarieh (2012) explained the exclusion of HIV-positive people with disabilities in media coverage legitimizes and reinforces the idea that people with disabilities are social minorities who can be excluded for the benefit of normal people and society at large.

After the Equal Rights for Persons with Disabilities Law was passed in 1998, an investigation of Israeli media revealed people with disabilities were still portrayed as objects of pity (or victims), heroes, or dangerous to others (Soffer, Rimmerman, Blanck, & Hill, 2010). The Israeli disabilities law in 1998 was passed in response to the U.S. enactment of the Americans with Disabilities Act (ADA) in 1990; the purpose of the ADA was to reinforce a shift in societal views that people with disabilities are not needy and pitiful, but rather they are entitled to human rights and full civic and social participation (Avrami & Rimmerman, 2005;

Rimmerman & Araten-Bergman, 2005). International media coverage did not change in the way that was originally intended. Instead, the needy, pitiful, and social burden connotations of disabilities were replaced with military imagery and mechanical metaphors used to describe and highlight medical treatments associated (Soffer et al., 2010). Societal trends regarding how disabilities are discussed—language and tone—influence public opinion and policy (Logan, Zengjun, & Fraser Wilson, 2000a, 2000b; McCombs, 2005). Soffer and colleagues (2010) explain the Israeli media, along with many other countries, lack progressive conceptions of disabilities, falling back on traditional bio-medical models.

Even children's books reinforce marginalization and stigmatization of disabilities (Matthews, 2009). 'The Stories Project' was an initiative with the purpose of making children with disabilities feel accepted and welcomed in mainstream society. Early in the project it became apparent that disabled individuals, family members, and general community members all had different conceptions about how children with disabilities should be portrayed (Matthews, 2009). As a solution, Matthews (2009) suggests disabled children and individuals should be given a voice to negotiate their own identities, if they are to see themselves represented adequately in mainstream media, including children's books. Sole reliance on perspectives of others (e.g., family members, community members) proves limiting, and unintentionally reinforces stigmatization (Matthew, 2009).

Recently the public has shown a growing interest in a prominent disability—ASD. To initiate the explanation, ASD is a complex disability involving developmental and cognitive delays, varying degrees of impaired social interaction, delayed verbal and nonverbal communication, and restricted or repetitive behavior patterns often categorized under an umbrella of spectrum disorders (APA, 2000, 2011; CDC, 2008, 2013; Phetrasuwan, Miles, &

Mesibov, 2009). The number of individuals diagnosed with some form of ASD continues to grow at a rate of 10 to 17% per year and currently 1 in 88 individuals are diagnosed on the autism spectrum (CDC, 2013). The negative media representations of disabilities, combined with the rapidly increasing number of cases of autism diagnoses, beg for the investigation of news media's contribution to societal understanding about what it actually means to have ASD. The succeeding sections attempt to “define ASD” and provide a discussion of media representations of the disability.

Defining ASD

ASD is a complex neurological disorder that was first identified over 70 years ago (Kanner, 1943). Since ASD (formerly referred to as autism) first emerged, society has witnessed a rapid increase in cases, positioning the prominent disability as a hot topic for public discourse. Societal conversations and debates about ASD are riddled with mixed messages. What causes ASD? Is ASD preventable? Can ASD be cured? Unlike other disabilities and health issues, seven decades of research, clinical assessment, and investigation into the nature of ASD, has left society in a state of pandemonium (Kite, Gullifer, & Tyson, 2013; Landigran, 2010; Ruta, Mazzone, Mazzone, Wheelwright, & Baron-Cohen, 2012). Medical experts, academics, government officials, educators, service providers, ASD individuals, and their family members participate in public debate about answers for the cause(s) and cure(s) of ASD, all ending on a similar note—*we are not quite sure*.

Ambiguity of ASD

The media has provided an arena for public discourse and debate about ASD, creating a “threatening environment” for ASD individuals and their family members (Holton, Farrell, & Fudge, 2014). While media coverage of ASD and other prominent disabilities encourage

awareness and can serve to educate community members, ASD individuals and their family members are the first to admit that unconditional acceptance, support, and understanding are not society's natural reaction to ASD (Autism Speaks, 2013).

So what exactly is ASD in its current diagnostic state? The answer to this arduous question begins with the development of the original Diagnostic and Statistical Manual of Mental Disorders (DSM), which emerged in 1952 from a classification system of labels, developed with the intent of improving accuracy of statistical data collected in relation to certain types of mental illnesses (APA, 1952). Over time, the DSM's categorical description of mental illness symptoms has become one of the chief mental health diagnostic guides for those in research, medical, psychological, forensic, and social welfare fields (Kupfer, Regier, & Kuhl, 2008). The importance of this labeling system has extended to general community members as well, with DSM diagnostic labels of anxiety, attention deficit hyper disorder, and depression, frequently mentioned in community discussions and media reports. Diagnostic labels are also influential in accessing services and funding (Fletcher, et al., 2011; MacCulloch, 2010), as well as educational services (Skellern, Schluter, & McDowell, 2005).

Western society is heavily reliant on the labeling system for mental health disorders, which makes it vital to ensure that the labels bestowed upon individuals with certain conditions are correct (Halbreich et al., 2007). However, unlike the clarity that exists in diagnosing physical symptoms, interpretation of what a mental illness actually is, and how it should be defined, is subjective. Societal norms, combined with expert academic and professional recommendations, can change the diagnostic criteria for a mental disability. Disturbingly, historical evidence suggests new disabilities can be identified, previously defined disabilities can

be split into new subtypes, two or more previously defined disabilities can be merged into one disability, and disabilities can be removed from the diagnostic manuals (Rogler, 1997).

The DSM-V Diagnostic Tool

In 2009, the American Psychiatric Association proposed to combine the conditions of autism, Asperger's syndrome, childhood disintegrative disorder, and PDD-NOS into one diagnostic label of Autism Spectrum Disorder in the DSM-V (APA, 2011). This proposal was accepted and chosen to be included in the DSM-V; according to this proposal, individuals that have characteristics of any of these previously labeled disorders would be rated on a severity scale (Kite et al., 2013). The hope is that this new classification system will reduce some of the confusion caused by the previous range of diagnostic terms describing pervasive developmental disorders (Wallis, 2009).

The change toward an overarching label of ASD has caused concern because negative connotations associated with the term of 'autism' (e.g., language delays, problems with social skills, destructive behavior) is now generalized to everyone diagnosed on the autism spectrum, under the DSM-V (Landigran, 2010). For example, Asperger's syndrome is typically associated with giftedness and an astonishing advanced ability in certain skillsets, and delays in others. Many celebrities and well known members of society have been diagnosed with Asperger's syndrome: Andy Warhol, Bill Gates, Bob Dylan, Courtney Love, Daryl Hannah, Michael Jackson, Temple Grandin, Tim Burton, and Woody Allen (Johanna-Khristina, 2012). Giftedness associated with Asperger's syndrome is contrasted with autistic attributes of language delays and destructive behavior (Gillberg & Enlers, 1998). Stereotypical portrayals of autism are compounded by recent media reports of diagnosed individuals diagnosed engaging in volatile behavior, dangerously aggressive behavior, running away (Earley, 2009). There have even been

reports of schools placing children diagnosed with autism in “cages,” to protect them from bullying and leaving the school grounds (Doherty, 2009, p. 1).

No specific biochemical indicator or distinct neuroanatomical abnormality has been identified to define autism (or the range of spectrum disorders); the diagnosis is solely based on clinical and behavioral assessment (Kite et al., 2013). Cases of autism vary from mild to extreme and particular characteristics of the disability vary in relative prominence. In sum, the answer to the query, ‘what exactly is autism (now currently referred to as ASD)?’ can be simplified through the statement: *autism is a “label” that changes*. The remainder of the study will refer to autism and other related diagnoses as “ASD,” in an effort to reflect the most recent terminology of the DSM-V.

Media Representation of ASD

Illustrations of ASD that have been scripted into media have increased awareness of the disability, but done little to actively decrease its stigmatization (Broderick, 2010; Holton, 2013; Solomon & Bagatell, 2010). At times, news media has painted ASD as a violent disability (i.e., the Columbine High School massacre) or the product of an “unnecessary” vaccination (i.e., The 1998 Wakefield study). Media representations of ASD are commonly dramatized; these representations play on public concern or guilt, awakening feelings of shame or pity through individual characters without providing their viewpoint (Moody, 2011). This approach lacks potential to extend public knowledge about ASD or related disabilities (Murray, 2008).

News media has highlighted suggested links between ASD and childhood vaccinations, none of which have been scientifically supported (Clarke, 2008, 2010). Scholars and practitioners have voiced a number of criticisms against this coverage, including a lack of balance (Clarke, 2008, 2010), the absence of mobilizing information (McKeever, 2012), and a

priority on placing blame rather than emphasizing ways to suppress societal concerns (Offit & Coffin, 2006). Further, news organizations have done little to alleviate concern about an ASD-vaccine connection, instead fueling societal fears that have reduced certain childhood vaccination rates in the U.S. and the U.K. (Clarke, 2010).

Physical and mental disabilities often pique curiosity and the media satisfies societal desires to understand (Bailey, 2011; Broderick, 2010, 2011; van Kraayenoord, 2011). Scholars have noted an increase in news media and public discourse surrounding ASD and related mental health issues. However these scholars suggest current portrayals may be more detrimental than beneficial as they depict ASD as a shameful, isolating, and burdensome impairment that disrupts the lives of those diagnosed with it, their friends and families, and the communities in which they live (Broderick, 2010; Nadesan, 2005; Thornicroft, 2006; Waltz, 2012). Such portrayals foster the formation of “threatening environments,” (Inzlicht & Good, 2006, p. 129-131), spaces where individuals can expect to be devalued based on the way they are portrayed (Holton et al., 2014).

Implicit Effects of Media Representations of ASD

Negative media representations compel society to think about ways individuals with ASD and related disabilities are *different* from everyone else, rather than considering paths of *inclusion* (Hinshaw, 2007; Stuart, Arboleda-Florez, & Sartorius, 2012; Tantam, 2009). They serve to marginalize those with mental disabilities by highlighting imperfections and perceived oddities in ways that generate discrimination. This aligns with the definition of *stigmatization*, which is the focus on physical or mental traits in individuals who might be considered negative deviations from the social norm that separate those individuals from the rest of society (Falk, 2001; Goffman, 1963, 1968; Gregory, Flynn, & Slovic, 2001; Stuart et al., 2012). Stigma, which

is often conveyed through negative labels or discourse, places a “deep mark of shame” on individuals, that often lasts a lifetime (Hinshaw, 2007, p. 26).

Stigmatizations of mental disabilities may begin subtly, but eventually appear in conjunction with major events covered by the news media or a rise in public dialogue (Powell, 2001). Public discourse about ASD did not emerge until the mid-1990s (Grinker, 2007). Similar to recent times, a new modification of the diagnostic tool for “autism” [relevant terminology of the time] and related disabilities was proposed, stimulating an increase in public discourse. This public attention, coupled with a study published in 1998 that suggested a link between ASD and a childhood vaccination for measles, mumps, and rubella (MMR) (see Wakefield et al., 1998) sparked alarm among parents and fueled a rise in news media coverage of the disability, particularly in the U.S. and the U.K. (Clarke, 2008, 2010). Though the Wakefield et al. (1998) study was eventually retracted in 2010 (see Whalen, 2010), mixed messages that appeared in news media about the possible link left people fearful to vaccinate their children. In the U.K. MMR vaccination rates fell from 92% in 1998 to below 80% in 2003 (Lewis & Speers, 2003). The national rates of MMR vaccinations have continued to drop in both the U.S. and the U.K.; both countries have also reported increased cases of measles and mumps (CDC, 2013; Godlee, Smith & Marcovitch, 2011).

Current media representations of ASD have done little to suppress societal concerns or advance accurate understandings of the diagnosis. Self-advocates urge producers of news media to promote open conversations about ASD (see Grinker, 2007; Page, 2009), but scholars have observed little change in the way ASD and related disabilities are portrayed (Corrigan et al., 2004; Corrigan et al., 2003; Corrigan et al., 2005; Thornicroft, 2006). Individuals with ASD are rarely the focal point of empowering content, instead appearing in news media as social outcasts

whose behaviors are rejected by society. As Nadesan (2005) observed, the varying degrees of behavioral, cognitive, and emotional traits associated with the disability, along with continually changing diagnostic tools, makes it relatively difficult to define ASD. In light of complex and often confusing diagnostics, even media, which rely on expert sources when covering intricate disability issues, have speculated more about the causes, treatments, and fears of ASD rather than improving stigmatizations of the diagnosis (Grinker, 2007; Holton, Weberling, Clarke, & Smith, 2012; McKeever, 2012).

News media has commonly associated disabilities such as ASD with violence, danger, instability, and hopelessness (Corrigan et al., 2004; Corrigan et al., 2003; Corrigan et al., 2005; Hemmens, Miller, Burton, & Milner, 2002; Wahl, Wood, & Richards, 2002). Journalists tend to focus on the science surrounding an issue, seeking answers to causes and cures, asking others their thoughts and reactions, which elicit “highly artificial representations” (Murray, 2008, p. 4). These depictions rarely include a contextualized societal focus—a platform for perspectives from individuals diagnosed with disabilities—neglecting individual viewpoints for familial (e.g., family, friends, teachers) and societal (e.g., policy makers, health officials) ones (Broderick, 2010; Coverdale et al., 2002; Murray, 2008).

Repercussions of Media Representations of ASD

Lack of public knowledge about ASD brings an array of repercussions. ASD individuals and their family members have reported experiencing avoidance, hostile staring, rude comments (Dew, Balandin, & Llewellyn, 2008; Gray, 2002; Hebl & Dovidio, 2005), delayed health care, and lack of family support services (Kogan et al., 2008). Medical professionals and teachers frequently use the word “devastating” when people are diagnosed as being on the autism spectrum (Helps, Newsom-Davis, & Callias, 1999; Nissenbaum, Tollefson, & Reese, 2002).

Speech and language pathology specialists consider working with ASD children to be less desirable than working with children who have other disabilities because communication needs are so complex (Johnson, Bloomberg, & Iacono, 2008).

The economic strain on families with ASD children has also been documented. These families frequently have to seek additional income to pay for necessary health care and support services, which means less time to spend with their children (Kogan et al., 2008). ASD individuals and their family members face stigmatization with both interpersonal and societal repercussions. Felt stigma and the experience of discriminatory behaviors impact their personal and professional environments, as well as health and education services (Dew et al., 2008; Gray, 2002; Hebl et al., 2005; Helps et al., 1999; Johnson et al., 2008; Kogan et al., 2008; Nissenbum et al., 2002).

Problematic Mixed Messages in the Media

News media has the ability to play a powerful role in educating the public about disabilities such as ASD (Corrigan et al., 2004; Corrigan et al., 2003; Corrigan et al., 2005; Hinshaw, 2007; Sartorius & Schultze, 2005). However several factors have complicated media coverage about ASD, and actually contributed to stigmatization of the disability. Approximately 80% of ASD cases are *not linked to any specific cause* (Ghosh & Gorakshaker, 2009). Genetic predisposition, prenatal conditions, obstetric complications, parental characteristics, environmental toxicants, and the availability of school and community resources could all potentially be associated with the growing number of ASD cases (Grandjean & Landrigan, 2006; Kolevzon, Gross, & Reichenberg, 2007; Palmer, Blanchard, Jean, & Mandell, 2005).

With the cause(s) unknown, gauging preventability of the disability is problematic. The stability of symptoms associated with ASD is also unclear. Because ASD is a pervasive

developmental disorder, some experts believe its symptoms are relatively stable and individuals with ASD are unlikely to show signs of improvement (Ling, Mak, & Cheng, 2010). Others hold to the belief that symptoms may improve with certain treatments, diets, and/or therapy (Klin & Lemish, 2008; NIMH, 2012). While scientists and medical experts continue to strive for clear answers to ASD, news media highlights competing attributions about the possible cause(s), preventability, and cure(s) for the disability.

In light of the mixed messages presented in media, community members seek causal reasons for the continued increase in cases of ASD; a phenomenon explained by attribution theory (Weiner, 1986), which posits individuals search for reasons behind the outcomes they cannot readily explain themselves. In the case of a prominent disability such as ASD, not only do individuals, family members, and members of the community search for a clear cause of ASD, they want to know if they can prevent the number of cases from increasing, and if the existing cases can be treated or cured. This collage of questions coalesces around attribution theory. Is the cause of ASD a genetic factor or an environmental factor? Is the condition of ASD preventable or unpreventable? Are the symptoms of ASD permanent or can they improve, or even be cured?

The fact that the media tends to highlight certain attributions (cause, preventability, and stability) of ASD gives reason to investigate: 1) the association between the presence of attributions of ASD and signaling “stigma” cues in news media, and 2) the effects of those attributions on community members feelings (sympathetic vs. antagonistic) and behavioral intentions and behaviors (supportive vs. discriminatory) toward ASD individuals. de Vreese (2005) emphasized a limitation of previous media studies, suggesting scholars frequently choose to focus solely on content *or* effects. This research addresses this limitation by adopting an

applied approach that investigates content *and* effects of news media representation of ASD. The results of this project expose news media as a potential source for the “felt” stigma experienced by individuals with ASD and their family members.

Goals of the Research

This research involves a timely and necessary investigation of media representations of ASD by questioning: 1) what community members are exposed to in terms of media coverage of ASD, and 2) the effects of news media’s emphasis of certain attributions about ASD on the community members’ feelings toward the disability and actions toward individuals with ASD. These central goals are accomplished through two studies.

Study 1 is executed through a content analysis to uncover attributions of ASD emphasized in news media and the presence of certain signaling “stigma” cues. Study 2 is accomplished through a series of three experiments that test the influence of attributions of ASD emphasized in news media on community members’ feelings, behavioral intentions, and behaviors toward the disability. While scientists continue to search for clear answers to ASD, it is imperative to understand how the media’s representation of the disability may influence societal perceptions. These perceptions may, in turn, impact the lives of ASD individuals and their family members.

This research supports the scientific progress toward the cause(s) and cure(s) of ASD, but acknowledges the state of current progress. The current research considers how mixed messages in the media about this progress may potentially diminish the health, prosperity, and welfare of ASD individuals and their family members. By examining the power of attributions of ASD portrayed through the media on community members’ feelings and behaviors toward ASD people, it becomes possible to: 1) critically examine how ASD is represented in news media,

and 2) understand community members' feelings and actions toward the disability. This knowledge offers a platform to educate news media organizations on ethical language choices regarding disabilities and community members' critical media consumption about disabilities such as ASD.

Understanding the power of attributions on community members' feelings and behaviors toward ASD individuals is key because this population includes educators, government officials, policy makers, and service providers. These people hold influential responsibilities that may directly impact ASD individuals, and decisions regarding the disability. Results of this research provide applicable suggestions for organizations and governments tasked with developing messages about ASD, so these messages may help to diminish, rather than perpetuate stigmatization and discrimination of the disability. The results also provide educational information for ASD individuals and their family members.

Preview of the Literature Review and Methods Chapters

The literature review for this research project is extensive—four chapters (Chapters 2-5) investigate: 1) media framing of ASD through signaling “stigma” cues and attributions, 2) attribution theory and its historical development, 3) key factors that play a role in media framing and definitions for key constructs, and 4) a discussion about how this research investigates both content and effects of media portrayals of ASD. Attribution theory is introduced as a nuanced way to study how news media “frames” ASD, providing a foundation for Study 1; a deeper discussion about the influence of attributions on community members' feelings and behaviors toward the disability provides justification for Study 2. Hypotheses and research questions for Study 1 and 2 appear toward the end of chapter five in relevant places. Chapter six delineates the methods and designs for Studies 1 and 2.

CHAPTER 2. LITERATURE REVIEW: FRAMING

Framing at its broadest level refers to a set of theoretical perspectives on how people, groups, and societies communicate, organize, and perceive reality (Druckman, 2001; Goffman, 1974). Framing is an interdisciplinary perspective that has been developed primarily by communication, media, sociology, political science, and psychology scholars. In particular, communication and media scholars are interested in investigating “frames of communication” or how frames are communicated between people (Druckman, 2001; Entman, 1993; Iyengar, 1991). Two scholars—Entman and Iyengar—were particularly influential in the development of framing from a communication perspective.

Framing: The Communication Perspective

A communication perspective of framing was born out of Entman and Iyengar’s arguments. Entman’s (1993) revolutionary argument suggested framing symbolizes how communication as a field has “brought together insights and theories that would otherwise remain scattered in other disciplines” (p. 51). Entman (1993) explained the importance of framing by stating that other disciplines would “remain fractured with pieces ‘here and there,’ but no comprehensive statement to guide research” (1993, p. 52). Entman demonstrated frames used in media highlight “some bit of information about an item that is the subject of communication” (1993, p. 52), thereby elevating that particular piece of information’s salience. *Salience* is a piece of information that is purposely made to be more meaningful, memorable, or noticeable to an audience (Entman, 1993). Information that is purposely increased in salience enhances the probability that people will notice the information, discern meaning, and store it in memory (see Fiske & Taylor, 1991). Iyengar inspired Entman’s work; a glance into Iyengar’s

(1991) introduction of episodic and thematic framing provides a snapshot of how media framing emerged as a perspective.

Iyengar (1991) offered a nuanced approach to framing at the time, through his examination of television's role in defining societal perception of political accountability. Iyengar (1991) introduced the concept of examining episodic and thematic frames, a common research approach used today. Episodic and thematic frames assign responsibility of an issue or outcome at either the individual, or societal level, respectively (Iyengar, 1991, 1996; Kang, Gearhart, & Bae, 2010). *Episodic frames* in health and science news coverage might involve an individual representing a particular illness or disability, helping provide insightful viewpoints that might otherwise go unheard. *Thematic frames* place more emphasis on the connection between issues or events and society, promoting a shared responsibility when it comes to issues of health. Thematic approaches help readers relate to stories and understand how they connect them with other people (Drewnoski, 2009). Journalists, particularly those covering health and science, have been repeatedly encouraged to include thematic frames in their news coverage (see Hawkins & Linvill, 2010).

Episodic and thematic frames provide just one example of how information can be framed. In the present study, framing becomes relevant when certain aspects of ASD are emphasized in media coverage over others (i.e., internal cause vs. external cause, preventable vs. unpreventable, stable condition vs. unstable condition that can be treated and cured). These aspects are actually attributions, or perceived reasons people generate in order to make sense of the origin and existence of ASD. This investigation uses attribution theory as the central theoretical perspective, examining how attributions of ASD are framed by news media.

The remainder of the literature review addresses several concepts that set the stage for two studies that examine: 1) *how* news media portrays ASD, and 2) *the effects* of those portrayals. First relevant literature about media framing is introduced. Second, the nuanced concept of signaling “stigma” cues in news media is discussed in detail. Third, a conversation about how attributions of ASD appear in news media is provided. Scholarly attention to media framing began several decades ago.

Media Framing

Journalists and news organizations make decisions about how to package stories by using frames, emphasizing certain pieces of information over others (Entman, 1993; Holbert et al., 2005; Iyengar, 1991; McCombs, 1997, 2004). News frames are the components journalists use to communicate information to the public in a way that complex issues may more readily resonate with members of society (Shoemaker & Reese, 1996). They provide meaning to an unfolding string of subjects and events, weaving a connection among them with new or contextualized information and sources (Boykoff, 2007; Reese, 2007; Scheufele & Tewksbury, 2007). Recent scholarship has employed media framing in a number of ways. The remainder of the media framing section highlights applications of the perspective across political issues, health issues, and the prominent disability—ASD.

Framing Political Issues

Media framing has been tested and applied to a variety of political issues, beginning with Iyengar’s (1991) investigation of the media’s role on societal perception of political accountability. Politics are riddled with persuasion and media frames (of various types) that set the stage for political arguments, intentionally and unintentionally. Coe (2013) revealed media portrayals of presidential rationales about waging war include a mixture of claims that war would:

1) eliminate a threat, 2) confront evil, 3) advance freedom, 4) promote peace, 5) support the troops, and 6) keep the faith. Media framing has a variety of effects on political knowledge and behavior (Ellithorpe, Holbert, & Palmer-Wackerly, in press). Media frames political issues in a variety of ways and these frames have a multitude of effects.

Media framing impacts how social movements are portrayed. In particular, media reports use certain frames to downplay protests in ways that neutralizes social movement agendas (Smith, McCarthy, McPhail, & Augustyn, 2001). A content analysis of newspaper and television stories about Washington D.C. protests held during 1982 and 1991 revealed reporters represent protest events in a way that undermines the cause (Smith et al., 2001). Additionally, controversy-generated media coverage was typically more episodic; instances of counterdemonstrators, arrests, and/or violence resulted in media coverage about the controversial demonstration event itself and less attention on the meaning behind the demonstration and its connection to the social movement (Smith et al., 2001). Social movement activists often use methods in order to attract the general public's attention; yet journalists cover these stories any way they choose. Media coverage of picketing union workers, gay rights activists, and abortion lobbyists often highlight sensationalized aspects of protest, but fail to highlight the underlying meaning of the cause.

Edy and Meirick (2007) used media framing to measure the impact of naturally occurring frames on public support for a policy. Content analysis of network nightly news in 2001 revealed U.S. media framed 9/11 as both an action of war and crime; a survey revealed audiences combined elements of war and crime frames and that impacted their support for the war in Afghanistan (Edy & Meirick, 2007). Frames can be distinct yet harmonious with other frames, and people can support the same policy for different reasons; beneath strong support for the war

in Afghanistan existed many differing understandings of what 9/11 meant and how the war related to that meaning (Edy & Meirick, 2007). This research demonstrates media framing has a powerful impact on societal perceptions of a national initiative.

Media frames have been examined in a number of other political contexts. Frames used during and after political crises (Baysha & Hallahan, 2004), framing of presidential campaigns (Olds, 2013), presidential website frames (Bichard, 2006), framing of job approval and favorability of political figures (i.e., Clinton and Lewinsky; Kiouisis, 2003), court case frames (i.e., Supreme Court in *Bush v. Gore*; Nicholson & Howard, 2003), and framing policy and legislation (Gray & Lowery, 2000; Gorp, Vettehen, & Beentjes, 2009) are some examples. Media's powerful influence on public opinion and policy begs the question: How do journalists *decide* how to 'frame' political issues?

Epkins (2012) provided insight into how journalists make "framing" decisions; she conducted in-depth interviews with 35 national security journalists in the Washington D.C. Prestige Press to uncover techniques of reporting instances of terrorism in the digital age. Interviewees emphasized a distinct change in journalistic reporting techniques after 9/11. Interviewed journalists believed traditional reporting and journalism is dying because of the Internet, blogs, and other technologies; they believed citizens are not interested or concerned with issues of terrorism because they have become desensitized (Epkins, 2012). Journalists argued since the "sensationalism of terrorism is gone, our reporting really doesn't hurt anything" (Epkins, 2012, p. 34). While all journalists certainly do not share this mentality, these recent statements certainly unveil the frightening reality that some journalists believe their reporting is exempt from having negative repercussions.

Media framing perspective was first used to study political issues. Media frames influence societal perceptions of presidential elections (Bichard, 2006; Olds, 2013), social movements (Smith et al., 2001), political crises (Baysa & Hallahan, 2004), job approval and favorability of political leaders (Kioussis, 2003), and policies (Edy & Meirick (2007). Additionally, journalists may not understand the responsibility they have as they construct media frames about political issues (Epkins, 2012). Outside the context of politics, media framing is also an important theoretical concept when examining media coverage of health issues.

Framing Health Issues

Journalists and news organizations cover a vast range of health issues—obesity, smoking, cancer, outbreaks and epidemics, vaccinations, mental illness, and disabilities, to name a few. The media has “an enormous potential to influence health-related behaviors and perceptions” (Leask, Hooker, & King, 2010, p. 535). Health issues, similar to political issues, are complex and involve a range of debates, unique to each particular issue. News framing perspective is often used to evaluate how the media frames health issues—criticizing or applauding current techniques and offering suggestions for the future.

Gollust, Niederdeppe, and Barry (2013) examined effects of media messages describing consequences of childhood obesity on public attitudes about obesity prevention policy. The researchers conducted two phases of data collection. In phase one 444 participants evaluated the strength of 11 messages about obesity’s consequences as reasons for government action; in phase two 2,494 participants were randomly assigned to messages about certain obesity consequences. Health consequences appeared to be the strongest rationale for working to stop childhood obesity (Gollust et al., 2013). After health consequences, people with conservative political ideology related to consequences of military readiness the most; moderates related to bullying and liberals

related to health care costs (Gollust et al., 2013). Gollust and colleagues (2013) revealed while media frames the societal issue of childhood obesity in a variety of ways, individual differences impact the resonation of certain aspects of the childhood obesity problems.

One way society has decided to combat the problem of obesity is by banning trans fat. In 2006 New York City became the first major city in the U.S. to ban artificial sources of trans fat from restaurants. Other cities—Philadelphia; Boston; Montgomery County, Maryland; Nassau County, New York; King County, Washington; Stamford, Connecticut—implemented similar bans and California passed the first statewide ban in July 2008. Media coverage framed the trans fat ban in terms of individual/societal goals and restaurant/business competition; Wise and Brewer (2010) found that these frames have different effects on community members' support of the ban. Individual/societal goal framing shapes public opinion in a positive way, motivating citizens to get on board the trans fat ban; conversely, restaurant/business competition frames undermine these effects (Wise & Brewer, 2010).

Smoking in public is another health issue that has received a substantial amount of media attention. Kenterelidou (2012) used media framing to investigate how news media framed Greece's public smoking ban. News frames appeared in five forms: economic, political/policy, health, ideological, and image of 'being cool.' Additionally, two standard frames were analyzed: episodic/thematic and gain/loss. The smoking ban was commonly framed episodically and in terms of loss; these frames related to the overwhelming societal backlash and negative opinion about the smoking ban (Kenterelidou, 2012). Media framing has a powerful effect that influences societal perceptions of health issues.

Cancer and heart disease are two health issues that community members encounter in their lives, families, workplaces, and in the media. Clarke and van Amerom (2008) conducted a

critical discourse analysis of news stories from the highest circulating magazines published in Canada and the U.S. in 2001 and found compelling results. Media articles tended to ignore the role of societal determinants such as income, education, ethnicity, early life experience, employment and working conditions, food accessibility and quality, housing, social services, social exclusion, or unemployment and employment security. Instead, articles underscored individualized instances of disease where it was assumed health care is accessible and available to all, and these diseases are preventable and treatable through individual lifestyle choices, combined with prescriptions through conventional medicine (Clarke & van Amerom, 2008).

Although cancer and heart disease are framed by medical discourse, articles tended to emphasize the independence, freedom, and power of individuals within the medical care system (Clarke & van Amerom, 2008). The emphasis on episodic news media frames is problematic because it skews societal perceptions of health conditions like cancer and heart disease. Clarke and van Amerom (2008) encouraged journalists to use thematic frames when covering stories about cancer and heart disease because they give community members a broader perspective on the health issue than do episodic frames.

News media representations of cancer impact people who actually deal with the illness on a daily basis. Donelle, Hoffman-Goetz, and Clarke (2005) investigated how the risk of breast cancer was framed in newspapers directed toward an ethnic minority population (i.e., Jewish) with higher risk of inherited breast cancer, compared to newspaper coverage for the general population (i.e., Anglo-Canadian) with reduced risk. The Jewish newspapers emphasized breast cancer as a genetic risk, whereas Anglo-Canadian newspapers made no reference to genes. According to news media at the time, ethnic groups such as Jewish individuals were genetically inclined to breast cancer, whereas other ethnicities were not (Donelle et al., 2005). While this

conclusion is not scientifically supported, media coverage has an impact on societal understanding about ethnic identity and the prominent health issue of breast cancer.

Journalists and news organizations' perspective about reporting health issues are also important. Journalists are challenged with the responsibility of translating important information about health issues and current debates to the public. Leask and colleagues (2010) conducted in-depth interviews with 16 journalists about their approach to covering stories about avian influenza. Journalists described: 1) the challenge of trying to balance competing aims of different medical experts' perspectives, amidst significant operational constraints; 2) the pressure to make the story newsworthy by emphasizing sensationalistic qualities (e.g., fear, death, destruction), novelty, and disagreement or controversy; 3) accurately quoting credible sources while trying to make it translatable to the general public, and 4) avoiding the "pull" to become public relations writers for health departments and agencies (Leask et al., 2010). Leask and colleagues (2010) emphasize the need for health and medical experts to develop a "team" mentality with the media, in order to improve media coverage of health issues.

Media frames of health issues are a rapidly growing area of research. Accurately reporting information about health issues is necessary so that people do not lose their trust in the media; people *do not want* novel and sensationalized information when it comes to health issues—this approach leads to uncertainty and fear. People should be able to rely on the media as a convenient source for credible, accurate, nonbiased information. Media coverage has contributed to the complexity and confusion surrounding societal understanding of disabilities, and in particular ASD.

Framing ASD

Disabilities such as ASD are framed in daily public discourse in a variety of ways. Broderick and Ne’eman (2008) argued that ASD has become a metaphor through the media; the words ‘autism,’ ‘ASD,’ and ‘autism spectrum disorders’ now stand for human characteristics that are not accurate attributes of all diagnosed individuals. News media provides a convenient way for people to understand complex disability symptoms; in the end, news media may perpetuate the use of certain metaphors of a disability that may or may not be true. Sontag (1990) argued, “one cannot think without metaphors. But that does not mean there aren’t some metaphors we might well abstain from or try to retire” (p. 93). Obtaining the truth of what ASD actually is, or is not, becomes quite difficult when considering media representations of the disability—there may or may not be an actual truth of what ASD is because it is *merely a label*. Foucault (1980) explained, “There is a battle ‘for truth,’ or at least ‘around truth.’ Truth is linked in a circular relation with systems of power, which produces and sustains it, and to effects of power, which it induces and which extends it” (p. 132-133). News media abides by these power and truth rules, yet stylistic language and sensationalization may cloud societal perceptions of what disabilities such as ASD actually are. The news media appears to frame ASD in a variety of ways (Holton et al., 2014; Kang, 2013; McKeever, 2012).

The news media does not use consistent frames when covering stories about ASD. Kang (2013) found television coverage frequently discussed and debated over the cause of the disability of ASD more than any other issue. Alternatively, McKeever (2012) investigated print news coverage of ASD and found potential cures for the disability were mentioned more frequently than cause. Kang (2013) uncovered that in television news coverage, personal (episodic) responsibility for the ASD was emphasized over social (thematic) responsibility.

However in an examination of print news coverage of ASD, thematic frames appeared more frequently than episodic frames (Holton et al., 2014). Holton and colleagues (2014) also found loss frames appeared more frequently than gain frames. The frames used to cover ASD by journalist and news media organizations may be problematic because they could potentially perpetuate an unclear societal perception of the disability.

A nuanced debate regarding how ASD should be “framed” in news media involves the neurodiversity vs. the medical model. The neurodiversity movement challenges “medical models” predominantly interested in causes and cures of ASD (Autism Speaks, 2013); the movement celebrates autism as an inseparable aspect of identity and challenges efforts to find a cause and cure for the disability (Baker, 2011; Jaarsma & Welin, 2012; Jordan, 2010). The neurodiversity movement arose primarily through the media and Internet in response to perceived marginalization of ASD individuals and organizations run by parents (Chamak, 2008; Ortega, Elipe, Mora-Merchán, Calmaestra, & Vega, 2009). News media emphasize neurodiversity and the medical model in a number of ways (Kapp, Gillespie-Lynch, Sherman, & Hutman, 2013), increasing confusion among the general public about what ASD actually is.

The neurodiversity movement and medical model have been positioned in opposition to each other (Bagatell, 2010; Chamak, 2008; Clarke & van Amerom, 2008). Kapp and colleagues (2013) conducted an experiment by exposing certain individuals to media coverage emphasizing the neurodiversity movement, and others to coverage emphasizing the medical model. Individuals exposed to the medical model reported an increased concern to identify causes and cures for the disability, when compared with people exposed to coverage of the neurodiversity movement (Kapp et al., 2013). Media framing impacts people’s perceptions of ASD; increased societal discourse about causes, preventability, and cures of ASD makes people think about these

aspects of the disability, enhancing thoughts about how ASD individuals are people who ‘could have been normal’ or ‘could have been cured’.

A glance into the past. In order to understand how ASD is portrayed in news media today, it is important to consider how ASD is defined and portrayed historically, and how it has changed over time. Since the introduction of ASD as a disability, news media has emphasized the “cause” of ASD; however in recent years the media has started to highlight the neurodiversity movement, which encourages people to focus less on causes and cures of the disability and more on how individuals with ASD are unique and play an important role in society (Itkonen & Ream, 2013). The neurodiversity movement is distinctly different perspective from when ASD first emerged in the 1940s; at the time media and society associated the disability with a genuine lack of maternal warmth and a chilling parental relationship, assigning labels such as “the refrigerator mom” (see Laidler, 2004).

Bernard Rimland challenged the “refrigerator mom” theory in 1964, arguing that ASD was not a disorder caused by poor mothering, but a biomedical disorder (Itkonen and Ream, 2013). In other words, Rimland argued ASD was a mental disorder caused by brain disease (Deacon, 2013). World War II greatly influenced Rimland’s perspective; WWII (1939-1945) drastically affected how child psychiatrists and doctors were instructed to diagnose and define ASD (Grinker, 2007). Psychiatry’s initial emphasis on psychoanalysis identified autism [terminology at the time] as a disorder of self *or* the mother; as scientists began to use medical knowledge to study individuals’ behavior, ASD became understood as a biologically inherited neurological (genetic) disorder *or* a neurological disorder triggered by environmental effects (Itkonen & Ream, 2013). Journalists followed and publicized the complex trail as science unfolded. In recent years, *Autism Speaks* has become increasingly prominent in media coverage;

the non-profit organization unites individuals that identify with ASD through news media coverage, social media connections, and public service announcements (Itkonen & Ream, 2013).

News media coverage of ASD has been defined and portrayed in a variety of ways over the past 70 years (Itkonen & Ream, 2013; Kapp et al., 2013), with little progress toward clarification. Just as the scientific and medical communities are perplexed about the complexities associated with the disability, so are journalists and news media. Scientific confusion is relayed through news media to the general public and may sway community members' perceptions of ASD (Itkonen & Ream, 2013). These mixed perceptions may or may not be accurate, but they open the door for community members' to judge individuals with ASD, potentially giving rise to community members' stigmatization of the disability.

The Presence of Signaling “Stigma” Cues in News Media

ASD has attained substantially more public attention than any other disability (Mallet, 2011). The label of ASD has “become a fetishized commodity and even a global industry...an industry that silences the autistic voice from any participation other than in the form of a tokenistic gesture” (Mallet, 2011, p. 885). In order to examine how news media portrays ASD a person must accept the fact that what they know about the disability has been shaped by news media and societal discourse—following suit with a westernized understanding of mental disabilities (Halbreich et al., 2007). Like many other societal issues, people must use basic common sense to allow themselves to see how news media may play a role in societal understanding of disabilities such as ASD. News organizations and the journalists that work for them have the responsibility of using accurate language and making ethical content choices when discussing prominent health issues such as ASD. In particular, news media should be trusted to

use ethical and appropriate language associated with the diagnosis of ASD and avoid using language that unfairly passes judgment—*language that may signal stigmatizing thoughts*.

Defining Stigma

Goffman has been instrumental in conceptualizing and defining stigma. Goffman (1963, 1968, 1974) argued *stigma* creates a chasm between an individual's natural perception of him or herself and who society expects that individual to be—one's spoiled normal identity. To be defined as abnormal in society is often enmeshed with being perceived as isolated, pathological, shunned, or sanctioned (Milton, 2012). A person who sees their interactions as 'normal' and 'correct' can degrade those who act, or are perceived as 'different' if a breakdown in social or behavioral interaction occurs (Tajfel & Turner, 1979). An example of an interaction breakdown is when a normal person and an abnormal person fail to find common ground in meaning or appropriate actions. If the normal person can apply a label to the 'other' and locate the problem in them, it resolves the labeler's responsibility of their own perceptions; the abnormal action (whatever it may be) is perceptually fixed for the labeler—but not for the person who has been 'othered' (Said, 1978).

It is possible the inclusion of judgmental cues in news media may play a role in the existence of an underlying stigma surrounding ASD; journalistic language that differentiates, rather than unites ASD individuals with the rest of society, may cloud their authentic identity. Specific language choices made by journalists and news organizations are particularly important to consider when seeking the source for stigma of ASD individuals because community members cannot simply look at an ASD individual and determine their disability. Stigmatization and discrimination of people with ASD is much different than that of minority groups who display certain physical traits (e.g., skin color, body type, facial structure). While some ASD people do

exhibit social and behavioral tendencies that are not viewed as “normal,” news media references to abnormal, overgeneralized, and potentially inaccurate tendencies may “cue” people into judging the disability at large, as well as ASD individuals. Goffman offered insight into the connection between stigma and visible vs. nonvisible differences.

Goffman (1963) explained stigma emerges in two primary ways—visible differences (discredited stigma) and nonvisible differences (discreditable stigma). *Discredited stigma* suggests traits associated with external or overt attributes (e.g., an individual with low-functioning ASD may rock violently, have a perpetual blank stare, or exhibit a mark from banging his or her head on the table or wall) give rise to judgments of abnormality or inferior difference. *Discreditable stigma* involves cues that may not be readily identifiable (e.g., an individual with high-functioning autism may show symptoms of a diagnosis through an anxious reaction in a crowd, or panic due to specific events); people may see an ASD person and not realize their disability until they “expose” themselves.

The concept of discreditable stigma is key when considering news media representations of ASD. In some cases, ASD is associated with extreme aberrant behavior or inability to communicate, but it is inaccurate to suggest everyone with ASD has these qualities. Additionally, an ASD individual could be described as having high anxiety while at a social event; however, the black and white line between normal and abnormal becomes quite gray as one realizes that even “normal” individuals may experience anxiety in a crowd, or have a panic attack because of a certain event.

Based on Goffman’s work, Corrigan (2000, 2002) described a systematic way to identify certain cues that signal stigmatization of ASD and other disabilities—cues that could appear in news media. While many people with ASD resemble other “normal” people, Corrigan (2000)

explained their normal identity might be unfairly spoiled because of signaling “stigma” cues paired with mention of the diagnosis. These cues fall into four categories: 1) labeling, 2) social skill deficit, 3) aberrant behavior, and 4) physical appearance.

Holton and colleagues (2014) extended Corrigan’s signaling “stigma” cue categories to the context of news media coverage of ASD. Findings provide compelling evidence of journalists’ social construction and potential stigmatization of ASD (Holton et al., 2014). Findings suggested journalists, who have made strides in the coverage of health and science, might not be sending a fair or balanced message to the public when it comes to ASD. Holten and colleagues (2014) suggested the media has created a “threatening space for autism” through the inclusion of signaling “stigma” cues and the fashion in which coverage about ASD is framed—a finding that has concerning implications for the broader coverage of mental health and disabilities by key news outlets, especially newspapers. The four signaling “stigma” cues (i.e., labeling cue, social skill deficit cue, aberrant behavior cue, and physical appearance cue) are discussed in the following paragraphs. It is important to note that some of these words or phrases may be thought of as standard reporting language for health and science news stories, but in the case of ASD these types of language have negative or judgmental undertones toward the disability because they are *not correctly associated with the diagnosis*.

Labeling cue combines mention of ASD with negative associations through nouns and adjectives that associate the disability with abnormal qualities or characteristics (Holton et al., 2014). News stories about ASD that categorize the disability as agonizing, clunky, crazy, devastating, isolating, odd, off-kilter, unusual, or a victim, would be considered to have used the “labeling cue.” It is important to separate words frequently paired with ASD that are correctly associated with the diagnosis, including pervasive, disorder, disability, mentally retarded, and

mental retardation. These types of words and phrases may be paired with the mention of ASD in news stories, but for the purpose of this research they are not considered labeling because they are accurately associated with the disability's diagnostic terminology.

Social skill deficit cues can be recognized through reference to minimal or problematic social interactions or difficulties in verbal and nonverbal communication that inhibit an individual from social engagement (Holton et al., 2014). Social skill deficit cues could be seen through mention of disrupted communication, inappropriate social skills, language problems, reference to limited vocabulary, social challenges, or social problems. The disability of ASD is commonly diagnosed and referred to in terms of a set of words or phrases which should not be considered to be social skill deficit cues: nonverbal, can't speak, mute, barely speaks. To further explain, journalists would be using the social skill deficit cue if they referred to an ASD individual as having *inappropriate* social skills, but if the ASD individual mentioned in the news story was referred to as *unable to speak* (and their diagnosis was nonverbal ASD), this would be an ethical usage of journalistic language because it is appropriately associated with the diagnosis.

Aberrant behavior cues can be detected through reference to ASD individuals' feelings or actions to external stimuli, or other symptoms that may obstruct one's quality of life (Holton et al., 2014). The presence of aberrant behavior cues included in news media stories may consist of bolting into traffic, climbing on things, eating inedible objects, inappropriate exposure, repetitive body movements, self-destruction, self-injury, or struggling with everyday behavior norms. Journalists that refrain from using language not considered to be aberrant behavior cues include any reference to a behavioral change that is *not* deviant, anomalous, or peculiar.

Physical appearance cues can be identified through mention of an ASD individual's stunted physical development or abnormality (Holton et al., 2014). While ASD does not involve

individuals who have visible signs of their disability, journalists occasionally mention physical appearance cues into news stories about individuals with ASD, such as mention of comparison to certain body types (e.g., frail, ill, high school fullback), disheveled hair, weird looking, scarring, shaky limbs, trembling, or unusual marks. It is important to note that some news stories mention ASD in conjunction with a behavioral choice that made them “look” different temporarily, such as wearing strange clothing. This would be considered aberrant behavior (APA, 2011; Autism Speaks, 2013; Holton et al., 2014).

Signaling “stigma” cues adopted from the original work of Goffman and furthered by Corrigan provide a nuanced way to study the way judgmental and stigmatizing thoughts may arise. While discredited stigma may result from obvious visual differences, discreditable stigma can only arise if people are “cued” into thinking an individual or group of individuals are different in a negative way, through signaling “stigma” cues (Corrigan, 2000). Holton and colleagues (2014) extended signaling “stigma” cues to the context of news media. The results of their study suggest these cues appear in patterned ways through media framing.

Holton and colleagues (2014) investigated how signaling “stigma” cues in news media are associated with gain and loss frames, as well as episodic and thematic frames. In an analysis of newspaper articles about ASD over a 15-year span (1998-2012), more than two thirds of the coded sample contained a signaling “stigma” cues (67%). Labeling cues (50.7%) and aberrant behavior (52.6%) were most frequently observed, closely followed by social skill deficits (44%); physical symptoms were significantly less frequently observed (15.9%) (Holton et al., 2014). All four cues were positively associated with each other; social skill deficit cues and physical appearance cues were positively associated with gain frames, whereas labeling and aberrant behavior were positively associated with loss frames (Holton et al., 2014). Finally, episodic

frames tended to include all four signaling “stigma” cues, and thematic frames overwhelmingly included labeling and aberrant behavior (Holton et al., 2014). While these results do not suggest news media stigmatizes ASD, they do illustrate the presence of signaling “stigma” cues may be associated with certain media frames. Additionally, based on the concept of discreditable stigma, these cues may put out signals that clue people into developing stigmatizing attitudes (see Corrigan, 2000; Goffman, 1963).

Discreditable stigma and signaling “stigma” cues are important concepts to investigate when considering news media’s role in the social construction of ASD. Yet there seems to be another important piece to the puzzle. Kang (2013) and McKeever’s (2012) mixed discoveries about emphasis of causes and cures of ASD, as well as news media’s emphasis on certain attributions of the disability, are in need of a more careful examination. Attributions are powerful cognitive mediators. *Attributions*, perceived reasons of the outcome of an event, may influence people’s feelings and behaviors in interesting ways (Weiner, 1986, 1995, 2006). Attribution theory provides a nuanced way to investigate how attributions of ASD emphasized in news media coverage may influence community members’ feelings and behaviors toward the disability. Before delving into a detailed account of attribution theory, its development, and its recent application to the context of news media, a brief transitional section discusses the collection of mixed messages about attributions of ASD that appear in news media and research.

Attributions of ASD in News Media

Scholars continue to shed light on how disabilities such as ASD are framed in news media. In the context of news media coverage of ASD, it is particularly important to consider how news media portrays causes, preventability, and stability of ASD because according to news media: 1) the causes are unknown, 2) the preventability is unclear, and 3) stability is highly

variable. The scientific and medical communities have struggled with answers to the causes, preventability, and cures of ASD, and the news media follows their trail—as they should. To describe this existing confusion, the following paragraphs provide contradictory perspectives reinforced in news media stories about ASD being 1) completely caused by genetics, 2) ASD being totally caused by environmental factors, 3) the disability being completely preventable, 4) the disability being totally unpreventable, 5) symptoms associated being fully stable, and 6) symptoms being completely unstable (treatable or curable). The following section provides a snapshot of the complex picture painted by news media portrayals of ASD.

A host of news media articles emphasize internal causes of ASD by discussing the disability as a brain disease, neurological disorder, or a genetic abnormality. Szabo (2011) quoted Thomas Insel, Director of the National Institute of Mental Health, “It is turning out to be not just one gene or two genes, or even 10 genes, but lots of genes” (p. 4D). Another article titled “The Autism Wars” stated there is no blood test or brain scan to diagnose autism, rather parents “want an ‘out’ for why ‘little Johnny’ is a little hard to control (Harmon, 2012). This judgmental statement about parental perceptions of their children illustrates the negative connotations that come with a belief that the disability is caused by internal factors.

Others argue environmental factors are the cause of ASD. Landigran (2010) argued genetic predisposition to ASD is only triggered through exposure to environmental toxins such as: lead, ethyl alcohol, methyl mercury, thalidomide, misoprostol, valproic acid, maternal rubella infection, and chlorphrifos during early pregnancy. Landigran (2010) believed “families with ASD children may contain family members with ‘autistic traits’ such as social isolation or tendency toward repetitive behavior” (p. 200). Healy (2012) described how mothers who have fevers during pregnancy might be more likely to give birth to a child with ASD. Pollution may

also be a potential reason for the increased emergence of ASD cases (Pollution May Increase, 2012). News media provides mixed messages about the causes of ASD.

What does the public think about this? The World Autism Views Project surveyed people from around the world about what they think causes ASD; statistical differences were revealed. Approximately 47% of people believe the majority of ASD research focuses on genetics (World Autism Views Project, 2011a). People from Australia, North American, and Europe (East, North, and West) support this belief, while people from Asia, Southern Europe, and Latin America think ASD cannot be inherited (World Autism Views Project, 2011a). Roughly one third of people believe ASD is caused by exposure to toxic substances; this is an assumption predominantly upheld by North Americans (World Autism Views Project, 2011a).

Regardless of the causes of ASD, the news media still attributes preventability in coverage of the disability—some sources suggest it is preventable, other unpreventable. Dr. Hyman (2012) argued ASD is a “body disorder” that affects the brain; a toxic environment triggers certain genes in people susceptible to this condition. Hyman described a boy named Sam (age 2 ½) he recently treated. Sam was “born healthy, but diagnosed with autism after his first MMR vaccination at 22 months” (p. 1). Hyman explained, “Every child with autism has unique genetics, causes or triggers. And it is not usually one thing but a collection of insults, toxins, and deficiencies piled on susceptible genetics that leads to biochemical train wrecks we see in these children...all of which could have been prevented” (p. 1). Martha Herbert, M.D., a pediatric neurologist from Harvard Medical School explained how core abnormalities in body systems like immunity, gut function, and detoxification play a central role in causing the behavioral and mood symptoms of the disability—making ASD easily preventable with the right

diagnostic tools (Hyman, 2012). Additionally, a news report announced a new vaccine that could actually “prevent autism” (Norton, 2013).

The unpreventable nature of ASD also appears in news media coverage about the disability, suggesting it is uncontrollable at this point. The Mayo Clinic (2013) states: “No cure exists for autism, and there is no one-size-fits-all treatment. The range of home-based and school-based treatments and interventions for autism can be overwhelming” (p. 1). Many other media articles claim the disability is unpreventable, but then the Larry King Live (2009) interview with Jenny McCarthy titled “Autism is Preventable and Reversible” (p. 1) emphasized how McCarthy believes her son’s disability could have been prevented. Mixed messages and confusion continue.

The same Larry King Live interview also emphasized how McCarthy’s son was completely cured of his diagnosis, ASD (LKL, 2009). The World Autism Views Project (2011b) found 34% of people believe ASD is treatable, 59% believe it is not. Asia and Eastern Europe overwhelmingly accept the treatability of the disability, whereas people of North American, Australian, and other European areas believe ASD is not treatable (World Autism Views Project, 2011b). North America, Eastern Europe, and Asia strongly believe therapy reduces symptoms associated with ASD, and have slightly less of a belief that medical treatments reduce symptoms the disability (World Autism Views Project, 2011b). Asia, over North American and Eastern Europe, believe the condition of ASD can be cured. The website Great Schools “Learning Disability” section talks about how media paints the recovery of ASD as a “false hope” (p. 1). A mother of an ASD child states: “I’ve never met a recovered child outside the pages of old books and people going on motivational rants. It does not happen” (McGovern, 2013, p. 1). The media

paint ASD as completely curable, and at the same time a lifelong and permanent condition that will never improve.

The debate about diagnosing ASD makes one wonder how many adults today should have been diagnosed with ASD at a young age, but were not—and became successful professionals and community leaders. Causes, preventability, and stability of the diagnosis—concepts deeply embedded in societal discourse about ASD—are the key dimensions of attribution theory. By using attribution theory to study how ASD is framed in the context of media, it becomes possible to examine what attributions are embedded in news media coverage of the disability, as well as their effects.

Summary

News media portrays an array of mixed messages about ASD, emphasizing how the disability is caused by internal factors, caused by external factors, completely preventable, totally unpreventable, fully stable, and completely unstable. What are community members to believe about this prominent disability? At this point, the current research turns to attribution theory (Weiner, 1986) because it is useful in further investigating how these mixed messages about attributions of ASD may play a role in community members' feelings, behavioral intentions, and behaviors toward ASD and individuals with the disability.

While attribution theory was predominantly developed through research studies involving interpersonal interactions, the framework has been applied to the context of news media (see Andreassen, 1987; Bae & Park, 2011; Ben-Porath & Shaker, 2010; Connolly-Ahern, Grantham, & Cabrera-Baukus, 2010; Holton et al., 2012; Jarlenski & Barry, 2013; Major, 2009; McClure, Allen, & Walkey, 2001; Palazzolo & Roberto, 2011; Williams, Davidson, & Yochim, 2011). This collection of studies illustrates how attribution theory can be useful in the context of media

in unique ways; these scholars explore what attributions are emphasized regarding certain social issues across a variety of contexts, as well as the effect of these attributions. Before elaborating on this collection of innovative research, Chapter 3 delves into the original conceptualization and historical development of attribution theory.

CHAPTER 3. LITERATURE REVIEW: ATTRIBUTION THEORY

Attribution theory of motivation centers upon the belief that a causal attribution about how or why something has happened has bearing on present and future feelings and behaviors (Weiner, 1986). In the conception of attribution theory, Weiner highlighted:

A theory of human behavior must be able to explain the moral and the amoral using the same principles. This belief reaffirms that an adequate theory must include diverse cognitions and emotions, as well as clarify the relation between basic motivational components of reason, passion, and action. (1986, p. 14)

Weiner (1986) explains attribution theory's motivational sequence is initiated following an event outcome; often the success or failure in an achievement-related activity, acceptance or rejection in a social encounter, or the introduction to the rapid societal increase of an unfamiliar health condition. Specific information about causality is especially sought when an event outcome is unexpected, negative, or important. Based on convenient knowledge, people generate *causal attributions*, perceived reasons for the outcome of an event (Weiner, 1986). Attribution theory centers on *three dimensions* that capture different aspects of causality: cause, controllability (or preventability), and stability (Weiner, 1986). These dimensions involve dichotomous perceptions of: 1) whether the cause of an outcome was internal or external, 2) whether the preventability of an outcome was preventable or unpreventable, and 3) whether the stability of an outcome was stable or unstable (Weiner, 1986). Further discussion about the logic and development behind each of these dimensions is provided, beginning with the overarching concept of attribution theory—causality.

Causal attribution answers the “why” question of an outcome (see Braithwaite, 1959). Causes illuminate questions such as: Why did I not see that car coming? Why did my friend

forget to call me last night? Why did the Seahawks beat the Broncos? Why was the Sochi Winter Olympics of 2014 so unprepared? The root of a causal attribution stems from the perceiver in their effort to understand the relationship between an action and an outcome (Weiner, 1986). Notice some “why” questions manifest at the intra- or interpersonal level, while others weigh societal level questions. At the intra- or interpersonal level, convenient knowledge may arise from thought processes, conversations, observations, or interactions; at the societal level convenient knowledge emanates from the media (Weiner, 1986). People ask “why” questions on a daily basis about a variety of monumental and mundane events they see personally or through the media. The fact that people ask “why” questions has been well documented with scientific procedures (Weiner, 1986). While a number of answers may be offered for every “why” question asked, attribution theory repositions the main focus to be on the consequence, rather than the cause, of the causal attribution (Weiner, 1986).

Fritz Heider (1958) proposed the first systematic analysis of causal structure. Heider proposed a fundamental distinction between causes: “In common sense psychology (as in scientific psychology) the result of an action is left to depend on two sets of conditions, namely factors within the persona and factors within the environment” (1958, p. 82). Heider did not clarify whether internal and external causes are discrete categories, or anchors on a continuum. Weiner (1986) adopted the belief that causes are in fact discrete categories, drawing support from Kelley’s (1967) argument that humans think in terms of dichotomous constructs (internal vs. external) rather than continua (degree of internality-externality). This classification system allows attributions to be studied from a systematic viewpoint.

Controllability attribution highlights whether or not a person, or group of people have the power to change the outcome an event (Weiner, 1979). Rosenbaum (1972) first suggested a

second dimension of causality; he recognized mood, fatigue, and temporary effort are all internal causes, but they are distinct in that temporary effort is subject to control—people can choose to invest varying levels of effort at different times. However, people cannot elect to change their mood or the onset of fatigue. Weiner's (1979) classification of controllability pulls apart Rotter's (1966) concept of locus of control by emphasizing locus *and* control separately, rather than locus *of* control. Within Weiner's (1986) classification system, a cause might be internal, yet uncontrollable. To illustrate this concept, imagine a student earned a D on his or her speech because of communication apprehension. The cause of earning the D would be considered internal, but literature suggests communication apprehension is a personal characteristic and therefore not controllable.

Stability attribution centers on the belief that the outcome of an event may or may not be able to change over time. Weiner and colleagues (1971) argued this third dimension was required because among a set of internal causes, some fluctuate while others remain relatively constant. For example, a person's ability in statistics may be fairly constant, whereas a mood change occurs throughout the semester. A similar logic applies to external causes. When a person scored a homerun it could have been because the game took place at her hometown field, or because of the direction of the wind. While the hometown field location is unchanging, the direction of the wind might change by the hour. The stability dimension of causality allows consideration to be given to the permanency of an outcome event.

In sum, Weiner's (1986) logical analysis of causality is comprised of three dimensions: cause, controllability/preventability, and stability. Each of these dimensions is considered in terms of discrete categories labeled internal-external, controllable-uncontrollable (preventable-unpreventable), and stable-unstable. Attribution theory has demonstrated heuristic value since

its inception. For nearly three decades, scholars have tested and refined attribution theory, applying it to a variety of contexts. Results have generally appeared to be replicable. Overall, the theory has demonstrated falsifiability, precision, and parsimony. The following sections provide an overview of attribution theory's historical development, leading up to the most recent applications today.

The Historical Development of Attribution Theory

Weiner (1986) emphasized the importance of including historical causal relations in attribution theory. *Historical causal relations* place importance on understanding *why* an individual perceives the present situation as he or she does (Weiner, 1986). Many theories of motivation, with the exception of the psychoanalytic approach, are “ahistorical,” meaning the focus is entirely on specification of present determinants of action (Weiner, 1986). In order for researchers to uncover a causal chain of influencing factors, casual modeling (e.g., path analysis) is essential. Weiner proposed three possible relations between thoughts, feelings, and actions: 1) thoughts produce both feelings and actions; 2) thoughts influence feelings, and feelings then give rise to actions; or 3) thoughts generate feelings, and thoughts and feelings combined produce actions (1986, p. 13). These proposed relations were examined by a number of scholars over the next three decades—the current study covers this progression by focusing first on the 1980's, then on the 1990's, and finally on 2000's and recent years.

The 1980s and Earlier

Prior to the emergence of attribution theory, researchers studied causal attributions from two perspectives—perceptions of the self and perceptions of others. Self-perceptions of causality involve the cause, controllability, and stability of an outcome event that happened to that particular person. Early studies that examined self-focused causal attributions focused on

anagrams (Elig & Frieze, 1979), school and game performance (Frieze, 1976), and academic exams (Bar-Tal, Golderg, & Knaani, 1984; Willson & Palmer, 1983). Other-perceptions of causality involve cause, controllability, and stability of an outcome event that happened to another person, or group of people. Academic exams and art projects were the focus of early researchers on causal attributions of others (Frieze & Snyder, 1980), school performance of students (Burger, Cooper, & Good, 1982; Cooper & Burger, 1980), and a variety of hypothetical situations (Anderson, 1987). While the previously mentioned studies are dated, they do provide a snapshot into early understanding of causal attributions of both the self and the other.

Attribution theory was also used to study social obligations. Weiner, Amirkhan, Folkes, and Verette, (1987) investigated times in people's lives when they made the choice to *not* fulfill a social obligation; the study identified instances where people gave both truthful (e.g., I did not want to go; I forgot) and false (e.g., my car broke down) reasons for not fulfilling social obligations. The results revealed a consistent pattern of good excuses being connected to external and uncontrollable reasons, and bad excuses being connected to internal and controllable reasons (Weiner et al., 1987). For the people who had to wait or were forgotten about, internal controllable excuses resulted in negative emotional reactions, increased negative personality ratings of the other person, and a desire for no further social contact, when compared to external uncontrollable excuses for being late. In the late 80s Weiner (1987a, 1987b, 1987c) wrote three book chapters that underscored the key role of emotion in the theory of motivation; anger, pity, guilt, and shame tended to influence people's behaviors in certain positive and negative ways.

The underlying connection between stigma and attribution first surfaced in the late 80s. Weiner, Perry, and Magnusson (1988) examined perceived controllability and stability of the

cause of 10 stigmas in two studies. In study one the researchers found physically based stigmas (discredited stigmas) were perceived as uncontrollable and elicited higher degrees of pity, no anger, and support from people, compared to mental-behavior stigmas (discreditable stigmas). Physically based stigmas were also perceived to be stable and irreversible, whereas mental-behavior stigmas were generally considered unstable and reversible (Weiner et al., 1988). In the second study Weiner and colleagues (1988) manipulated perceptions of controllability. Controllable vs. uncontrollable attributions about the outcome of an event affected resulting emotions and behavioral judgments (Weiner et al., 1988). In the same year the connection between attribution and stigma was revisited again.

Attribution theory was used as a way to change stereotypes and discrimination toward people with AIDS as early as the late 80s (Weiner, 1988a). Weiner focused on refining the historical aspect of attribution theory by highlighting how perceived causality of people contracting AIDS influenced people's affective reaction and subsequent response. Weiner (1988a) confirmed (at the time) people who perceived AIDS to be controllable admitted to feeling anger toward individuals with the health condition, whereas individuals who perceived AIDS to be uncontrollable felt sympathetic toward them. Both anger and sympathy led to intentions of neglect and desired avoidance of people with AIDS (Weiner, 1988a).

In the late 80s Weiner (1988b) also critiqued a therapeutic technique called attributional therapy. Attributional therapies are channeled by the idea that thoughts guide behaviors, and a change in thinking should produce a change in action (Weiner, 1988b). The goal of attributional therapists was to reframe causal ascriptions to be adaptive, rather than dysfunctional, with the thought that this would change individuals' behavior. For example, if someone had low self-esteem because they believe the problems they face are their fault, this will give rise to lower

expectations for future success. If an individual can reframe the cause of the problem to be about external events that are out of their control, they will continue to hope that their experiences will be more positive in the future—thus giving them the motivation to “carry on.” Weiner (1988b) argued attributional therapists should more carefully consider the complex concepts within attribution theory when providing attributional therapy to clients.

The investigation of cultural comparison regarding attributions also occurred. Stipek, Weiner, and Li (1989) tested attribution-emotion relations among Chinese participants; the findings were replicated with American participants. First, high effort and success enhanced interpersonal evaluations when ability, effort, and outcome information were provided; second, affective communication of pity, anger, and guilt were respectively used to infer low ability, lack of effort, and teacher as causes of failure; third, effort and ability levels were inferred from the presence or absence of anger reactions; and fourth controllable causes of a broken social contract were expected to result in anger from others (Stipek et al., 1989). Stipek and colleagues (1989) realized Chinese emphasize effort over ability when determining the cause of achievement outcome. Chinese people de-emphasized the importance of personal achievement and stressed group goals and accomplishments—a common distinction of a collectivist mentality (Stipek et al., 1989).

Others studied cross-cultural differences of attribution theory. Schuster, Forsterlung, and Weiner (1989) conducted a cross-cultural examination of the cause of success and failure, focusing on taxi drivers and civil servants from five nations (Belgium, West Germany, India, South Korea, and England). The participants rated 22 causal ascriptions (including ability, effort, task, difficulty, and luck) across four causal properties (cause, controllability, stability, and globality). Schuster and colleagues (1989) found high agreement between the two social

class groups, as well as across four of the five nations. Interestingly, Indian respondents rated all causes as more external, variable, and uncontrollable than participants from other cultures (Schuster et al., 1989), suggesting culture plays a role in understanding how people make attributions.

The 1990s

In the 90s, attribution theory's legacy started off with an influential book about its applications to achievement, mental health, and interpersonal conflict. Weiner (1990) wrote the opening chapter of the book titled: "Searching for the roots of applied attribution theory" (p. 1). Weiner explained that an unexpected consequence of attribution theory's growth has been a corresponding growth in the theory's applications to everyday problems and concerns (1990); this is logical because Lewin, a practical theorist, heavily influenced Weiner's work. He was also heavily influenced by Rotter and his personality approaches; Weiner closely upheld Heider's original attribution conversation from the 1970s and earlier (Weiner, 1990).

To recap the development of attribution theory, Weiner (1990) reflected on how the framework emerged. Festinger's theory of cognitive dissonance provided a dominant research paradigm for social psychology in the 1960s, offering a non-commonsense approach to attitude formation, which changed based on the "fit" between cognitive elements (Weiner, 1990). Heider and Kelley's work on attribution theorization overcame dissonance as the dominant paradigm within social psychology in the 1970s. The concept behind attributions was popular for two reasons: 1) it was concerned with epistemology, or how people know, and 2) it relied on the nonobvious; people are accepted as attempting to be rational, guided by their inferences by informational inputs, and directed in their actions by naïve psychological beliefs (Weiner 1990). From this point on, attribution theory's development split into an emphasis on either: 1) intricate

theoretical concepts and relations, or 2) applied purposes. The current study drew upon attribution theory for its applied purposes to better understand the presence and effects of attributions of ASD.

Graham and Barker (1990) built upon the applied development of attribution theory in their multi-study investigation of the downside to help. Children 5-12 years old viewed videotaped teaching sessions depicting two boys working on math problems (Graham & Barker, 1990). One boy received assistance from the help giver and the other received no help. The children (except for 4-5 year olds) believed the boy who received help had lower ability than the one who received no help; additionally, children elected to choose the boy who received no help as their work partner because he was believed to have a higher ability (Graham & Barker, 1990).

The relationship between attributions and stigma resurfaced in the early 90s. Schwarzer and Weiner (1991) investigated people's affective reactions and intended social support toward eight disease-related stigmas (heart disease, cancer, AIDS, obesity, anorexia, depression, child abuse, and drug abuse). The researchers manipulated the onset of stigmas—controllable or uncontrollable—and randomly assigned participants to a vignette about the preventability of a stigmatized disease (Schwarzer & Weiner, 1991). Participants were asked to rate whether the people in the vignette were coping or not. People perceived others were coping positively with the stigma of their disease, no matter if it was controllable or uncontrollable; additionally, help giving was mediated by people's affective reactions (i.e., antagonistic vs. sympathetic) for the stigmatized individuals (Schwarzer & Weiner, 1991).

As the 90s progressed, interest grew in how emotions were related to “multiple causality”—a number of causes contributing to the occurrence of an event. Llu, Karasawa, and Weiner (1992) investigated attributions as the cause of resulting negative and positive emotions.

A series of three experiments examined inferences about the presence of additional causes (multiple causality) when the emotions evoked by an event were either positive or negative (Llu et al., 1992). In a major event, positive emotions were more likely than negative emotions to generate inferences of additional potential causes. Intense emotional reactions and reactions to minor events produced perceptions of an increased number of contributing causes than mild emotional expressions and emotional reactions to major events (Llu et al., 1992). Therefore, people who experience mild emotions (e.g., mild sympathy, antagonistic feeling, hopefulness, hopelessness) regarding a major event (e.g., diagnosis of ASD) tend to attribute less sources of the cause—they tend to look for one cause and be satisfied—internal or external.

The year of 1993 largely focused on attributions of AIDS, with additional interest in culture and poverty. Principles of attribution theory were used to analyze public reactions to the health status of Magic Johnson (Graham, Weiner, Giuliano, & Williams, 1993). Weiner (1993a, 1993b) elaborated on AIDS from an attributional perspective. Murphy-Berman and Berman (1993) examined the effects of attributions of responsibility for illness and social acceptability on reactions to people with AIDS across cultures. Finally, attribution theory was used to relate causal explanations for poverty to affect and behavioral intentions (Zucker & Weiner, 1993).

In 1994 Weiner revisited his original interest about achievement (see Weiner 1990). The study examined moral determinants of achievement evaluation. Conceptual analysis about the distinction between ability and effort are offered in which responsibility inferences and affective reactions play key roles mediating the relationship between causal attributions and evaluation (Weiner, 1994). Responsibility for achievement failure, perceived fairness of achievement evaluation, and what adolescents communicate to peers after achievement outcomes, were

examined. Weiner (1994) explained achievement is viewed as a moral system, and argued for different research directions from those that have dominated the field in the past.

From 1986 to 1996 Weiner and his colleagues continued to refine attribution theory. At this point, one of the most prominent patterns that had arisen was judgment of responsibility.

Weiner (1995) wrote a book about judgments of responsibility:

My goal of this book has been to identify some of the rules of motivation. The empirical facts I have used to derive these principles have come from studying people's evaluation of achievement, their reactions to people who have been stigmatized, the way they give help to others, their aggression, and the way they manage others' impressions of them by making excuses and confessing. (p. xi-xii)

Weiner wrote about concepts of stigma and judgments of responsibility toward 'othered' groups, drawing many examples and findings from investigations regarding people with AIDS and mental illness (1995). Weiner (1995) set the stage for another decade of dynamic research that would continue to investigate the relationship between attributions, emotions, and actions.

Becoming more curious about the extent of the attribution—emotion—action relationship, Weiner, Graham, and Reyna (1997) examined two basic goals of punishment: retributive and utilitarian. Punishment goals are mediated by expectancies and affects that are elicited by causal beliefs, and purposes of punishment are more state-like than trait-like, because they change as a function of the treason for wrongdoing. Caprara, Pastorelli, and Weiner (1997) further examined linkages between causal ascriptions, emotions, and behavior. Researchers recruited Italian schoolboys between the ages of 9 and 10. Following teacher feedback embedded with anger or sympathy for failure, the schoolboys were asked to report their attributional inferences regarding low ability or lack of effort as the cause of their failure

(Caprara et al., 1997). Anger elicited by the teacher resulted in students' attribution of the cause of failure to low effort, whereas sympathy from the teacher resulted in student attributions of lack of ability. Results revealed teacher sympathy hinders students' motivational abilities to excel (Caprara et al., 1997). From a teaching perspective, this article supports the approach to hold students to high standards because in the end they will perform better and grow more.

Teacher response to learning disabilities has also been examined from an attributional perspective. Clark (1997) identified student ability and effort as key causes of achievement outcomes resulting in: 1) teacher affect, 2) evaluative feedback, and 3) expectations of future performance. A total of 97 elementary school teachers (84 women; 13 men) rated reasons for test failures of boys with and without learning disabilities. In most cases greater reward and less punishment, less anger and more pity, and higher expectation of future failure, followed test failure for boys with learning disabilities, when compared with nondisabled students (Clark, 1997). These results suggested the learning disability label acted as the cause of an achievement outcome in the same way as ability and effort. This pattern of teacher affect and response can send negative messages that are often interpreted as low ability cues, thus affecting students' self-esteem, sense of competence as learners, and motivation to achieve (Clark, 1997).

Struthers, Weiner, and Allred (1998) investigated the effects of causal attributions on personnel decisions in organizations. In particular, the researchers examined the effects of ability (low, high) and effort (low, high) causal information on an employee's poor work performance (Struthers et al., 1998). Each performance-appraisal vignette elicited a unique decision profile (e.g., reprimand, fire, console; Struthers et al., 1998). While these results were obtained from college students who played the role of personnel managers, they were replicated using another sample of individuals with actual personnel management experience in a follow-up

study (Struthers et al., 1998). To examine the extent to which certain personnel decisions are mediated by cognitive and affective variables, structural equation modeling was used; emotions mediated the relationship between attributions and actions (Struthers et al., 1998).

To complete the 90s, Hine and Montiel (1999) examined attributions of poverty in developing nations. A survey of anti-poverty activists and non-activists in Canada and the Philippines was conducted to assess their belief about the causes of poverty (Hine & Montiel, 1999). Respondents' poverty attributions centered along five main dimensions: exploitation, character weaknesses of poor, natural causes, conflict, and poor government. Path analysis suggested attributions mediated the relationship between social ideology and participation in anti-poverty activism (Hine & Montiel, 1999). This study illustrates the power attributions have on actions, as well as the power emotions have in mediating or strengthening that relationship.

In the 1980s and 90s attribution theory was refined and applied to a variety of contexts. First, the causal chain between attributions, emotions, and behaviors was refined (Caprara et al., 1997; Llu et al., 1992; Weiner et al., 1997). Second, attribution theory was applied to achievement contexts (Clark, 1997; Struthers et al., 1998; Weiner, 1990, 1994). Third, attribution theory has illuminated how stigmatizing attitudes and discriminatory actions emerge in terms of AIDS (Graham et al., 1993; Weiner 1993a, 1993b), mental illness (Weiner, 1990), disabilities (Graham & Barker, 1990; Schwarzer & Weiner, 1991), and poverty (Hine & Montiel, 1999). The following section traces the development of attribution theory throughout the 2000s into the present.

The 2000s

For attribution theory the millennial change actually began with concern for attributions about disabilities. In particular, Clark and Artiles (2000) executed a cross-national study

examining patterns in teachers' attributional response to outcomes of students with and without learning disabilities. Teachers from elementary schools in California and Guatemala City were asked to respond to a series of eight vignettes about students who failed a test—four of the vignettes involved disabled children, and four involved normally functioning children (Clark & Artiles, 2000). The vignettes provided three types of information: a statement of student ability (high or low), typical effort (high or low), and disability status (learning disability or no learning disability). Teacher responses of evaluative feedback (reward or punishment), emotional reaction (anger or pity), and expectations of future failure (Clark & Artiles, 2000) revealed cross-cultural differences. U.S. teachers consistently assigned more reward and less punishment to boys with and without learning disabilities, compared to Guatemalan teachers; disabilities played a limited role in shaping assignment of reward and punishment in both cultures (Clark & Artiles, 2000).

At the turn of the century, genetic testing emerged in the study of attribution theory. Menec and Weiner (2000) examined the effect of birth outcomes on observers' reactions to genetic testing. In particular, participants read a scenario where a woman declined to take a genetic screening test and subsequently gave birth to a child with a genetic disorder (negative outcome) or a healthy child (positive outcome). Retrospective judgments of the likelihood that a child would have a genetic disorder were higher given the negative over the positive outcome knowledge under conditions of high genetic risk. Moreover, the more likely a negative outcome was perceived to be, the more responsible the mother was held for not taking the genetic screening test. Consistent with Weiner (1995, 1996), responsibility judgments were linked to displeasure and sympathy, and sympathy was related to helping judgments.

The following year researchers began to turn their attention to child abuse and low-income families. Attribution theory predicted when a person is perceived as responsible for a negative event, this inference elicits feelings of anger, which evokes an aggressive response; whereas non-responsibility is linked to feelings of sympathy and less aggression (Graham, Weiner, Cobb, & Henderson, 2001). In individual interviews, samples of abusive, at-risk, and non-abusive African American mothers were presented with videotaped scenarios depicting a target child engaged in misbehavior. Mothers rated the severity of this behavior, how responsible they perceived the child to be, their feelings of sympathy and anger, and how much punishment they would endorse, coded as mild to harsh (Graham et al., 2001). They also completed a measure of parental stress (Graham et al., 2001). Abusive mothers reported more stress, perceived the behavior as more negative, inferred the child to be more responsible, reported more anger, and endorsed harsher punishment, when compared with at-risk and non-abusive mothers (Graham et al., 2001). This study used path analysis to document a pattern of attribution, emotion, and action.

Naturally after about a decade and a half of theoretical refinement attribution theory as a framework greatly benefitted from a meta-analysis. Roesch and Weiner (2001) conducted a meta-analytic review assessing the relationship between causal attributions, coping, and psychological adjustment in individuals with physical illness or undergoing medical procedures. A total of 27 studies were analyzed; internal, preventable, and unstable attributions were indirectly associated with positive psychological adjustment through emotion-focused coping (Roesch & Weiner, 2001). Additionally, stable and uncontrollable attributions were indirectly associated with negative psychological adjustment through avoidance coping (Roesch & Weiner,

2001). Attributions appeared to guide motivated cognitions and behaviors within the context of illness, and were related to specific coping strategies.

The concern for HIV and AIDS arose again in the early 2000s. Cobb and de Chabert (2002) argued the discovery of HIV/AIDS prompted a heightened concern for the quest to detect a cause for the disease. However, the bulk of research emphasized behavioral risk factors, treatment and disease progression, and researcher efforts. Cobb and de Chabert (2002) examined the public's attitude toward individuals who are HIV-positive or have developed AIDS; a total of 46 HIV/AIDS social service providers (28 female and 18 male) were asked to read a hypothetical scenario that depicted an individual at-risk for HIV/AIDS because of multiple high-risk behaviors. Social service providers who perceived individuals as more responsible for their illness reported an increase in anger, attributed more blame, and expressed less willingness to help those at risk (Cobb & de Chabert, 2002). Despite growing numbers of media campaigns and national distribution of information regarding the HIV/AIDS and its transmission, "people continue to stigmatize and place blame on those at-risk" (Cobb & de Cabert, 2002, p. 545).

Dijker and Koomen (2003) furthered the line of research regarding stigmatization of mentally ill people. In Weiner's attribution—emotion model of stigmatization (Weiner, 1996; Weiner et al., 1988), pity and anger reactions to ill or handicapped individuals are primarily determined by beliefs about personal reasonability for onset of their condition. Dijker and Koomen (2003) argued both pity and anger are also caused by valance of behavioral cause and seriousness of the illness and that anxiety is an additional emotional consequence of these perceptions. This particular article focused on theoretical and practical models of stigmatization, building upon replicated findings of Weiner et al. (1988).

In 2004 Weiner resonated the argument of transforming attribution theory as a vehicle to achieve cultural plurality. In an applied sense, Henry, Reyna, and Weiner (2004) tackled the problem about “how people hate welfare but help the poor” (p. 34). The attributional content within stereotypes of welfare recipients, particularly their greater responsibility for impoverished state compared with poor people, had the largest impact on the public’s more negative reaction to welfare (Henry et al., 2004).

Weiner (2005) argued for the need to further refine motivation from an attribution perspective. Weiner presented his model of attribution theory (originally discussed in 1986), and proceeded to explain how attributions influence feelings, and these feelings mediate subsequent actions (Weiner, 2005). Weiner (2005) concludes the chapter by noting “I have played a different game and introduced a different theme, one capturing not psychology of the competent or incompetent person, but rather the psychology of others viewing that individual” (p. 83). Weiner attested to the importance of studying the psychology of how people view “others” or marginalized groups, including people with disabilities.

Greitemeyer and Weiner (2006) explained their previous research demonstrated people’s compliance to commit a transgression for an anticipated reward, as opposed to an anticipated punishment, resulted in greater influence of personal responsibility (see Greitemeyer & Weiner, 2003). Greitemeyer and Weiner (2006) extended these findings to a courtroom context where punishment decisions were made. In the first study, a nurse who administered a non-approved drug was perceived as more responsible, and more severe punishment decisions were recommended given compliance for an offered reward relative to a threatened punishment (Greitemeyer & Weiner, 2006); these findings were replicated in a second study.

Less than ten years ago Weiner (2006) published a book about attribution theory: *Social motivation, justice, and the moral emotions*. In this book he sets forth two rules: 1) to not hide any light under the barrel; to be a salesperson and “put my best foot forward; to be forceful and certain; and 2) to not hide any shortcomings; to be aware of justified criticisms; to be realistic and honest, and recognizing limitations and shortcomings” (Weiner, 2006, p. xv). Weiner clearly wanted to make a statement about the ethicality behind his theory, and pride that he brought with it. The book provided a detailed account about how attributions play a role in moral decisions, including the courtroom. Weiner (2006) powerfully demonstrated attributions play a role in community members’ daily decision, which influences the lives that are being decided upon.

In the late 2000’s researchers furthered Weiner’s (2006) interest in morality attributions. Greitemeyer and Weiner (2008) investigated the asymmetrical effects of rewards and punishment on attributions of morality; compliance with a pro-social request for an anticipated reward, as opposed to a threatened punishment, resulted in greater inferences of personal morality. In one experiment researchers found participants perceived a TA (offered reward or threatened with punishment) as moral for complying given the positive incentive as opposed to the negative incentive. In a second experiment these findings were replicated in a different culture. In a third experiment researchers found the perceived actor’s real intentions mediated the effect of incentive valance on dispositional causation (Greitemeyer & Weiner, 2008). Attributions of morality were influenced through the involvement of reward and punishment.

A re-examination of common-sense psychology emerged in 2008. Reizenzein and Rudolph (2008) published an article in the special issue of *Social Psychology*, commemorating the 50th anniversary of Fritz Heider. Alexius Meinong and Ernst Cassirer influenced Heider’s

analysis of causal attributions and common-sense psychology. The research team investigated the reception of Heider's book, finding an indication of a "Back to Heider" movement in social psychology; this new phase of attribution research inspired a fresh reading of Heider's book, and marked a spark of interest in interdisciplinary orientations and applications (Reisenzein & Rudolph, 2008). This article brings to light several attribution research topics, both classic and novel: 1) the causality implicit in language, 2) the role of causal attribution in insight bias, 3) the justification of actions, and 4) the attribution of mistakes in organizational contexts (Reisenzein & Rudolph, 2008). Attributions are influenced by implicit language, those attributions bias insight and thought, and provide justification for actions—yet again attributions demonstrate their powerful influence.

In 2008 the examination of attribution theory continued. Weiner (2008a) wrote about how an attribution theorist addresses the co-existence of "theoretical generality" and cultural specificity. Additionally, Weiner (2008b) discussed the theoretical co-existence vs. integration, considering the relation between attribution theory and internal norm theory. The connection between the two theories was determined by the definition given by internal norm theorists, to the concept of "value," in that value connotes future expectancy of success (Weiner, 2008b). Finally, Weiner (2008c) offered a reflection of the history of attribution theory and research. Fifty years after Heider's (1958) publication, attribution inquiry still remained strong (see Weiner, 2008c). Weiner (2008c) examined the people, publications, and conceptual issues that contributed to the duration of this line of work—Heider, Jones, and Kelly.

Weiner (2010) elaborated on a history of ideas, outlining the development of attribution theory, the theory of motivation. Weiner describes these influences including the search for a "grand" theory of motivation (from drive and expectancy/value theory), an attempt to represent

how the past may influence the present and future (as Thorndike accomplished), and the incorporation of causes and their properties (from Heider & Rotter). The main message involved an emphasis on how attribution theory was applicable to a variety of contexts; attributions people settle on are a result of their faint thoughts about serious societal issues (Weiner, 2010).

Bobbio, Canova, and Manganeli (2010) examined the effects of conservative ideology, social dominance orientation, right-wing authoritarianism, and economic conservatism scales, on internal and external causal attributions for poverty and wealth. Results revealed economic conservatism influenced internal cause attributions for poverty and wealth positively but influenced external cause attributions negatively (Bobbio et al., 2010). It is interesting that people who gravitate toward conservative ideologies also appear to connect with internal cause attributions. Only social dominance orientation showed a negative effect on external causal attribution (Bobbio et al., 2010).

Wickens, Wiesenthal, Flora, and Flett (2011) examined applicability of attribution theory in understanding driver anger and aggression. Two studies used path analyses to uncover the relationships between attributions, feelings, and actions—both studies revealed replicable results (Wickens et al., 2011). As this study was particularly geared toward driver safety and aggression, the results suggest attributional-retraining programs to combat self-serving attributional bias, teaching novice drivers about both formal and informal roadway communication, and promotion of forgiveness among drivers.

Another attribution related question researchers have pondered involves factors that influence people's judgments about whether another person deserves to be sick. Nudelman and Shiloh (2011) had 200 participants complete questionnaires assessing their belief in a just world and causal attributions and fairness judgments for 42 illnesses classified by behavioral,

environmental, or hidden categories. The researchers correctly predicted that belief in a just world was positively correlated with all fairness judgments; environmental causes were judged to be fairer than internal or hidden causes. In the past decade, literature on belief in a just world emphasized its role as a positive coping mechanism (Dzuka & Dalbert, 2000). If the world is just, there must be a fair reason for illness; and if the cause of illness is fair then the world must be just. This bi-directional confirmation of beliefs satisfies the need for coherence and may be adaptive for regulating fear in health conditions; it may also motivate individuals to engage in adaptive health behaviors in order to feel safe and not feel “deserving of illness” (Nudelman & Shiloh, 2011).

Moorman and Wicks-Smith (2012) examined attributions of poverty and associated discrimination among classmates. Some instructors feel that allowing students to evaluate one another’s schoolwork encourages them to assume ownership of the educational process; while others feel that this practice is problematic because classmates are given control of each other’s educational development and assessment (Moorman & Wicks-Smith, 2012). Moorman and Wicks-Smith (2012) surveyed 235 undergraduate students; 32% were willing to rate presentations made by classmates who they perceive to be less-wealthy more harshly than presentations made by students perceived to be wealthier (Moorman & Wicks-Smith (2012). These results hold serious implications for classroom activities that involve student evaluations contributing to other students’ grades, and suggest instructors should be educated on this perceptual bias in an effort to avoid grading.

The effect of attributions regarding people with AIDS was recently investigated (Zhang, Rivkin, & An, 2013). Zhang and colleagues (2013) examined responsibility judgments and responses to people living with AIDS in China. A total of 309 students read one of two

scenarios describing an AIDS patient in which controllability of contracting the illness was manipulated (Zhang et al., 2013). Results revealed controllability of AIDS onset contributed to responsibility judgments, less positive affect, and lower desire to personally interact with the patient; responsibility judgments predicted interaction wishes directly and indirectly from participants reported emotions (Zhang et al., 2013).

After over three decades of theorizing, refining, and applying attribution theory, the “historical” nature of attribution theory is no longer in question. Attributions influence emotions and actions. Emotions also strengthen (mediate) the relationship between attributions and actions. Evidence for both direct and indirect effects of attributions is strong. Attribution theory has proven to be a valuable framework when investigating how people’s perception of cause, preventability (controllability), and stability of a health issue or prominent disability influences their feelings toward the condition, and actions toward that particular group of people. This research suggests attributions that appear in news media effect people’s emotions and actions. The following section expands on this concept by highlighting how attribution theory has been used in nuanced ways—such as investigation of the presence and effect of attributions in news media.

Applying Attribution Theory to News Media

After combing through decades of attribution research it is important to highlight a particular vein that has focused on the presence and power of attributions in news media. The current study is concerned with how attributions of ASD portrayed in news media may have patterns in terms of content and effects. The remainder of this section features a number of scholars who have demonstrated how attributions in news media can be observed and their effects can be studied.

Early on, Lau and Russell (1980) analyzed causal attributions separately for wins and losses (the outcome), and determination of whether the outcome was expected or unexpected. Expectancy was operationalized by the odds in a game as established by a recognized gambling agency; no significant differences were found, but the unexpected outcomes elicited a greater number of attempts to explain than did expected results (Lau & Russell, 1980). Lau (1984) examined attributions for certain sports teams over time. A total of 2,269 attributions were identified within 176 articles; 12.9 attributions per article (Lau, 1984). While no differences in attempts to explain unexpected vs. expected outcomes occurred, more attributions were made for losses than victories (Lau, 1984). These results contradicted Lau and Russell's (1980) findings that suggested unexpected outcomes would receive a greater number of causal attributions than expected outcomes. However the number of attributions continued to increase with time (e.g., nearness to the end of the sports season).

Several years later Andreassen (1987) argued news media and financial reports that include causes of changes in the stock market (rise vs. fall) influences the degree to which people believed the change was here to stay, or only temporary. People make attributions about many daily things, developing patterns of their attributional decisions. Andreassen (1987) points out the stock market may increase one day, and decrease the next; it may also increase and continue to increase, or decrease and continue into recession. The way the news media covers these stock market changes influences whether people have increased regressive thinking (people behave as if the recent change will reverse quickly in the future) or less regressive predictions (people behave as if the recent change is the first of a complete change in the market) (Andreassen, 1997). Media and financial reports should be particularly careful when attributing cause to rises and

falls in the stock market because these attributions influence community members' financial choices and investments.

McClure and colleagues (2001) argued people are less likely to prepare for earthquakes and other disasters if they make fatalistic attributions for earthquake damage; the way news media and public agencies present information about disasters may contribute to fatalistic attributions and judgments that the damage cannot be prevented. Attribution theory explains the distinctiveness and consensus of co-varying events shape attributions (Weiner, 1986). In a series of four studies, McClure and colleagues (2001) manipulated news story coverage about the distinctiveness of damage to a target building relative to other buildings and how much other earthquakes had damaged similar buildings to the target building (consensus and consistency). The conditions with high distinctiveness and high consensus and consistency enhanced attributions to building design and judgments that damage was preventable (McClure et al., 2001). Fatalism could be reduced and preventive action could be facilitated by the way information about disasters such as earthquakes is delivered (McClure et al., 2001).

Recently the use of a death metaphor in business news was studied. The goal was to assess the impact the death metaphor had on community members' attributions of responsibility for corporate failure (Williams et al., 2011). Death metaphors are used in financial press coverage and influence audience members' responsibility attributions by intensifying overall levels of blame, while simultaneously deflecting blame away from executives responsible for managing the firm (Williams et al., 2011). The inclusion of death metaphors appeared to diffuse blame to other factors including the current state of the economy, the government, and individual consumers (Williams, et al., 2011). These findings indicate intricate language choices made by

journalists and supported by news organizations do in fact influence community members' perception of societal issues.

Scholars have investigated attributions present in news media coverage about trans fat, health risks, and policy responsibilities (Jarlenski & Barry, 2013). A census of news stories focusing on trans fat was collected from the two largest circulating U.S. newspapers and three major television networks from 1998 to 2008, yielding a sample of 156 articles (Jarlenski & Barry, 2013). Findings revealed news media served an important agenda-setting role in educating the public about the presence of trans fat in American diet and describing the health risks these foods pose (Jarlenski & Barry, 2013). In addition, news media coverage framed attributions of responsibility for solving the problem of trans fat in the food supply (Jarlenski & Barry, 2013).

Recently scholars examined news media coverage about who is “to blame” for ASD. Researchers conducted a content analysis of 281 newspaper articles about the controversial medical study linking measles, mumps, and rubella (MMR) vaccination with ASD (Holton et al., 2012). Criticism of the Wakefield et al. (1998) study and its potentially negative impact on vaccination rates across multiple countries, the researchers sought to examine actors to whom the news media attributed blame for the MMR-vaccine association (Holton et al., 2012). News media did attribute blame in health risk coverage about ASD and the MMR vaccine, and the responsibility ascriptions played a key role in shaping public behavior regarding decisions to vaccinate children (Holton et al., 2012).

Summary

The powerful theoretical concepts of attribution theory can be studied in the context of news media. The literature review chapters provided extensive information about: 1) media

framing, 2) signaling “stigma” cues in news media, 3) attributions of ASD, 4) attribution theory, and 5) attributions in news media. Scholars have furthered each of these research areas in a variety of ways, at times crossing paths and uncovering intriguing relationships.

To recap, chapter 2 highlighted framing literature and how news media is capable of constructing social issues of: politics (Baysha & Hallahan, 2004; Coe, 2013; Edy & Meirick, 2007; Ellithorpe et al., in press; Gray & Lowery, 2000; Gorp et al., 2009; Iyengar, 1991; Kiouisis, 2003; Olds, 2013; Smith et al., 2001), health (Clarke & van Amerom, 2008; Donelle et al., 2005; Gollust et al., 2013; Kenterelidou, 2012; Leask et al., 2010; Wise & Brewer, 2010), and even disabilities like ASD (Autism Speaks, 2013; Baker, 2011; Broderick and Ne’eman, 2008; Chamak, 2008; Grinker, 2007; Holton et al., 2014; Itkonen & Ream, 2013; Jaarsma & Welin, 2012; Jordan, 2010; Kang, 2013; Laidler, 2004; McKeever, 2012; Ortega et al., 2009).

Chapter 2 also highlighted how news media may portray signaling “stigma” cues that could contribute to societal discrimination of disabilities such as ASD through intricate journalistic language choices (Holton et al., 2014; Kang, 2013; McKeever, 2012). Journalists embed these language choices in news stories based on their training of journalistic practices (Drewnoski, 2009; Entman, 1993; Holbert et al., 2005; Iyengar, 1991; Kang et al., 2010; McCombs, 1997, 2004), and these language choices may be absorbed by community members (Boykoff, 2007; Edy & Meirick, 2007; Reese, 2007; Scheufele & Tewksbury, 2007). Chapter 2 concludes by discussing how attributions about the cause, preventability, and stability of ASD frequently appear in news media in confusing and often contradictory ways.

Chapter 3 provides a detailed account of the theoretical origin and historical development of attribution theory. According to attribution theory (Weiner, 1986), attributions community members have about ASD may influence their feelings toward the disability, and behavior

toward people with this condition. Nuanced research approaches have studied attribution theory from the vantage of news media (Andreassen, 1987; Bae & Park, 2011; Ben-Porath & Shaker, 2010; Connolly-Ahern et al., 2010; Holton et al., 2012; Jarlenski & Barry, 2013; Major, 2009; McClure et al., 2001; Palazzolo & Roberto, 2011; Williams et al., 2011).

Chapter 4 brings to light two salient factors associated with news media that could potentially cause differences in news media coverage about ASD—circulation and changes over time. This chapter then provides clear operational definitions for key variables in Study 1 and 2. Finally, Chapter 4 sets the stage for the relevant hypotheses for Study 1 and 2.

CHAPTER 4. LITERATURE REVIEW: KEY FACTORS AND DEFINITIONS

Literature indicates certain media factors may play a role in how social issues are portrayed, such as the presence of attributions of ASD or the presence of signaling “stigma” cues. While many factors may be important to consider, researchers have pointed to two predominate factors that seem to influence the way news coverage of health issues are framed—circulation and changes over time. The following section discusses recent research that suggests circulation and timeframe play a role in media coverage of important societal issues.

Circulation

Arthur (2012) demonstrated news media coverage about certain health issues varied based on circulation (national vs. regional) of a particular news media organization. Publications with national circulation (over 1 million copies circulated on a daily basis) tend to emphasize societal level aspects of health issues (e.g., policy, programs, resources), whereas publications with regional circulation (less than 1 million copies circulated on a daily basis) provide details about specific people, instances, and/or events (i.e., an individual’s disability, instances of neglect or abuse, details about other people involved; Arthur, 2012).

Researchers determined medical news frequently appeared on the front page of national newspapers in the U.S. (Lai, Lane, & Jones, 2009). Researchers collected articles using the online resource *Newseum* and analyzed front-page coverage of four prominent medical stories and a high-profile non-medical news story as a control in 2007 (Lai et al., 2009). National newspapers covered the four major medical stories on the front page approximately 68 to 78% of the time, whereas non-medical stories were covered on the front page 99.8% of the time (Lai et al., 2009). U.S. newspapers with the largest circulation (i.e., *Washington Post*, *Los Angeles*

Times, New York Times) contributed to 61.7% of the total appearance of medical stories on the front page (Lai et al., 2009).

Media coverage has been accused of unbalanced coverage regarding drugs, a framing approach that has shaped national drug policies (Belackova, Stastna, & Miovsky, 2011). A total of 8,380 Czech news media articles related to drugs and drug use were collected and coded in 2007 (Belackova et al., 2011). Belackova and colleagues (2011) found significant differences in drug-related coverage between certain media types and formats. TV and radio broadcasts were most likely to cover supply reduction issues, whereas tabloid journals, partisan press, and local newspapers featured crime-related drug coverage (Belackova et al., 2011). The researchers encouraged drug professionals to consider this information and work with local and national news organizations to more effectively communicate important information about balanced coverage of drug supply vs. crime-related coverage (Belackova et al., 2011).

In contexts outside of medicine and health, researchers identified news media portrayals of carnivores (panthers) affected public perception and support for conservation (Jacobson, Langin, Carlton, & Kaid, 2012). A content analysis of 513 local and statewide newspaper articles about Florida panthers published between 2003-2006 revealed local papers published significantly more news articles about panthers (Jacobson et al., 2012). Articles in local and statewide newspaper coverage used both episodic and thematic frames; local articles emphasized risks that panthers might harm people, pets, or livestock more than statewide papers, sensationalizing the risk of panthers (Jacobson et al., 2012). This study provided a snapshot into how media has socially constructed panthers as a societal risk, depleting societal support that could provide conservational resources for the carnivores.

Circulation of news media outlets influences how news stories cover health issues (Arthur, 2012; Lai et al., 2009), drug issues (Belackova et al., 2011), and even conservation issues (Jacobson et al., 2012). National and regional media coverage systematically prioritize news worthy issues in distinct ways. In addition to circulation, changes over time have surfaced as an important factor in news media coverage of societal issues.

Changes Over Time

The focus of journalists and news organizations continues to shift over time. What the society was interested in during the 1990s does not capture public attention in the same way today. Kang (2013) examined television news networks' coverage of ASD in terms of issues, sources, and personal or social responsibility from 1990 to 2010. Findings revealed the top three key issues identified were personal stories, stories about children, and discussion of the cause (Kang, 2013). Doctors were the most frequently interviewed sources, followed by family and ASD individuals; personal reasonability frame outnumbered the social one consistently across time (Kang, 2013). Even though personal responsibility was a dominant frame in the case of media coverage of ASD, social reasonability was also emphasized in issues, but often as the less prominent factor (Kang, 2013).

McKeever (2012) found news media coverage about ASD has changed framing emphasis over time; in a content analysis from 1996-2006 (the year the Combating Autism Act was passed) science frames decreased while policy frames increased. More so in recent years, medical, government, family, and nonprofit sources were referenced most commonly in news coverage and solutions were mentioned more frequently than causes (McKeever, 2012). The emphasis on solutions rather than on the cause of ASD is encouraging; yet current coverage still has a

significant lack of mobilizing information that could inform community members about how to proceed with the news messages (McKeever, 2012).

Holton and colleagues (2012) examined how news media portrayed blame regarding the condition of ASD over time. A total of 281 newspaper articles from 1998-2012 that covered the controversial medical study linking the MMR vaccination were analyzed (i.e., Wakefield et al., 1998); results revealed an emphasis on how news media attributed blame in health risk communication, and causal ascription played a central role in shaping public behavior (Holton et al., 2012). Peripheral (episodic/personal) and dominant (societal) attributions were compared over three time periods that represented key points in the controversy (Holton et al., 2012). Researchers observed a decrease in dominant/societal sources (dropping 16.5%), yet peripheral/episodic/personal attributions rose significantly for Wakefield and *The Lancet* (rising 12.1%; Holton et al., 2012). These findings suggest societal responsibility attributions dropped—environmental causes and societal decisions were believed to be less responsible for the occurrence of ASD, whereas individual/episodic/personal responsibility heightened (Holton et al., 2012). These findings suggest attributions emphasized in news media regarding the MMR-ASD controversy blamed Andrew Wakefield, and turned the focus on parents (Holton et al., 2012).

Crisis and risk researchers keep close tabs on how news media covers health and safety issues about food and potential health risk outbreaks; researchers have identified that consumer confidence changes over time depending on news media coverage (de Jonge, Trijp, Renes, & Frewer, 2010). Newspaper coverage of food safety issues affects consumer confidence in the safety of food safety incidents, in terms of intensity and recency (de Jonge et al., 2010).

Retention of information decreases over time and the effect of newspaper coverage on recall also decays over time (de Jonge et al., 2010).

Historical media coverage of societal issues such as ASD (Holton et al., 2012; Kang, 2013; McKeever, 2012) and health issues (de Jonge et al., 2010) change over time. Journalists and news organizations learn different practices and value different aspects of news presentation over time. Study regarding the news media coverage of ASD over time is worthwhile. The following section provides a summary of key constructs for the research, operationalizing each construct.

Key Construct Definitions

This research investigates how attributions of ASD and signaling “stigma” cues are portrayed in news media. People use media for health information, including forming and managing their attitudes and behaviors regarding the prevention, diagnosis, and treatment of illnesses (Tian & Robinson, 2009). Understanding how attributions of ASD are emphasized in news media is important because it could affect how community members perceive and respond to people with the disability (Chang, 2011; Holton et al., 2012). It is also important to understand how underlying signaling “stigma” cues of ASD are embedded in intricate language choices used by journalists and news organizations. After discussing theoretical and conceptual development of attribution and signaling “stigma” cues, the remainder of this section operationalizes key constructs in the context of the current research, news media coverage of ASD.

Attributions of ASD

Cause attribution. *Cause attribution* is defined as people’s perception regarding the source or origin of a condition, internal or external (Weiner, 1986). In the case of ASD, internal

cause is linked to any attribution related to the human body, whereas external cause may involve attributions related to the environment or situation. Examples of internal cause attribution in the context of ASD include: neurological systems, genetic systems, reference to “brain” systems, or mention of genetic duplication/deletion. Examples of external cause attribution in the context of ASD include: parental age, reference to “refrigerator moms,” fever, environment in general, toxins, mercury, food, vaccinations, non-genetic factors, and genes being “triggered” by some non-genetic factor.

Preventability attribution. *Preventability attribution* involves people’s general perception of whether a condition can be avoided, preventable or unpreventable (Corrigan, 2000). Preventability stemmed from Weiner’s (1986) concept of controllability, which involves an individual’s perception regarding another’s control (or lack of control) of behaviors or actions. While it is difficult to prevent ASD when the cause(s) are unknown, news media coverage still occasionally attributes whether the disability is preventable or not. Examples of news media reference to ASD as preventable include reference to parents, society, or individuals being able to make choices that would change the fact that people have ASD (e.g., preventing exposure, gene therapy, genetic counseling, choosing to abstain from having children after the age of 40). Examples of news media reference to ASD as unpreventable include mention that nothing could have been done to change the diagnosis of ASD, or that there is no hope to prevent the condition.

Stability attribution. *Stability attribution* is defined as people’s perception regarding the improvement or lack of improvement of a health condition (Corrigan, 2000). Some researchers argue that because ASD is a pervasive developmental disorder it is relatively stable in nature, and ASD individuals are unlikely to show signs of improvement (Ling et al., 2010). However other sources suggest symptoms may improve with certain treatments and diets (Klin

& Lemish, 2008; NIMH, 2012). Examples of news media reference to ASD as a stable condition include an emphasis on the fact that the disability has: no clear treatment, no cure, is a permanent condition, or lifelong condition. Examples of news media reference to ASD as an unstable condition include reference to: treatment, therapy, and activities to help the condition.

Signaling “Stigma” Cues

To reflect on earlier sections, signaling “stigma” cues are the way discreditable stigma might arise. Individuals with ASD have no visible symptoms that are generalizable; therefore the only way community members might form a judgmental or stigmatizing attitude toward individuals ASD is through public observation of their actions and behaviors, or intricate (judgmental) language choices seen in news media. News organizations and journalists should consider small language choices when discussing health issues like ASD because it is possible that the presence of signaling “stigma” cues in news media coverage about ASD may play a role in the social construction of the disability. While the four signaling “stigma” cues were defined earlier, their definitions are revisited because they are key constructs.

Labeling cue. *Labeling cue* combines the reference of ASD with unwanted associations through nouns and adjectives that connect the disability with abnormal qualities (Holton et al., 2014). As mentioned earlier, examples of negative descriptive words or phrases might include reference to the disability as a ‘chasm of autism,’ crazy, dark world of autism, devastating, isolating, not healthy, odd, and victim. These words and phrases are merely examples and this list is not exhaustive. It is also important to consider words in news media that are paired with ASD that are *not* considered labeling cues: pervasive, disorder, disability, mentally retarded, and mental retardation. These words and phrases are associated with an accurate description of the diagnosis (APA, 2011).

Social skill deficit cue. *Social skill deficit cues* are recognized through mention of limited or impaired social interactions or difficulties or delays in communication that obstruct an individual from social exchanges (Holton et al., 2014). As referenced earlier, examples of social skill deficit cues include disrupted communication, inappropriate social skills, lower intellectual and communicative ability, needing help with social things, reference to language problems, social delays, or social problems. Words or phrases *not* considered to be social skill deficit cues might include nonverbal, can't speak, mute, or barely speaks, because these words and phrases are accurately associated with certain ASD individuals' social skill abilities who are diagnosed as "nonverbal" (APA, 2011).

Aberrant behavior cue. *Aberrant behavior cues* can be seen through the inclusion of ASD individuals' emotional or behavioral responses to external stimuli (Holton et al., 2014). As mentioned earlier, aberrant behavior cues can be witness in news stories through reference to climbing on things (that are not for climbing), eating inedible objects, inappropriate actions or behaviors in general, inappropriate exposure, repetitive body movements, restricted behavioral abilities, screaming unexpectedly, self-destruction, self-injury, struggling with everyday behavior norms, thrashing, and wandering. It is important to note, terms or phrases not categorized as aberrant behavior cues involve reference to a behavioral change that is not unusual or deviant (APA, 2011).

Physical appearance cue. *Physical appearance cues* can be seen through mention of an ASD individual's stunted physical development, impairments, or abnormalities (Holton et al., 2014). As mentioned earlier, reference to physical appearance cues can be seen in news stories about ASD through reference to bleeding wrists, comparison to certain body types, disheveled hair, generally weird looking, mismatched clothing, and unusual marks. Journalists that used

terms or phrases not considered to be physical appearance cues were reference to behavioral choices that made ASD individuals *temporarily* look different (APA, 2011).

Additional Salient Factors

Circulation. Circulation is considered in terms of two levels—national and regional. As mentioned earlier, national circulation is defined as having a daily circulation in the U.S. that is consistently greater than one million, whereas regional circulation is defined as having a daily circulation in the U.S. that is consistently less than one million (Alliance for Audited Media, 2013). News stories are considered either national or regional according to these criteria.

Changes over time. This research operationalized changes over time by focusing on the timeframe of 1998-2013 because 1998 marked the first time ASD was launched into the forefront of mainstream public discourse through news media (see Wakefield et al., 1998). Since 1998, the steady increase in cases of ASD suggests it is imperative to examine how coverage of ASD has evolved over time (CDC, 2013).

CHAPTER 5. LITERATURE REVIEW: A DUAL EXAMINATION

The current research has two primary goals: 1) to investigate the presence of attributions of ASD and signaling “stigma” cues of the disability, and 2) to test the effects of attributions about ASD emphasized in news media coverage on community members’ feelings, behavioral intentions, and behaviors. In regard to the second goal, positively valanced feelings vs. negatively valanced feelings give rise to supportive behavioral intentions and actions vs. discriminatory behavioral intentions and actions, respectively.

Framing is considered a *communicative process* of production, content, and consumption—the “umbrella” concept of framing is useful in investigating what media content portrays, as well as the effects of that media content (de Vreese, 2005). In support of this line of thought, this research separates initiatives into two lines—providing the foundation for a mixed method study of content (Study 1) and effects (Study 2) about news media coverage of ASD. The remainder of this chapter presents hypothesis statements introduced by relevant syntheses of previously mentioned concepts and lines of inquiry.

Study 1: The Presence of Attributions and Signaling “Stigma” Cues of ASD in News Media Coverage

Study 1 examined the content of news media coverage regarding ASD. In particular, Study 1 investigated: 1) the association between the presence of attributions and signaling “stigma” cues in news media, 2) how attributions and signaling “stigma” cues appear in regard to circulation (national vs. regional), and 3) how they change over time. Summary statements set the stage for one hypothesis and four research questions.

Attributions and Signaling “Stigma” Cues of ASD

In the current research Study 1 suggests certain attributions of ASD and signaling “stigma” cues are associated. First, researchers have uncovered patterned associations in the presence of signaling “stigma” cues that appear in news coverage of ASD; in particular, they may be associated with certain episodic/thematic and gain/loss frames (Holton et al., 2014). All four signaling “stigma” cues revealed a positive relationship with loss frames, but no relationship with gain frames; additionally, signaling “stigma” cues were also positively related with episodic and thematic frames (Holten et al., in press). With evidence that signaling “stigma” cues appear in conjunction with certain media frames, it is plausible these cues may also appear in conjunction with the presence of certain attribution of ASD.

Attribution theory suggests while internal and preventable attributions lead to blame, permanency of something (stable attribution) leads to hopelessness (Weiner, 1986, 1995, 2006). Alternatively, external and unpreventable attributions lead to sympathy, and the chance for something to improve (unstable attribution) leads to hopefulness (Weiner, 1986, 1995, 2006). As journalists frame ASD, choosing to ascribe certain attributions of ASD in stories, it is plausible signaling “stigma” cues may appear more frequently when stories attribute the cause of ASD as internal, frame ASD as a preventable condition, and suggest the disability is life-long and permanent, as compared to external, unpreventable, and unstable attributions (Weiner, 1995, 2006). In order to examine the associations between attributions of ASD and signaling “stigma” cues in news media coverage of the disability, the following hypothesis was posed:

H1: Signaling “stigma” cues (labeling, social skill deficits, aberrant behavior, physical appearance) will be more likely to appear in conjunction with internal, preventable, and stable attributions as opposed to external, unpreventable, and unstable attributions.

Circulation

Scholars have shown circulation may play a role in the way social issues are portrayed (Arthur, 2012; Belackova et al., 2011; Jacobson et al., 2012; Lai et al., 2009). Society continues to witness a host of mixed messages about ASD in news stories (Hyman, 2012; Landigran, 2010; LKL, 2009; Mayo Clinic, 2013; McGovern, 2013; World Autism Views Project, 2011a, 2011b), but research has not investigated how news media outlets that vary by circulation may emphasize different attributions of ASD in coverage. News organizations typically encourage journalists to write in similar ways about social issues. (Autism Speaks, 2013; Baker, 2011; Broderick and Ne’eman, 2008; Chamak, 2008; Grinker, 2007; Holton et al., 2014; Itkonen & Ream, 2013; Jaarsma & Welin, 2012; Jordan, 2010; Kang, 2013; Laidler, 2004; McKeever, 2012; Ortega et al., 2009). It is possible nationally circulating news outlets may consistently emphasize different attributions of ASD than those with regional circulation, however research provides little indication of what these differences may be. In order to further investigate attributions of ASD emphasized in national and regional newspapers, the following research question is offered:

RQ1: How does the presence of cause (internal, external), preventability (preventable, unpreventable), and stability (stable, unstable) attributions in news media vary as a function of circulation?

The current research also suggests signaling “stigma” cues may differ in terms of circulation. Research suggests newspapers with smaller circulation numbers tend to draw upon sensationalistic news values, emphasizing the human-interest aspect of stories or “building up” conflict of a situation in effort to maintain readership (Arthur, 2012; Belackova et al., 2011; Burgers & de Graaf, 2013; Jacobson et al., 2012; Lai et al., 2009; Saguy & Almeling, 2008; Vettehen, Nuijten, & Beentjes, 2005). Nationally circulating newspapers hold more reassurance

their readership will continue by creating a pattern of frames to cover social issues (Chiang & Knight, 2011; Distaso, 2012; Major, 2009; Nemeth & Sanders, 2009). Along these lines of thought, it is likely regional newspapers concerned with drawing readership might imbue a higher degree of signaling “stigma” cues in news stories about ASD, when compared to national newspapers; however literature does not offer clear insight into whether this is the case. In order to shed light on the association between signaling “stigma” cues and circulation the following hypothesis of stated:

RQ2: How does the presence of signaling “stigma” cues (labeling, social skill deficits, aberrant behavior, and physical appearance) in news media vary as a function of circulation?

Changes Over Time

Timeframe has proven to be another key media factor that influences the way journalists and their news organizations choose to cover social issues (de Jonge et al., 2010; Holton et al., 2012; Kang, 2013; McKeever, 2012). In 1998 the media erupted with coverage about how ASD is caused by the MMR vaccine (Kite et al., 2013; Landigran, 2010; Ruta et al., 2012), an external cause. It is a parent’s choice to have their child vaccinated with the MMR vaccine, making the development of ASD in a child preventable. More than a decade ago medical experts and scientists lacked knowledge about the complex characteristics associated with ASD, thus diet recommendations and treatments remained sparse in societal conversation about the disability (Kite et al., 2013; LKL, 2009; Ruta et al., 2012; World Autism Views Project, 2011a, 2011b).

The current research suggests that while news media coverage of ASD once heavily emphasized external, preventable, and stable attributions of the disability, over time news media has transitioned to emphasize a variety of attributions of ASD; a mixture of external, preventable,

and stable attributions, along with internal (genetic) causes of ASD (Landigran, 2010; Norton, 2013; World Autism Views Project, 2011a), preventability of the disability (Hyman, 2012; LKL, 2009; Norton, 2013; Reinberg, 2012), and unstable (treatable) nature of the symptoms (a rise in treatments and therapies; LKL, 2009; McGovern, 2013; World Autism Views Project, 2011b). In order to examine these mixed messages about attributions of ASD in news media over time the following research question is posed:

RQ3: How has the presence of cause (internal, external), preventability (preventable, unpreventable), and stability (stable, unstable) attributions in news media changed over time (1998-2013)?

This research also suggests signaling “stigma” cues of ASD have changed over time. In the past 16 years news media has changed their approach to reporting health and science news stories, using different language and framing choices (Burgers & de Graff, 2013; Saguy & Almeling, 2008; Vettehen et al., 2005). Newspapers and other news media outlets have gone so far as to acknowledge biases by pitting biased oppositions of social issues against each other (Chia & Cenite, 2012; Morris, 2007; Sutter, 2012; Xiang & Sarvary, 2007), adding to confusion about major societal issues. It is reasonable that in this rise of sensationalism, journalistic choices to embed signaling “sigma” cues in news stories about ASD may have changed—risen and decreased—over time. In order to examine the potential increased presence of signaling “stigma” cues in news media coverage of ASD the following hypothesis is offered:

RQ4: How has the presence of signaling “stigma” cues (labeling, social skill deficits, aberrant behavior, and physical appearance) in news media changed over time (1998-2013)?

The hypothesis (H1) and research questions (RQ2-RQ4) shed new insight about news media representation of ASD. The information from the hypothesis and research questions provides perspective about what community members see regarding the disability of ASD. ASD individuals and their family members have attested to experiencing a felt stigma in educational, health and medical care, government, and community settings (Dew et al., 2008; Gray, 2002; Hebl et al., 2005). While news media is certainly not the sole contributor to the development of discriminatory and judgmental thoughts about ASD, it may play an important role. The current research strives to uncover the presence of signaling “stigma” cues and attributions of ASD in news media coverage about the disability.

The current research does not stop with content of media coverage regarding ASD; it follows de Vreese’s (2005) suggestion to examine the effects as well. In particular, attribution theory (Weiner, 1986) has been refined and developed through the decades; the theory offers clear paths between attributions and resulting feelings and actions. This research reveals attributions of ASD emphasized in news media coverage of the disability do in fact influence community members feelings toward the disability, and actions toward ASD individuals. This research targets community members who may not be knowledgeable about ASD, or have had frequent experience with ASD individuals, because these individuals are more likely to absorb information from news media about the disability as it is convenient knowledge.

While media may influence and direct societal thoughts about public issues, it is extremely important to remain sensitive to the different psychological routes by which media frames may affect people’s attitudes in order to understand who will respond to certain kinds of message (Nelson, Oxley, & Clawson, 1997). Freud and other researchers demonstrated extreme effects on judgment and behavior that are mediated by functions below the surface of conscious

awareness (Nelson et al., 1997). While it is meaningful to examine how attributions of ASD are framed in news media coverage, when considering effects of this coverage it is vital to also gauge knowledge and experience with the disability.

The following section delves into Study 2 hypotheses. Study 2 is comprised of two phases. Phase 1 examines direct effects of attributions on community members' emotions, behavioral intentions, and actual behaviors; this phase involves three hypotheses. Phase 2 refines current knowledge about the indirect effects of attributions on emotion, behavioral intention, and behavior; this phase delineates two final hypotheses. The following section provides summaries that set the stage for Study 2 hypotheses.

Study 2—Phase 1: Direct Effects of Attributions on Emotions, Behavioral Intentions, and Behaviors

Study 2 investigates the effect of news media's emphasis on certain attributions of ASD. It involves a series of *three experiments* designed to uncover the effects of: 1) cause attribution (internal vs. external), 2) preventability attribution (preventable vs. unpreventable), and 3) stability (stable vs. unstable), on community members' feelings toward the disability of ASD and actions/behaviors toward those with ASD. Attribution theory is a powerful framework that can be used to challenge stigma and discrimination (Weiner, 2006). The theory explains people's attributions of social issues influence subsequent emotions and actions regarding those issues (see Corrigan, 2000, 2002; Weiner, 2006). The current research suggests attribution theory is useful in identifying ways to diminish stigmatization and discrimination of ASD. Study 2 suggests that uncovering the effects attributions regarding ASD in news media is pivotal in identifying ways to diminish stigmatization and discrimination of the disability.

Attributions of cause, preventability, and stability of ASD are the starting point for societal understanding of the prominent disability, which leads to community members' resulting emotions and behaviors (Corrigan, 2000, 2002; Weiner, 2006). Attribution theory explains people are driven to understand *why* certain events and occurrences happen (Corrigan, 2000; Weiner, 1986). When there are no clear cause(s), preventability is unknown, and stability is questionable (as in the case of ASD) understanding the effects of attributions discussed in news media coverage of the disability becomes vastly important.

Corrigan (2000) uncovered a connection between attributions of mental illness and people's felt emotions and behaviors toward those that are mentally ill; through the process Corrigan realized emphasizing certain attributions about mental illness could actually enhance positive feelings and diminish stigmatization/discrimination, and this could encourage helping behaviors toward the mentally ill. Corrigan (2000) explained certain attributions about health issues and disabilities tend to produce specific emotions, which affect people's intentions and actions to help individuals with a particular disability. The clear connection between people's attributions, emotions, and behaviors has been realized in the context of mental illness, but the concept had yet to be applied to ASD.

Attribution theory has great promise in helping to mitigate stigmatization and discrimination of ASD. Corrigan (2000) explained that societal attributions about mental illness create knowledge structures that reinforce stigma associated with the disability. However, attributions can also help to diminish stigma—attributions that create feelings of sympathy appear to increase people's likelihood to help people with ASD, whereas anger leads to discriminatory behaviors. Stigmatization of ASD can be gauged by measuring community members' emotional and behavioral responses based on their attributions of ASD (Ling et al.,

2010). Research suggests emotion mediates the relationship between individuals' attributions and their behavioral intentions and actual behaviors (Corrigan, 2000, 2002; Weiner, 1986). This research evaluates direct and indirect effects of attributions on community members' emotions, behavioral intentions, and behaviors.

Phase 1 focuses on direct effects and Phase 2 concentrates on indirect effects. While direct and indirect effects of attributions on emotion, behavioral intention, and behavior could simultaneously be examined through path analysis alone, the current research first examined main effects (through the use of MANOVAs, followed by post hoc ANOVAs), and then evaluates the indirect effects (through path analysis). The direct effects detected in the path analysis reiterate findings revealed by the ANOVAS. The dual analyses offer a comparison mechanism that illustrates translatable findings across different statistical tests. A discussion regarding translation of results is addressed in Chapter 6. The remaining two sections of Chapter 5 provide summary statements that set the stage for Phase 1—H2-H4 and Phase 2—H5-H6.

The Effects of Cause Attribution

The relatively unknown cause(s) of ASD makes it exceptionally crucial to understand the effect of cause attributions of ASD emphasized in news stories on community members' emotions, behavioral intentions, and behaviors. As mentioned earlier, a cause attribution involves perceptions regarding the source or origin of a condition (Weiner, 1986). Internal causes of ASD are typically associated with the human body (e.g., genetics), and external cause attributions are related to the environment or situation (e.g., toxins, vaccines). Research suggests internal cause attributions lead to feelings of antagonism, blame, and discriminatory/stigmatizing behaviors (Corrigan et al., 2003; Corrigan et al., 2001a, 2001b; Hurley & Tewksbury, 2012; Jones & Hastings, 2003), whereas external cause attributions lead to people's sympathetic

feelings toward individuals with a health condition, as well as supportive or helping behaviors (Corrigan et al., 2003; Corrigan et al., 2001a, 2001b; Eberly, Holley, Johnson, & Mitchell, 2011).

This research buys into this line of inquiry, suggesting internal cause attribution of ASD emphasized in news stories about the disability elicit antagonistic and discriminatory behavioral intentions and behaviors, whereas external cause attribution of the disability bring sympathetic feelings and supportive behavioral intentions and behaviors. In order to investigate this claim the following hypothesis and sub-hypotheses were proposed:

H2: Emotion, behavioral intention, and behavior will vary as a function of cause attribution.

H2a1-2: Internal cause attribution will have a direct positive influence on antagonistic feeling (H2a1), whereas external cause attribution will have a direct positive influence on sympathetic feeling (H2a2).

H2b1-2: Internal cause attribution will have a direct positive influence on discriminatory behavioral intention (H2b1), whereas external cause attribution will have a direct positive influence on supportive behavioral intention (H2b2).

H2c1-2: Internal cause attribution will have a direct positive influence on discriminatory behavior (H2c1), whereas external cause attribution will have a direct positive influence on supportive behavior (H2c2).

The Effects of Preventability Attribution

Along with the cause, preventability of ASD has also surfaced as a topic of debate. If the condition is preventable, feelings of antagonism about why the condition exists in the first place are likely to arise, followed by discriminatory behavioral intentions and behaviors toward individuals with the disability (Corrigan, 2000; Corrigan et al., 2001a, 2001b; Corrigan et al.,

2003; Jones & Hastings, 2003). Alternatively, people who believe a health issue is unpreventable are likely to feel sympathy for individuals with the health condition (Corrigan, 2000; Dagnan Trower, & Smith, 1998; McGuinness & Dagnan, 2001; Menec & Perry, 1998; Schwarzer & Weiner, 1988; Stanley & Standen, 2000). In order to examine these propositions in the context of ASD the following hypothesis and sub-hypotheses were proposed:

H3: Emotion, behavioral intention, and behavior will vary as a function of preventability attribution.

H3a1-2: Preventable attribution will have a direct positive influence on antagonistic feeling (H3a1), whereas unpreventable attribution will have a direct positive influence on sympathetic feeling (H3a2).

H3b1-2: Preventable attribution will have a direct positive influence on discriminatory behavioral intention (H3b1), whereas unpreventable attribution will have a direct positive influence on supportive behavioral intention (H3b2).

H3c1-2: Preventable attribution will have a direct positive influence on discriminatory behavior (H3c1), whereas unpreventable attribution will have a direct positive influence on supportive behavior (H3c2).

The Effects of Stability Attribution

In addition to the cause and preventability of ASD being unclear, stability of the condition is not well understood. Certain therapies, diets, or counseling may improve the symptoms experienced by ASD individuals (Dagnan & Cairns, 2005; Stanley & Standen, 2000). However, others dismiss the possibility of improving or “curing” the condition of ASD (King et al., 2006). At best researchers agree that it is unlikely ASD individuals’ symptoms will worsen over time (DeNoon, 2007). Researchers suggest health issues perceived as stable (no potential

for improvement) elicit feelings of hopelessness and discriminatory behavioral intentions and behaviors (King et al., 2006), whereas health issues perceived as unstable (potential to improve) yield hopeful feelings and supportive behaviors (Stanley & Standen, 2000). In order to carefully consider these claims the following hypothesis and sub-hypotheses statements were proposed:

H4: Emotion, behavioral intention, and behavior will vary as a function of stability attribution.

H4a1-2: Stable attribution will have a direct positive influence on feeling of hopelessness (H4a1), whereas unstable attribution will have a direct positive influence on feeling of hopefulness (H4a2).

H4b1-2: Stable attribution will have a direct positive influence on discriminatory behavioral intention (H4b1), whereas unstable attribution will have a direct positive influence on supportive behavioral intention (H4b2).

H4c1-2: Stable attribution will have a direct positive influence on discriminatory behavior (H4c1), whereas unstable attribution will have a direct positive influence on supportive behavior (H4c2).

Study 2 was designed to refine current knowledge about the effects of news media representations of ASD on community members' actual feelings and actions toward the disability. The results of the current research shed light not only on the direct effects discussed in Phase 1, but also the indirect effects highlighted in Phase 2. Attribution theory has been refined over three decades, and offers clear insight into how attributions of health issues and disabilities may influence societal perceptions of conditions, manifesting in community members' feelings, behavioral intentions, and behaviors (Corrigan, 2000, 2002; Corrigan et al.,

2001a, 2001b; Corrigan et al., 2003; Weiner, 2006). Phase 2 of Study 2 specifically focuses on the indirect effects of attributions of ASD that appear in news media.

Study 2—Phase 2: Indirect Effects of Attributions on Emotions, Behavioral Intentions, and Behaviors

Researchers have emphasized the importance of using path analysis and/or structural equation modeling to observe the indirect effects of attributions on emotions and actions (see Graham et al., 2001; Roesch & Weiner, 2001; Struthers et al., 1998). Attribution theory, from its inception, has postulated historical relations between attributions, emotions, and actions (Weiner, 1995). The aforementioned decades of research that refined attribution theory illicit support that indirect relations in the attribution model quite clearly exist (see Weiner, 1995, 2006). The remainder of this section provides summary statements that set the stage for hypotheses that shed light on the indirect influence of attributions on emotions, behavioral intentions, and behaviors.

Emotion as a Mediator of Attribution and Behavioral Intention

Research has emphasized time after time how emotions (in the framework of attribution theory) influence behavioral intentions (Choi & Lin, 2009; David, Ghinea, Macavei, & Kallay, 2005; Graham et al., 2001; Major, 2011; Taggar & Neubert, 2004; Weiner 1986, 1995, 2006). The attributional model has yet to be extended to the context of ASD; this research postulates the consistent and replicable studies over the decades will hold true. Thus, the following hypothesis and sub-hypotheses were proposed:

H5: Attribution will have an indirect influence on behavioral intention through emotion.

H5a: Internal cause attribution will have an indirect positive influence on discriminatory behavioral intention through antagonistic feelings.

H5b: External cause attribution will have an indirect positive influence on supportive behavioral intention through sympathetic feelings.

H5c: Preventable attribution will have an indirect positive influence on discriminatory behavioral intention through antagonistic feelings.

H5d: Unpreventable attribution will have an indirect positive influence on supportive behavioral intention through sympathetic feelings.

H5e: Stable attribution will have an indirect positive influence on discriminatory behavioral intention through feelings of hopelessness.

H5f: Unstable attribution will have an indirect positive influence on supportive behavioral intention through feelings of hopefulness.

It is important to note H5a-b corresponds with Experiment 1 (Figure 1), H5c-d corresponds with Experiment 2 (Figure 2), and H5e-f corresponds with Experiment 3 (Figure 3). In particular, dotted lines indicating mediation (or indirect effects) denote these six sub-hypotheses in their corresponding figures. As mentioned earlier, chapter 6 explains how (M)ANOVA and path analysis results translate into similar findings.

Behavioral Intention as Mediator of Attribution and Behavior

Research has also alluded to the indirect effects behavioral intentions have on actual behaviors (Cheng, Chen, Chen, & Lu, 2012; Goodwin & Mullan, 2009; Lawhon, 2013; Lin, 2013; Martin, Martin, Smith, & Hewstone, 2007; Watson, Douglas, Berkley, Madapulli, & Zeng, 2009), while much of attribution literature has not investigated actual behavioral outcomes (Weiner 1986, 1995, 2006). This research suggests that when community members' intention to provide support, they will actually carry that action out; conversely community members will

likely act upon their behavioral intentions to discriminate. In order to examine these claims, the following hypotheses were posed:

H6: Attribution will have an indirect influence on behavior through behavioral intention.

H6a: Internal cause attribution will have an indirect positive influence on discriminatory behavior through discriminatory behavioral intention.

H6b: External cause attribution will have an indirect positive influence on supportive behavior through supportive behavioral intention.

H6c: Preventable attribution will have an indirect positive influence on discriminatory behavior through discriminatory behavioral intention.

H6d: Unpreventable attribution will have an indirect positive influence on supportive behavior through supportive behavioral intention.

H6e: Stable attribution will have an indirect positive influence on discriminatory behavior through discriminatory behavioral intention.

H6f: Unstable attribution will have an indirect positive influence on supportive behavior through supportive behavioral intention.

Please note H6a-b corresponds with Experiment 1 (Figure 1), H6c-d corresponds with Experiment 2 (Figure 2), and H6e-f corresponds with Experiment 3 (Figure 3). Similar to H5, dotted lines indicating mediation (or indirect effects) denote these six sub-hypotheses in their corresponding figures. As mentioned earlier, (M)ANOVA and path analysis results translate into similar findings. This will be discussed in chapter 6.

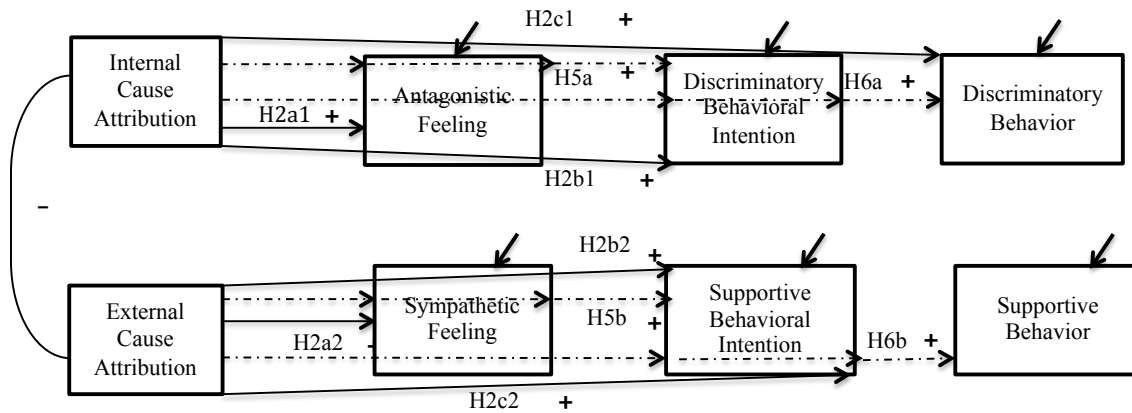


Figure 1. Proposed theoretical model of the relationships between causal attribution, emotions, behavior intentions, and behaviors. The solid lines indicate direct paths; the dotted lines indicate indirect or mediating relationships; the small short lines pointing down indicate error terms; the curved line indicates covariance.

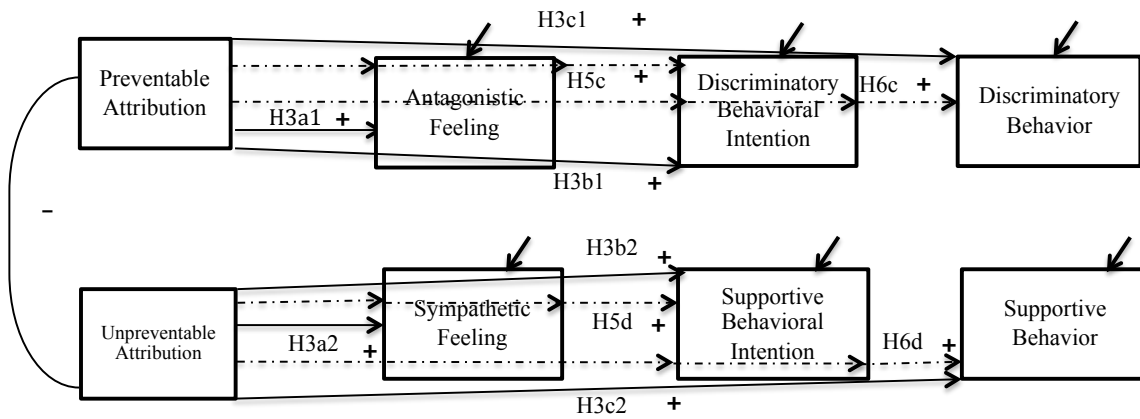


Figure 2. Proposed theoretical model of the relationships between preventability attribution, emotions, behavior intentions, and behaviors. The solid lines indicate direct paths; the dotted lines indicate indirect or mediating relationships; the small short lines pointing down indicate error terms; the curved line indicates covariance.

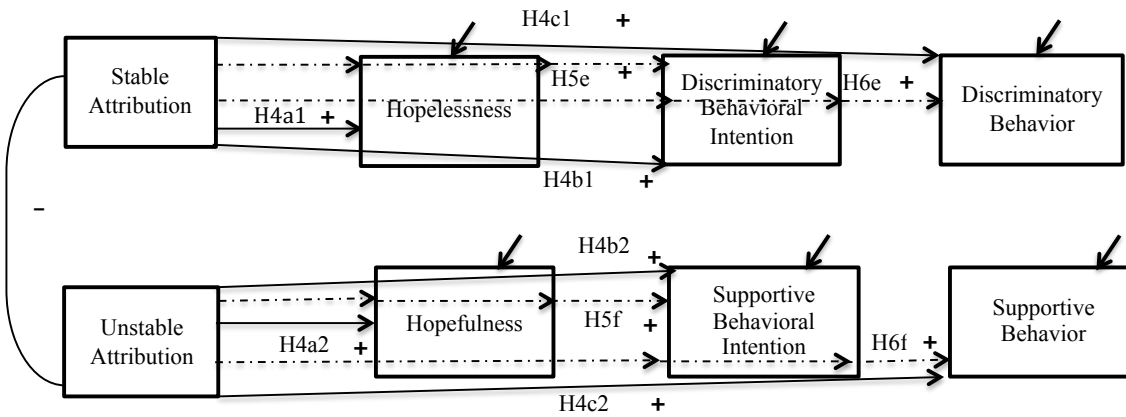


Figure 3. Proposed theoretical model of the relationships between stability attribution, emotions, behavior intentions, and behaviors. The solid lines indicate direct paths; the dotted lines indicate indirect or mediating relationships; the small short lines pointing down indicate error terms; the curved line indicates covariance.

Goals of the Research

Attribution theory is an advantageous framework for finding ways to diminish stigmatization and discrimination of ASD. Results of this study inform society about the presence of attributions of ASD and signaling “stigma” cues in news media, as well as the impact of attributions of ASD on community members’ feelings and behaviors toward ASD individuals. These findings may offer guidance for journalists and news organizations about practices and language choices that could create a more encouraging social environment for people with ASD. Targeting community members is key because citizens may include government officials, policy makers, health care providers, service providers, or educators, who could directly or indirectly influence ASD individuals’ lives, as well as their family members.

This research not only applies a rigorously developed theoretical framework to the highly important context of ASD, it also contributes to current knowledge of attribution theory by addressing a limitation of previous attribution research. Many studies have measured the role of attributions on emotional responses and how participants *say* they would respond behaviorally,

not on how they actually respond (Corrigan, 2000). This limitation will be addressed in the current research by measuring community members' actual behavioral response as a result of an experimental condition.

The ultimate goal of this research is to identify ways to diminish stigmatization of ASD, and promote a positive environment for ASD individuals and their family members. To achieve this goal a mixed-method project was executed. Study 1 was designed to garner information about how attributions of ASD and signaling "stigma" cues appear in news media. The results of this research broaden current understanding about how the media contributes to the social construction of the prominent disability, ASD. Study 2 evaluated the effects of attributions of ASD as seen in news media, on community members' emotions, behavioral intentions, and behaviors toward ASD. Results from these studies reveal how news media frames ASD, as well as the effects of certain framing choices, which in turn may impact how community members perceive and treat people with ASD. The current research provides a way to capture reasons for ASD individuals and their family members' felt stigmatization and discrimination, and provides organizations and governments with insight about the effects of how they choose to discuss prominent disabilities like ASD. Chapter 6 outlines specific details about how Study 1 and 2 were executed.

CHAPTER 6. METHOD

Chapter 6 outlines a mixed-method design that accomplishes two overarching goals of this research: 1) examining how news media frames ASD, and 2) identifying the effects of those frames. Study 1 addressed the first overarching goal through content analysis to answer H1 and RQ1-4. To recap, H1 considered the association between signaling “stigma” cues and attributions of ASD in news media; RQ1 and RQ2, respectively, examined the impact of circulation on the presence of attributions of ASD and signaling “stigma” cues in news media; RQ3 and RQ4 explored changes over time in the presence of attributions of ASD and signaling “stigma” cues in news media, respectively.

Study 2 addressed the second overarching goal through the execution of three separate 1 X 2 experiments; each experiment focused solely on a *single dimension* of attribution—cause, preventability, and stability. To reiterate, Experiment 1 H2 responded to the effects of internal vs. external cause attributions of ASD on individuals’ emotions, behavioral intentions, and behaviors; Experiment 2 H3 offered insight into the effects of preventable vs. unpreventable attributions of ASD on individuals’ emotions, behavioral intentions, and behaviors; Experiment 3 H4 provided information about the effects of stable vs. unstable attributions of ASD on individuals’ emotions, behavioral intentions, and behaviors. Finally, H5 and H6 tested for mediation in Experiments 1, 2, and 3, respectively.

This chapter is organized into two distinct sections—Study 1 Method and Study 2 Method. For reference, Appendix A provides the complete codebook used in Study 1. Appendix B presents a complete copy of the pre- and post-treatment questionnaire used in Study 2. Appendix C displays a complete copy of the six experimental stimuli (two stimuli for each experiment).

Study 1 Method

Sampling

A content analysis was used to examine news media coverage of ASD. Two factors played a central role in obtaining a generalizable sample within the population of all news media coverage of ASD—circulation and timeframe. In particular, a population of news media articles about ASD were collected from national and regional publications over a 16-year timeframe (1998-2013). Circulation and timeframe may each play a role in variations regarding the coverage of ASD; news media coverage about certain health issues may vary based on publication circulation (Arthur, 2012). The particular timeframe of 1998-2013 was chosen because 1998 marked the first time ASD was launched into mainstream public discourse through news media (see Wakefield et al., 1998).

This research centers its investigation on print and online newspaper coverage of ASD. A longitudinal population of national and regional news stories about ASD was gathered through LexisNexis Academic, a database that retains over 3 billion public documents in print and online form. A search for print and online news stories from U.S. publications, containing the word(s) “ASD,” “autism spectrum disorder(s),” and/or “autism,” between January 1998 and July 2013, was executed in order to obtain an initial population. This initial population yielded 60,327 news stories. In order to clean the population, a series of steps were taken. First, articles that were not actually about ASD or autism, international sources, letters to the editor, entertainment articles, book reviews, news briefs (150 words or less), and duplicate articles were removed (for a similar approach see Holton et al., 2012). This procedure significantly reduced the population to a total of 6,538 news stories about ASD from 1998-2013. Second, the remaining news articles were stratified by year and circulation to create groups, or strata. Stratified sampling involves dividing

a population into small groups so that random sampling can occur within the groups, allowing for generalizability beyond the sample (Riffe, Lacy, & Fico, 1998). Third, systematic sampling was used to select 15% of the articles from each group. Systematic sampling involves selecting every n th unit from a sampling frame (Riffe et al., 1998); in the current research every 7th article was selected within each group. Systematic sampling yielded a sample of 982 news stories (15% of the population). Each news story was treated as one unit of analysis. The table below illustrates the Study 1 sample's news article composition by year and circulation.

Table 1

Study 1 Sample Composition by Timeframe and Circulation

| | Total Articles | National Circulation | Regional Circulation |
|--------------|-----------------------|-----------------------------|-----------------------------|
| 1998 | 36 | 14 | 22 |
| 1999 | 54 | 14 | 40 |
| 2000 | 68 | 24 | 44 |
| 2001 | 45 | 22 | 23 |
| 2002 | 56 | 27 | 29 |
| 2003 | 48 | 25 | 23 |
| 2004 | 53 | 29 | 24 |
| 2005 | 61 | 26 | 35 |
| 2006 | 64 | 26 | 38 |
| 2007 | 72 | 35 | 37 |
| 2008 | 73 | 39 | 34 |
| 2009 | 68 | 34 | 34 |
| 2010 | 86 | 42 | 44 |
| 2011 | 72 | 44 | 28 |
| 2012 | 80 | 46 | 34 |
| 2013 | 46 | 20 | 26 |
| Total | 982 | 462 | 520 |

Coding Scheme

The codebook (see Appendix A) guided the coding process. Leask and Chapman's (2002) approach was adopted as a guide for developing categories, which included circulation, timeframe, signaling "stigma" cues (i.e., labeling cue, social skill deficit cue, aberrant behavior cue, physical appearance cue), cause attribution, preventability attribution, and stability attribution. These categories are described in detail below, drawing upon earlier descriptions when the constructs were operationalized in the literature review.

Circulation and timeframe. Circulation and timeframe were treated as independent variables. Circulation was coded based on two levels—national and regional. Each news story was coded as either national or regional according to the Alliance for Audited Media's (2013) circulation criteria. Timeframe was coded based on the year that the news story was published; beginning the year the Wakefield et al. (1998) came out. This timeframe included 16 levels—1998 through 2013. Each news story was coded as being published during one of the 16 years.

Signaling "stigma" cue. Goffman originally defined stigma as one's spoiled normal identity (1963). Further, he specified that stigma emerge in two forms—discredited and discreditable (Corrigan, 2000; Goffman, 1963). While discredited stigma emerges from people seeing visible differences about a person or group of people and making judgments, discreditable stigma arises in conjunction with disabilities like ASD where individuals cannot see visible differences that "clue" them into stigmatizing or judging another person with a disability (Corrigan, 2000). News media has the potential to communicate judgmental language by emphasizing signaling "stigma" cues. These cues have the potential to clue community members into thinking about ASD as a different, abnormal, and even problematic disability. In order to capture the presence of signaling "stigma" cues in news media coverage of ASD, the following

descriptions are given; these descriptions provide a guideline to identify the presence of these cues in news media stories about ASD.

Labeling cue. Labeling cues was coded as a dependent variable with two levels—presence or absence. As mentioned earlier, labeling cue combines reference of ASD with negative connotations through nouns and adjectives that associate the disability with irregular qualities or characteristics. Examples of descriptive words and phrases may include: abnormal, agonizing, chasm of autism, clunky, crazy, dark world of autism, devastating, disease, epidemic, isolating, not healthy, odd, off-kilter, unusual, and victim. Words often paired with ASD that were not considered labeling cues include: pervasive, disorder, disability, mentally retarded, and mental retardation. These words and phrases are not thought of as labeling because they are literally associated with the diagnosis of the disability (APA, 2011; Autism Speaks, 2013). Examples of the presence of labeling cue were recorded.

Social skill deficit cue. Social skill deficit cue was coded as a dependent variable with two levels—presence or absence. Social skill deficit cues were identified through reference to impaired or limited social interactions or difficulties in verbal and nonverbal communication that impede an individual from social engagement. Some examples of social skill deficit cues include: disrupted communication, inappropriate social skills, lower intellectual and communicative ability, needing help with social interactions, reference to language problems, reference to limited vocabulary, social challenges, social delays, social problems, and “stopped speaking” after a certain amount of time. Words or phrases not thought of as social skill deficit cues include: nonverbal, cannot speak, mute, barely speaks. These are not considered to be social skill deficit cues because they are correctly associated with certain social skill abilities of

the ASD diagnosis, nonverbal (APA, 2011; Autism Speaks, 2013). Examples of the presence of social skill deficit cue were recorded.

Aberrant behavior cue. Aberrant behavior cue was coded as a dependent variable with two levels—presence or absence. Aberrant behavior cues can be observed through mention of ASD individuals’ emotional or behavioral responses to external stimuli, or other symptoms that may hinder quality of life. Examples of aberrant behavior cues include: bolting into traffic, climbing on things (not for climbing), eating inedible objects, inappropriate actions or behaviors in general, inappropriate exposure, repetitive body movements, restricted behavioral abilities, screaming unexpectedly, self-destruction, self-injury, struggling with everyday behavior norms, thrashing, and wandering. Words or phrases not considered as aberrant behavior cues include any reference to a behavioral change that is *not* aberrant, deviant, or unusual (APA, 2011; Autism Speaks, 2013). Examples of the presence of aberrant behavior cue were recorded.

Physical appearance cue. Physical appearance cue was coded as a dependent variable with two levels—presence or absence. Physical appearance cues can be observed through reference to stunted physical development, impairments, or abnormalities of ASD individuals. Examples of physical appearance cues include: bleeding wrists, comparison to certain body types (e.g., frail, ill, high school fullback), disheveled hair, generally weird looking, mismatched clothing, scarring, shaky limbs, trembling, and unusual marks. Words or phrases not thought of as physical appearance cues include any mention of a behavioral choice that made them “look” different temporarily (e.g., taking clothes off in public; this would be considered aberrant behavior) (APA, 2011; Autism Speaks, 2013). Examples of the presence of physical appearance cue were recorded.

Cause attribution. Cause attribution was coded as a dependent variable with three levels—presence of internal cause, presence of external cause, no cause mentioned. *Internal cause* was identified when the cause of ASD is directly related to the human body (e.g., genetic predisposition, genetic mutation, genetic deletion, genetic duplication, copy number variant). *External cause* was identified when the cause of ASD is clearly linked to a source outside of the human body (e.g., environmental toxins, chemical exposure, vaccinations). News stories that do not mention a cause of ASD were coded as *no cause mentioned*. Given that multiple causes of ASD are occasionally mentioned within a single news story, the primary cause attribution was assessed based on the cause that is emphasized more (determined by calculating the number of sentences that include or refer to the cause).

Preventability attribution. Preventability attribution was coded as a dependent variable with three levels—presence of ASD as preventable, presence of ASD as unpreventable, or no mention of preventability. Stories that frame ASD as *preventable* may reference how someone should be held responsible for the condition of ASD, or a decision should have been made to change the condition of ASD from happening. Stories that frame ASD as *unpreventable* may reference how no one is responsible for the condition of ASD, or that nothing could have been done to change the condition of ASD from happening. If the news story does not mention preventability of ASD then it was coded as *no reference to preventability*.

Stability attribution. Stability attribution was coded as a dependent variable with three levels—presence of ASD as a stable condition, presence of ASD being treatable/curable, or no reference to stability of the condition. Stories that emphasize symptoms of ASD are unlikely to improve or the condition will not get better over time were coded as *stable condition*. Stories that emphasize symptoms of ASD are likely to improve or the condition will get better over time

were coded as *unstable condition*. If the news story does not mention preventability of ASD then it was coded as *no reference to stability of the condition*.

Coding Process

A team of four students from a small southeastern university was recruited to assist in coding the sample; their involvement was part of a Directed Study course mentored by the primary investigator. In order to achieve intercoder reliability coders participated in a series of training sessions where they were introduced to the variable definitions and coding instructions. Throughout the training sessions students and the primary investigator engaged in discussions about how to identify key variables in news stories, and how to record coding information in an excel spreadsheet.

Coders independently pretested the codebook using 10% of the study sample. Krippendorff's alpha was used to determine intercoder reliability in the pretest. This robust measure of reliability can be used regardless of the number of coders, level of measurements, sample size, and presence of missing data (Hayes & Krippendorff, 2008). Scores for each of the variables obtained Krippendorff's alpha of .8 or higher, which is considered highly reliable (Hayes & Krippendorff, 2008). Specifically, Krippendorff's alpha scores revealed high reliability for each of the seven key variables: labeling cue = .95; social skill deficit cue = .99; aberrant behavior cue = .96; physical appearance cue = .91; cause attribution = .96; preventability attribution = .84; stability attribution = .98.

After intercoder reliability was achieved the remaining sample was divided among coders. Binders with paper copies of the news stories were created for each coder and labeled for organizational purposes. Coders worked independently to code their respective portions of the sample. They were instructed to update the primary investigator daily on their coding progress,

following their assigned coding schedule. After the coding was complete the data was combined into a single spreadsheet, cleaned, and prepared for analysis.

Data Analysis

The data was analyzed with IBM SPSS 21. H1 was answered through a series of twelve 2 X 3 chi-square tests. This is an appropriate analysis for this hypothesis because it investigates the relationship between two categorical variables, cases are representative of the systematic sample and independent of one another, and the sample size is fairly large (Mendenhall & Sinchich, 2012). Specifically, each of the chi-square tests involved a 2 (presence or absence signaling “stigma” cue; labeling cue, social skill deficit cue, aberrant behavior cue, physical appearance cue) X 3 (attribution; internal, external, no mention of cause; preventable, unpreventable, no mention of preventability; stable, unstable, no mention of stability) design to uncover a potential association between the presence of signaling “stigma” cues and the presence of certain attributions in news media stories about ASD. When significance was detected, Holm’s Sequential Method of Post Hoc Comparisons was used to determine which particular levels of the key variables were statistically associated at the family alpha of .05 (Mendenhall & Sinchich, 2012).

In order to answer RQ1, a series of three 2 (circulation; national vs. regional) X 2 (attribution; internal, external; preventable, unpreventable; stable, unstable) chi-square tests were used to reveal the potential association between the circulation level of news media and the presence of certain attributions in news media stories about ASD. Holm’s Sequential Method of Post Hoc Comparisons was not necessary because each variable only has two levels (Mendenhall & Sinchich, 2012).

RQ2 was answered through a series of four 2 (circulation; national vs. regional) X 2 (presence or absence of signaling “stigma” cue; labeling, social skill deficit, aberrant behavior, physical appearance) chi-square tests, which revealed the potential association between the circulation level of news media and the presence of certain signaling “stigma” cues in news media stories about ASD. Again, Holm’s Sequential Method of Post Hoc Comparisons was not necessary because each variable has two levels.

RQ4 and RQ5 were both answered by using Spearman’s rank correlation coefficient. For RQ4 this analysis was used to identify the strength and direction of relationship between the presences of attributions (internal, external, preventable, unpreventable, stable, unstable) over time (1998-2013). For RQ5 the analysis was again used to identify the strength and direction of the relationship between the presences of signaling “stigma” cues (labeling, social skill deficit, aberrant behavior, physical appearance) over time (1998-2013). Spearman’s rank correlation coefficient is a nonparametric statistical analysis similar to Pearson’s correlation coefficient that is ideal for small sample sizes, as in the case of this analysis ($n = 16$). Spearman’s rank correlation coefficient, denoted r_s , compares the difference in rank of one variable and the rank of another variable, producing a value from -1 to 1. Values of r_s that are closer to -1 or 1 indicate a high degree of correlation between the first and second variable; values closer to 0 imply a weaker degree of linear association (Pagano & Gauvreau, 2000). Sequence charts were also created to visually depict trends in attributions of ASD and signaling “stigma” cues over time.

Study 2 Method

Study 2 illuminated findings about the effects of attributions of ASD portrayed in news media on community members’ feelings and behaviors toward ASD. In combination with Study 1, this research provided insight about why ASD individuals and their family members may have

felt or experienced stigma in their daily lives—across educational, governmental, and health care contexts.

A series of three 1 X 2 experiments in Study 2 revealed direct and indirect effects of attributions about ASD portrayed in news stories. Specifically, these experiments provide insight about the direct effects indicated in H2-H4 and mediation (indirect) effects in H5-H6. To be clear, attribution of ASD was the independent variable that was manipulated across each of the three experiments; Experiment 1 tested the effects of internal cause of ASD against external cause of ASD; Experiment 2 tested the effects of ASD as preventable against ASD as unpreventable; Experiment 3 tested the effects of ASD as a stable condition against ASD as an unstable condition that can improve, and even be cured.

The experimental manipulation involved a realistic online news story about ASD that emphasized a particular attribution (i.e., internal, external, preventable, unpreventable, stable, unstable). To briefly summarize, community members read a randomly assigned news story and then responded to a series of questions about their emotional response toward the condition of ASD and behavior toward people with ASD. The three experiments revealed how certain attributions of ASD emphasized in news media foster feelings of sympathy, hopefulness, and supportive behaviors, while other attributions of ASD perpetuate antagonistic or hopeless feelings and discriminatory behaviors. The results of Study 2 provide eye-opening evidence about potential sources and catalysts for the felt stigma and discriminatory events that ASD individuals and their family members experience. The following sections delineate details of Study 2 design.

Stimuli

The stimuli creation and design involved two stages—journalistic writing and web design. In the initial stage seven news media stories that resemble standard journalistic reporting practices were created; the news stories were written by modeling actual published news stories about ASD. The seven news stories were similar in length (501-513 words), were all published in *The Washington Post* on November 29, 2013, and were written by Michael Jamison, a fictional senior writer. Each of the seven news stories began with an identical introduction about the prevalence of ASD and its diagnostic characteristics and ended with a consistent statement about the typical timeframe people with ASD are often diagnosed.

The six manipulated news stories emphasized one particular attribution heavily in the middle: 1) genes are the cause of ASD and it is a human condition (internal cause attribution), 2) environmental toxins are the cause of ASD (external cause attribution), 3) ASD is a condition that can certainly be prevented (preventable attribution), 4) ASD is a condition that can in no way be prevented (unpreventable attribution), 5) ASD is a stable condition with little to no hope for symptom improvement (stable attribution), 6) ASD is a condition that can be treated and even cured with the right therapies and treatments (unstable attribution). See Appendix C for a complete presentation of the six experimental stimuli.

Creating stimuli for this research was preferred over using actual news media stories because it enhanced the internal validity of the study (Levine, 2011). Using actual news media coverage to represent each of the stimuli increases the external validity of the study, but this approach makes it difficult to judge internal validity of the intended manipulated attributions. In order to also attain external validity, the tone and the format of the news story stimuli were carefully constructed to model actual news stories normally seen in online news websites. The

word length and other basic information of the six experimental stimuli were consistent (for a similar approach see Parrott, Silk, Dorgan, & Condit, 2005).

The second stage of stimuli design involved the creation of a faux website: The Washington Post's "Health & Science" section; this main website led into a breaking news story about "Autism and our Future" and featured one of the seven randomly assigned news stories about ASD. The website was carefully designed to model The Washington Post website, but the typical hyperlinked information was left inactive so participants could only navigate to their randomly assigned condition which emphasized a particular attribution of ASD. Participants were only able to read the assigned story, close out of the browser, and continue to answer the post-treatment questionnaire. Participants were not able to click on any links other than the manipulated story, nor were they able to click "back" or access any other pages. To view the faux website without randomization restrictions copy and paste the following URL into a web browser bar: <http://www.washingtonpost-health-autism-news.vpweb.com/>. Participants were instructed to click on one of the following story headlines (the others were deactivated): *Human Genes* (internal cause condition), *Environmental Toxins* (external cause condition), *A Time to Act* (preventable condition), *A Tragic Condition* (unpreventable condition), *A False Hope* (stable condition), and *Treating Autism* (unstable condition).

Pilot Study

A pilot study was conducted because the experimental conditions could not be measured with absolute certainty, as could temperature, weight, or other scientific measures. The pilot study was used to ensure the effectiveness and validity of the experimental stimuli. Participants were randomly assigned to one of six experimental conditions: internal cause, external cause, preventable, unpreventable, stable, unstable.

Procedures. Participants who were 18 years old or older and enrolled in a basic public speaking course at a midsized Midwestern University were sent a recruitment email to participate in the pilot study. Students were instructed to contact the primary researcher by email if interested; those who showed interest were randomly assigned to one of the six experimental conditions and sent a follow-up email with a link to the online survey. Each condition included exactly 20 participants. Participants first read an online survey informed consent form and were instructed to click next to signify consent. Participants were then provided with a link to the faux news website and directed to read their randomly assigned faux news story about ASD. After participants were done reading they were instructed to close out of the website and return the survey where they answered a series of questions about whether they believed ASD to be caused by internal or external events (Experiment 1), whether ASD is preventable or unpreventable (Experiment 2), and whether ASD is an untreatable or treatable condition (Experiment 3).

Experiment 1-cause attribution measures. Internal cause attribution was measured by asking participants to respond to the following statements: “It appears as though ASD is mostly linked to genetics,” “It seems as though certain genes are the primary cause of ASD,” “Genes seem like the main cause of ASD,” and “For the most part, ASD is the result of genetics.” These questions were asked on a 9-point Likert scale ranging from “Strongly Disagree” to “Strongly Agree.” These items were combined to form an “internal cause attribution” scale: $\alpha = .97$.

External cause attribution was measured by asking participants to respond to the following statements: “It appears as though ASD is actually caused by exposure to environmental toxins,” “It seems as though exposure to environmental toxins are the central cause of ASD,” “Certain environmental toxins seem like the main cause of ASD,” and “For the

post part, ASD is the result of exposure to environmental toxins.” These questions were asked on a 9-point Likert scale ranging from “Strongly Disagree” to “Strongly Agree.” These items were combined to form an “external cause attribution” scale: $\alpha = .87$.

Experiment 2-preventability attribution measures. Preventable attribution was measured by asking participants to respond to the following statements: “The condition of ASD seems like it is preventable,” “It appears as though people that have ASD could have had the opportunity for a different life,” “For the most part, ASD is a condition that could have been prevented,” and “It seems as though people with ASD could have had the chance to live a normal life.” These questions were asked on a 9-point Likert scale ranging from “Strongly Disagree” to “Strongly Agree.” These items were combined to form a “preventable attribution” scale: $\alpha = .79$.

Unpreventable attribution was measured by asking participants to respond to the following statements: “The condition of ASD seems like it is not preventable,” “It appears as though people that have ASD could not have had the opportunity for a different life,” “For the most part, ASD is a condition that could not have been prevented,” and “It seems as though people with ASD would not have had the chance to live a normal life.” These questions were asked on a 9-point Likert scale ranging from “Strongly Disagree” to “Strongly Agree.” These items were combined to form an “unpreventable attribution” scale: $\alpha = .88$.

Experiment 3-stability attribution measures. Stable attribution was measured by asking participants to respond to the following statements: “It seems unlikely for symptoms of ASD to improve, even with the right therapy or treatment,” “For the most part, people with ASD will probably not get better over time,” “It appears as though ASD people are unlikely to find a therapy or treatment that will actually lessen their symptoms long term,” and “Treatment and therapies are unlikely to improve ASD people’s symptoms long term.” These questions were

asked on a 9-point Likert scale ranging from “Strongly Disagree” to “Strongly Agree.” These items were combined to form a “stable attribution” scale: $\alpha = .90$.

External cause attribution was measured by asking participants to respond to the following statements: “It appears as though ASD is actually caused by exposure to environmental toxins,” “It seems as though exposure to environmental toxins are the central cause of ASD,” “Certain environmental toxins seem like the main cause of ASD,” and “For the most part, ASD is the result of exposure to environmental toxins.” These questions were asked on a 9-point Likert scale ranging from “Strongly Disagree” to “Strongly Agree.” These items were combined to form an “unstable attribution” scale: $\alpha = .94$.

Pilot study results. The pilot studies were successful. In condition 1, after reading the news story that emphasized internal cause of ASD participants reported believing ASD was caused by internal factors ($M = 8.21, SD = .83$) significantly more than external factors ($M = 2.23, SD = 1.5$), $t(19) = 12.79, p < .001$. For condition 2, participants read a news story that emphasized external cause of ASD; results revealed participants reported ASD is caused by external factors ($M = 6.0, SD = 1.14$) more than internal factors ($M = 5.18, SD = 1.6$), but this difference was not statistically significant, $t(19) = 1.62, p = .12$. Therefore the news story for condition 2 was revised; in the second attempt participants who read the news story that emphasized external cause of ASD reported believing ASD was caused by external factors ($M = 6.56, SD = 1.0$) significantly more than internal factors ($M = 2.78, SD = 1.3$), $t(19) = 8.4, p < .001$.

Conditions 3 and 4 emphasized ASD as preventable and unpreventable, respectively. For condition 3, participants who read the news story that emphasized ASD as preventable reported believing ASD was preventable ($M = 6.78, SD = .63$) more than unpreventable ($M = 3.38, SD$

= .92), $t(19) = 10.12, p < .001$. For condition 4, participants who read the news story that emphasized ASD as unpreventable reported believing ASD was unpreventable ($M = 5.94, SD = 1.70$) more than preventable ($M = 3.98, SD = 1.75$), $t(19) = 2.81, p < .05$.

Condition 5 and 6 emphasized ASD as stable and unstable, respectively. For condition 5, participants who read the news story that emphasized ASD as stable reported believing ASD was a stable condition ($M = 7.65, SD = .90$) more than unstable condition ($M = 2.38, SD = 1.14$), $t(19) = 11.67, p < .001$. For condition 6, participants who read the news story that emphasized ASD as stable reported believing ASD was an unstable condition ($M = 7.24, SD = .80$) more than unstable condition ($M = 2.56, SD = .82$), $t(19) = 13.68, p < .001$.

Manipulation check. The same scales used in the pilot studies were utilized for the manipulation check in the real experiments and displayed similar reliabilities (Experiment 1: internal cause attribution scale $\alpha = .98$, external cause attribution scale = $\alpha = .98$; Experiment 2: preventable attribution scale $\alpha = .90$, unpreventable attribution scale $\alpha = .85$; Experiment 3: stable attribution scale $\alpha = .94$, unstable attribution scale $\alpha = .92$). The manipulation checks were successful in all three experiments.

In Experiment 1, the independent sample t-test revealed that people who read the news story about the internal cause of ASD reported believing ASD is caused by internal factors ($M = 7.20, SD = 1.35$) significantly more than those who read the news story emphasizing external cause of ASD ($M = 4.30, SD = 1.97$), $t(98) = 8.57, p < .001$. Additionally, people who read the news story about external cause of ASD reported believing ASD is caused by external factors ($M = 6.11, SD = 1.47$) significantly more than those who read the news story emphasizing external cause of ASD ($M = 3.04, SD = 1.50$), $t(98) = 10.33, p < .001$.

In Experiment 2, the independent sample t-test revealed that people who read the news story about ASD as a preventable condition reported believing ASD actually is preventable ($M = 5.66$, $SD = 1.41$) significantly more than those who read the news story emphasizing ASD as unpreventable ($M = 3.94$, $SD = 1.61$), $t(98) = 5.70$, $p < .001$. Additionally, people who read the news story about ASD as an unpreventable condition reported believing ASD is actually unpreventable ($M = 5.75$, $SD = 1.46$) significantly more than those who read the news story emphasizing ASD as preventable ($M = 4.31$, $SD = 1.46$), $t(98) = 4.94$, $p < .001$.

In Experiment 3, the independent sample t-test revealed that people who read the news story about ASD as a stable condition reported believing ASD actually is a stable condition ($M = 6.03$, $SD = 1.86$) significantly more than those who read the news story emphasizing ASD as unstable ($M = 3.66$, $SD = 1.41$), $t(98) = 7.17$, $p < .001$. Additionally, people who read the news story about ASD as an unstable condition reported believing ASD is actually an unstable condition ($M = 6.02$, $SD = 1.43$) significantly more than those who read the news story emphasizing ASD as a stable condition ($M = 3.91$, $SD = 1.82$), $t(98) = 6.48$, $p < .001$.

Sample

Study 2 targeted community members, particularly people who did not have a high knowledge level or much experience with ASD individuals, and were age 18 or above; these people were likely to form their perceptions of ASD based on media and public discourse about the disability (Bailey, 2011; Broderick, 2010, 2011). Additionally, community members consist of a wide variety of people with positions in education, health care, governmental, and other positions that have the power to effect ASD individuals experiences and resources, as well as limit their abilities and thwart their potential. Demographic information about participants' biological sex, ethnicity, education, income, and employment was collected for Experiment 1, 2,

and 3 (see Appendix B for specific questions). These demographic characteristics were similar across experiments, however they were reported separately because the slight differences in community member samples may be an important factor in interpreting results.

Experiment 1 ($N = 100$) was comprised of 53% male and 47% females, and participant age ranged from 18 to 59 ($M = 30.28$, $SD = 12.15$). Experiment 2 ($N = 100$) included 48% male and 52% female and participant age ranged from 18 to 69 ($M = 31.37$, $SD = 12.82$). Experiment 3 ($N = 100$) included 42% male and 58% female participants, and the age ranged from 18 to 62 ($M = 31.99$, $SD = 10.74$). Figure 4 illustrates the demographic information for ethnicity across Experiments 1-3; each of the three experiments involved a predominantly white sample, with some diversity (see Figure 4).

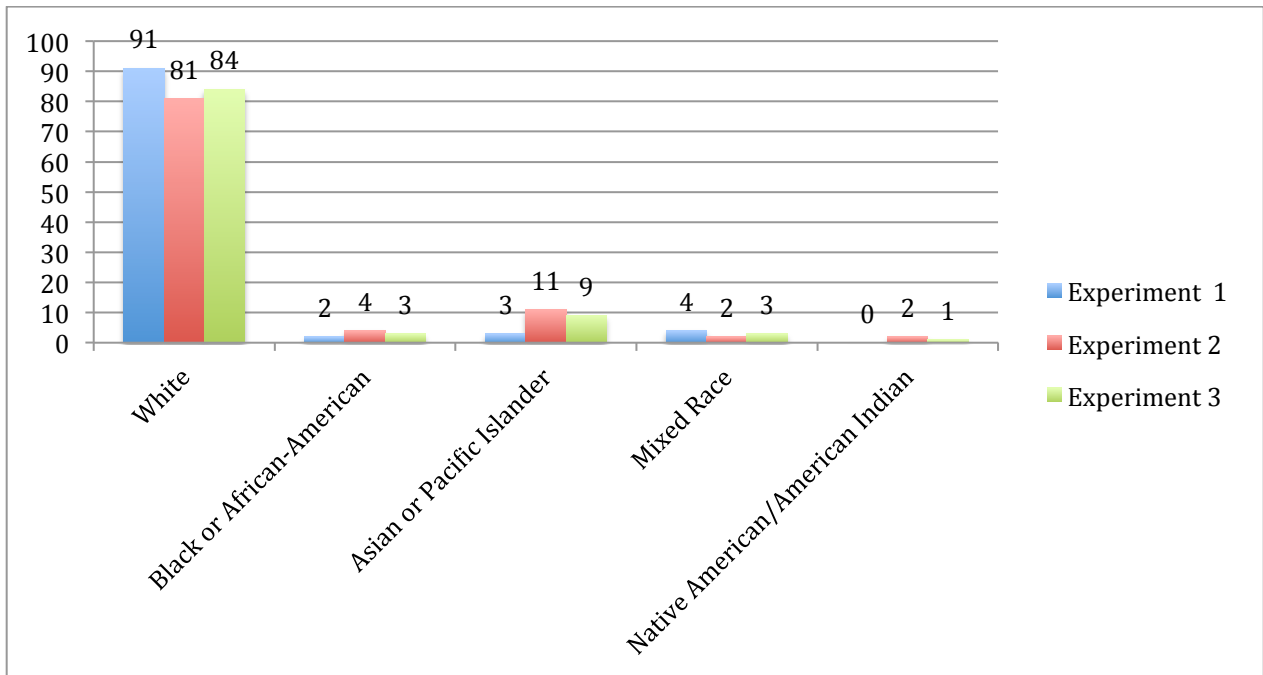


Figure 4. Percentage of ethnicity in experiments 1-3.

Figure 5 displays participants' level of education across Experiments 1-3. Generally participants either had some college or university work completed but no four-year degree, or

were high school graduates (or acquired their GED certificate); a smaller group of participants reported being a college or university graduate or working on post graduate or professional schooling (see Figure 5).

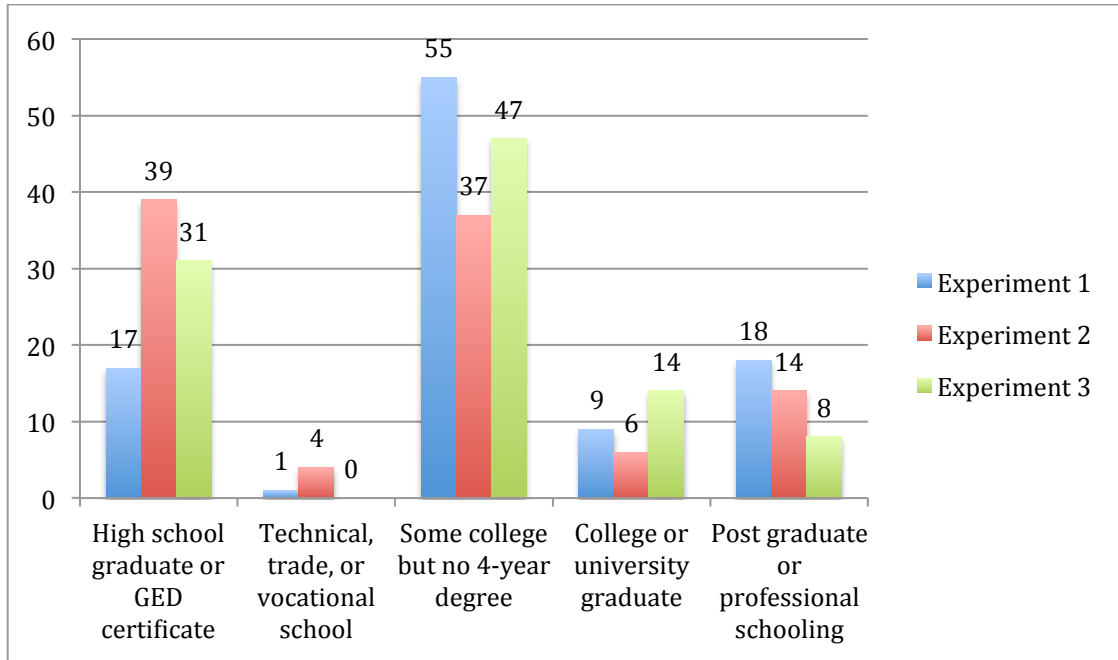


Figure 5. Percentage of current level of education in experiments 1-3.

Figure 6 illustrates participants’ income before taxes in 2012; generally participants most frequently reported making \$30,000 to under \$50,000 or over \$50,000 to under \$100,000. In Experiment 1 a larger percentage of participants reported earning under \$30,000 than the other two experiments. Additionally, in Experiment 3 a larger percentage of participants reported earning over \$150,000, when compared to Experiments 1 and 2 (see Figure 6).

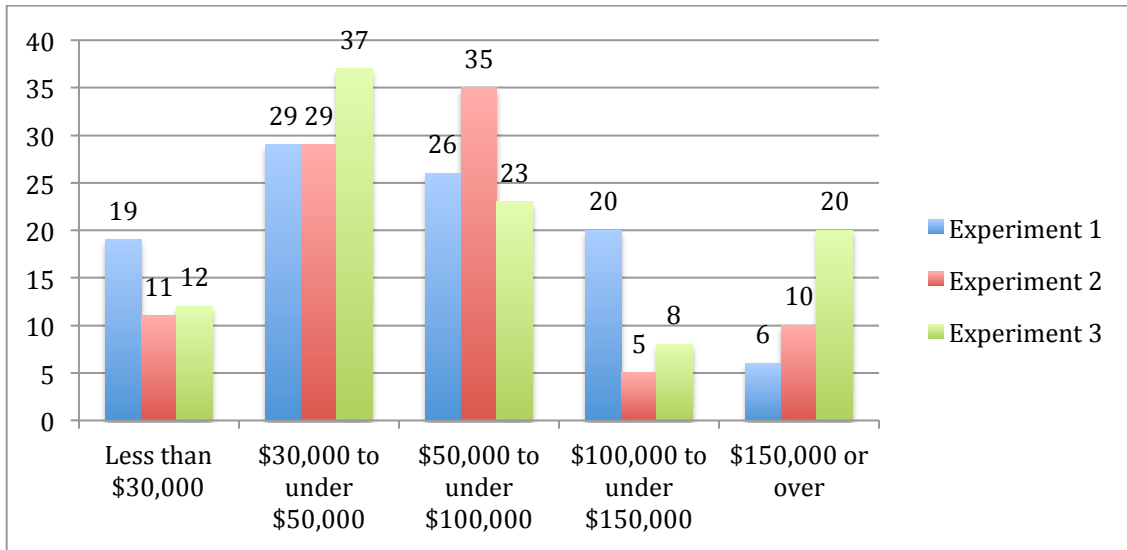


Figure 6. Percentage of income before taxes in 2012 in experiments 1-3.

Finally, figure 7 reveals the participants' current occupations. A high percentage of participants reported working in education. The employment trends were fairly consistent across experiments, except more participants in Experiment 3 reported working in the health care industry when compared to Experiments 1 and 2.

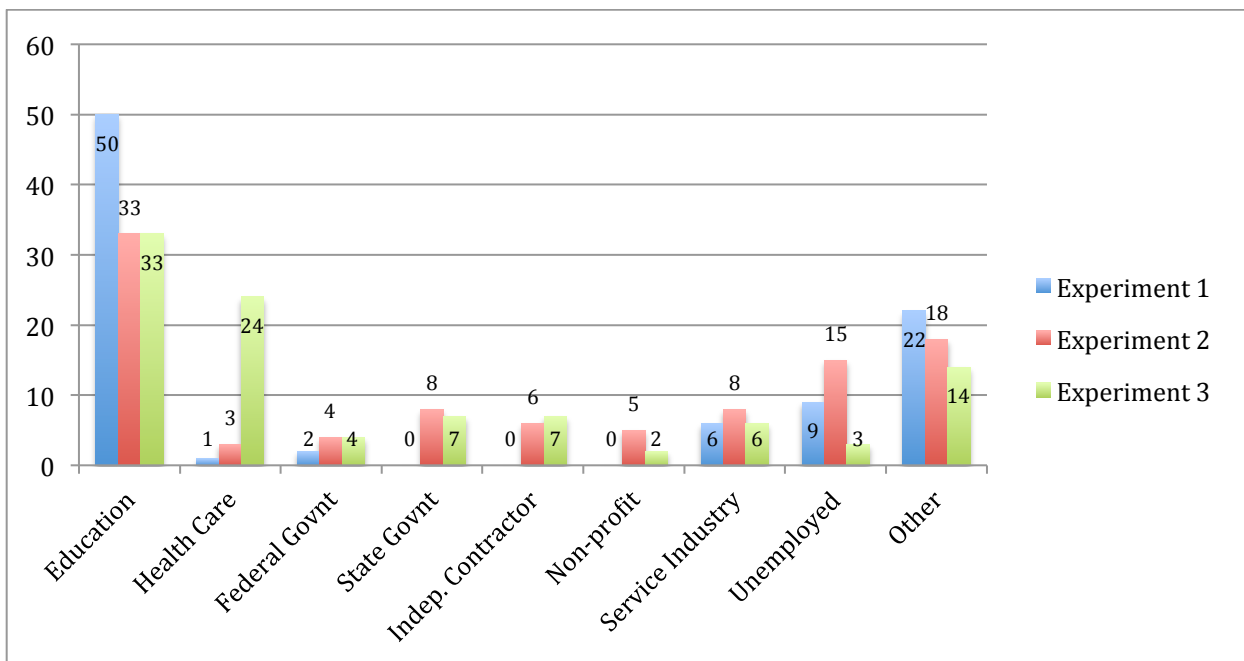


Figure 7. Percentage of current occupation in experiments 1-3.

Procedures

Community liaisons were used to send recruitment emails out to community members in two Midwest school districts; contacts of these community liaisons were encouraged to forward the email along to other community member contacts, modeling the snowball recruitment strategy (Kerlinger & Lee, 2000). In the initial email community members were instructed to contact the primary researcher if they wanted to participate in the study. Specifically, the recruitment email included information about the purpose, eligibility criteria, incentive, promise of confidentiality, and contact information for the primary investigator; the email encouraged community members to contact the primary investigator if they were interested in participating.

The primary researcher coordinated interested participants' schedules to ensure they took their randomly assigned condition at a specific time. The recruitment continued until a minimum of 350 community members (50 per condition) fully participated in the study. Study 2 involved the use of human subjects in data collection, and thus the primary researcher obtained IRB approval in Spring 2013 (#HS13069). After the original IRB was approved, committee suggestions and revisions to the original proposal required the IRB to be amended. Based on these revisions the amendment was submitted and approved on October 9, 2013 (same approval number).

Community members who contacted the primary investigator were sent a second email with a surveymonkey.com hyperlink (an online data collection tool) corresponding with the randomly assigned stimuli. Community members who wished to participate and met the eligibility criteria of being 18 years of age or older, having little knowledge of ASD, and minimal experience with ASD individuals, were instructed to click on the hyperlinked URL into

the SurveyMonkey.com account, where they were asked to read and agree to an informed consent form before participating.

Participants signified their agreement to the informed consent by clicking next after reading the consent form. After consenting, participants were asked a series of questions about their knowledge of ASD and experience with ASD individuals as a pre-screening technique. Then participants read their randomly assigned experimentally manipulated news story about ASD (internal, external, preventable, unpreventable, stable, unstable, control), and were asked to complete a post-treatment questionnaire, which gauged: 1) manipulation effect, 2) emotional response, 3) behavioral intention, 4) behavior, and 5) demographic information. See Appendix B for a complete list of pre-screening and post-treatment questionnaires.

After completion of the post-treatment survey items, participants were reminded their participation and responses would remain completely confidential, thanked, and given the opportunity to enter their name and email address for the chance to win a \$100 Amazon gift card. The entire process took approximately 25-35 minutes.

Pre-Treatment Measures

The current research heeded the advice of Freud and other researchers (see Nelson et al., 1997) by including a pre-treatment questionnaire that captured community members' knowledge of ASD and experience with ASD individuals. This information allowed the primary researcher to monitor the level of knowledge and experience each participant had regarding ASD; participants who reported having above average knowledge level or experience with ASD were not included in the sample. This was because the less people know about a prominent societal issue the more they rely on news media as they form thoughts and opinions about the issue

(Bailey, 2011; Broderick, 2010, 2011). Experiments 1-3 included participants that new little about ASD and had minimal experience with individuals who had the disability.

Knowledge. Knowledge level of ASD was measured by asking participants to respond to the following questions: “How knowledgeable are you about ASD?” “How much do you know about the condition of ASD?” and “How much information have you been exposed to about the condition of ASD?” These questions were asked on a 9-point Likert scale ranging from “None” to “Quite a bit.” These items were combined to form a “knowledge” scale: Experiment 1: $\alpha = .87$; Experiment 2: $\alpha = .76$; Experiment 3: $\alpha = .79$. All three experimental samples revealed a low degree of knowledge about ASD from community members, thus satisfying the requirement to participate: Experiment 1: $M = 2.53$, $SD = .71$; Experiment 2: $M = 2.73$, $SD = .65$; Experiment 3: $M = 2.57$, $SD = .66$.

Experience. Experience with ASD individuals was measured by asking participants to respond to the following questions: “How much experience do you have with ASD individuals?” “How frequently have you been around people who have ASD?” and “How familiar are you with ASD people?” These questions were asked on a 9-point Likert scale ranging from “none” to “quite a bit.” These items were combined to form an “experience” scale: Experiment 1: $\alpha = .83$; Experiment 2: $\alpha = .84$; Experiment 3: $\alpha = .78$. All three experimental samples revealed a low degree of knowledge about ASD from community members, thus satisfying the requirement to participate: Experiment 1: $M = 2.43$, $SD = .66$; Experiment 2: $M = 2.52$, $SD = .75$; Experiment 3: $M = 2.32$, $SD = .69$.

Post-Treatment Measures

Emotional response. Emotional response was measured in two ways; the items for this measure were adopted from the Attribution Questionnaire (Corrigan, 2000). In the case of

Experiments 1 and 2, the emotional responses were measured in terms of sympathetic feeling vs. antagonistic feeling. In the case of Experiment 3, the emotional response was measured in terms of hopefulness and hopelessness. The “emotion” measures were adopted from Corrigan (2000).

Antagonistic feeling. Antagonistic feeling (Experiment 1 & 2) was captured using a 9-point Likert scale ranging from “strongly disagree” to “strongly agree.” These items include: “I feel irritated toward people with ASD,” “I feel annoyed toward people with ASD,” “I am irked toward people with ASD,” and “I feel bothered toward people with ASD.” These items will be combined to form an “antagonistic feeling” scale; Experiment 1: $\alpha = .92$; Experiment 2: $\alpha = .90$.

Sympathetic feeling. Sympathetic feeling (Experiment 1 & 2) was captured through a 9-point Likert scale ranging from “strongly disagree” to “strongly agree.” The items include: “I feel empathy toward people with ASD,” “I feel concern toward people with ASD,” “I feel sympathy toward people with ASD,” and “I feel pity toward people with ASD.” These items were combined to form a “sympathetic feeling” scale; Experiment 1: $\alpha = .77$; Experiment 2: $\alpha = .62$.

Hopeless feeling. Hopeless feeling (Experiment 3) was captured through a 9-point Likert scale ranging from “strongly disagree” to “strongly agree.” These items include: “I feel forlorn toward people with ASD,” “I feel downhearted toward people with ASD,” “I am depressed toward people with ASD,” and “I feel sad toward people with ASD.” These items were combined to form a “hopeless feeling” scale; Experiment 3: $\alpha = .94$.

Hopeful feeling. Hopeful feeling (Experiment 3) was captured using a 9-point Likert scale ranging from “strongly disagree” to “strongly agree.” These items include: “I feel optimistic toward people with ASD,” “I feel encouragement toward people with ASD,” “I am

solace toward people with ASD,” and “I feel hopeful toward people with ASD.” These items were combined to form a “hopeful feeling” scale; Experiment 3: $\alpha = .92$.

Behavioral intention. People’s behavioral intention was measured in two ways—supportive behavioral intention and discriminatory behavioral intention; the items for this measure were adopted from the Attribution Questionnaire (Corrigan, 2000).

Discriminatory behavioral intention. Discriminatory behavioral intention was measured by using a 9-point Likert scale ranging from “strongly disagree” to “strongly agree.” These items include: “I am willing to sign a petition that would limit employment opportunities for people with ASD,” “I am willing to sign a petition that would provide limited funding opportunities for people with ASD,” “I am willing to sign a petition that would provide limited marriage options for people with ASD,” and “I am willing to sign a petition that would provide limited parental options for people with ASD.” These items were combined to form a “discriminatory behavioral intention” scale; Experiment 1: $\alpha = .90$; Experiment 2: $\alpha = .92$; Experiment 3: $\alpha = .92$.

Supportive behavioral intention. Supportive behavioral intention was measured by using a 9-point Likert scale ranging from “strongly disagree” to “strongly agree.” These items include: “I am willing to give support to people with ASD,” “I am willing to give help to people with ASD,” “I am willing to give time to people with ASD,” and “I am willing to give resources to people with ASD.” These items were combined to form a “supportive behavioral intention” scale; Experiment 1: $\alpha = .97$; Experiment 2: $\alpha = .95$; Experiment 3: $\alpha = .94$.

Behavior. People’s behavioral intention was measured in two ways—supportive behavior and discriminatory behavior; the items for these measure were created based on the Attribution Questionnaire (Corrigan, 2000) and extended to capture actual behavioral response.

Discriminatory behavior. Discriminatory behavior was measured by asking people to provide their sign of support for a series of statements that demonstrate discriminatory behavior. People were reminded their choice to support the causes will remain completely confidential, as will the rest of their survey responses. The four statements include: “I am willing to sign a petition that would limit employment opportunities for people with ASD,” “I am willing to sign a petition that would provide limited funding opportunities for people with ASD,” “I am willing to sign a petition that would provide limited marriage options for people with ASD,” and “I am willing to sign a petition that would provide limited parental options for people with ASD.” Responses to these statements were combined and z-standardized to form a “discriminatory behavior” scale; Experiment 1: $\alpha = .99$; Experiment 2: $\alpha = .99$; Experiment 3: $\alpha = .99$.

Supportive behavior. Supportive behavior was measured by asking people to provide their sign of support for a series of statements that demonstrate supportive behavior. People were reminded their choice to support the causes would remain completely confidential, as will the rest of their survey responses. The four statements include: “Please type your name in a box signifying you are willing to be contacted to give support to people with ASD,” “Please type your name in a box signifying you are willing to be contacted to give help to people with ASD,” “Please type your name in a box signifying you are willing to be contacted to give time to people with ASD,” and “Please type your name in a box signifying you are willing to be contacted to give resources to people with ASD.” Responses to these statements were combined and z-standardized to form a “supportive behavior” scale; Experiment 1: $\alpha = .99$; Experiment 2: $\alpha = .98$; Experiment 3: $\alpha = .99$.

Data Analysis

Data analyses involved two statistical programs for Study 2. IBM SPSS 21 was used to answer H2-H4. IBM SPSS AMOS 21 was used to answer H5-H6. The details for Study 2 data analyses are provided.

H2a-c was answered through three separate MANOVA tests; this statistical approach is similar to an ANOVA, but allows for more than one dependent variable. The MANOVA is an ideal statistical approach because it examines differences between levels of the independent variable as a function of a combination of dependent variables and helps to protect the family alpha (Mertler & Vannatta, 2002). In a MANOVA, when there are multiple depending variables a “new” variable is created that is the combination of the dependent variables, weighted to maximize differences between levels of the independent variable (Mertler & Vannatta, 2002). H2a examined the effects of cause attribution (independent variable), which had two levels (internal, external) on emotion (two dependent variables; antagonistic feeling and supportive feeling). H2b examined the effects of cause attribution (internal, external) on behavioral intention (two dependent variables; discriminatory behavioral intention and supportive behavioral intention). H2c examined the effects of cause attribution (internal, external) on actual behavior (two dependent variables; discriminatory behavior and supportive behavior). Where significance was found, univariate tests were run to examine the effects on each dependent variable individually; the alpha level for these tests was .025 (.05/2; # of variables) (Tabachnick & Fidell, 2001).

H3a-c was answered by running three separate MANOVA tests. H3a examined the effects of preventability attribution (independent variable), which had two levels (preventable, unpreventable) on emotion (two dependent variables; antagonistic feeling and sympathetic

feeling). H3b examined the effects of preventability attribution (preventable, unpreventable) on behavioral intention (two dependent variables; discriminatory behavioral intention and supportive behavioral intention). H3c examined the effects of preventability attribution (preventable, unpreventable) on actual behavior (two dependent variables; discriminatory behavior and supportive behavior). Where significance was found, univariate tests were run to examine the effects on each dependent variable individually; the alpha level for these tests was .025.

H4a-c was answered by running three separate MANOVA tests. H4a examined the effects of the stability attribution (independent variable), which had two levels (stable, unstable) on emotion (two dependent variables; antagonistic feeling and sympathetic feeling). H4b examined the effects of stability attribution (stable, unstable) on behavioral intention (two dependent variables; discriminatory behavioral intention and supportive behavioral intention). H4c examined the effects of stability attribution (stable, unstable) on actual behavior (two dependent variables; discriminatory behavior and supportive behavior). Where significance was found, univariate tests were run to examine the effects on each dependent variable individually; the alpha level for these tests was .025.

H5 and H6 were included because H2-H4 only tested direct effects within each of the three experiments; attribution theory (Weiner, 1986, 1995, 2006) suggests mediating or indirect effects between attributions and resulting emotions, behavioral intentions, and behaviors. H5 and H6 were answered using path analysis; this statistical approach not only shed light on the indirect pathways proposed in H5 and H6, but also endorsed the results of H2-H4, while considering simultaneous estimation of all parameters (Schumacker & Lomax, 2010). In order to analyze H5 and H6, IBM SPSS AMOS 21 was used. A series of three path models were run;

one for each of the three experiments. The path models revealed a simultaneous estimate (releasing any concern of Type 1 error) of the key variables in Experiment 1, 2, and 3, yielding results of direct and indirect effects (Schumacker & Lomax, 2010).

CHAPTER 7. STUDY 1 RESULTS

Study 1 results revealed fascinating findings that shed light on how news media portrays ASD. In particular, Study 1 investigated: 1) the association between the presence of attributions of ASD and signaling “stigma” cues that appear in news stories, 2) the association between circulation and the presence of attributions of ASD in news media, 3) the association between circulation and the presence of signaling “stigma” cues in news media, 4) changes in the presence of attributions of ASD in news media over time, and 5) changes in the presence of signaling “stigma” cues of ASD and news media over time.

Hypothesis 1

A series of twelve 2 X 3 chi-square tests revealed partial support for H1, which investigated the association between attributions of ASD and signaling “stigma” cues that appeared in news stories. This section is divided into three sections that organize the results by cause, preventability, and stability attribution, respectively.

Cause Attribution

First, the 2 (labeling cue; presence or absence) X 3 (cause; internal, external, no mention) chi-square revealed a significant overall association, $\chi^2(2, N = 982) = 12.47, p < .01, V^* = .11$. Holm’s Sequential Bonferroni Method of post hoc comparisons suggests the family alpha of .05 should be divided by the number of comparisons (3 in this case), to avoid type I error. Therefore the critical p -value was set to .01. Post hoc comparisons revealed news stories that emphasized internal cause of ASD included a significantly higher percentage of labeling cues than stories that emphasized external cause and no cause (see Table 2).

Table 2

Percentage of the Presence of Labeling Cue by Cause Attribution

| Internal Cause | External Cause | No Cause Mentioned |
|--------------------|------------------|--------------------|
| 53.1% _a | 37% _b | 41.2% _b |

$\chi^2 (2, N = 982) = 12.47, p < .01, V^* = .11$

Note. Percentages with no subscript in common differ at $p < .01$ using Holm's Sequential Bonferroni of post hoc comparisons

Second, the 2 (social skill deficit cue; presence or absence) X 3 (cause; internal, external, no mention) chi-square revealed a significant overall association, $\chi^2 (2, N = 982) = 56.74, p < .001, V^* = .24$. Following the same post hoc method with a critical p -value of .01, analyses revealed news stories that emphasized internal cause of ASD included the highest percentage of social skill deficit cues, whereas and news stories that emphasized external cause reveal the lowest percentage of social skill deficit cues (see Table 3).

Table 3

Percentage of the Presence of Social Skill Deficit Cue by Cause Attribution

| Internal Cause | External Cause | No Cause Mentioned |
|--------------------|--------------------|--------------------|
| 72.2% _a | 36.1% _b | 49.6% _c |

$\chi^2 (2, N = 982) = 56.74, p < .001, V^* = .24$

Note. Percentages with no subscript in common differ at $p < .01$ using Holm's Sequential Bonferroni of post hoc comparisons

Third, the 2 (aberrant behavior cue; presence or absence) X 3 (cause; internal, external, no mention) chi-square revealed a significant overall association, $\chi^2 (2, N = 982) = 43.32, p < .001, V^* = .21$. The post hoc method with a critical p -value of .01 followed. Results continued with a similar trend; news stories that emphasized internal cause of ASD had the highest percentage of aberrant behavior cues and stories that emphasized external cause reveal the lowest percentage of aberrant behavior cues (see Table 4).

Table 4

Percentage of the Presence of Aberrant Behavior Cue by Cause Attribution

| Internal Cause | External Cause | No Cause Mentioned |
|--------------------|--------------------|--------------------|
| 60.3% _a | 29.3% _b | 40.0% _c |

$\chi^2 (2, N = 982) = 43.32, p < .001, V^* = .21$

Note. Percentages with no subscript in common differ at $p < .01$ using Holm's Sequential Bonferroni of post hoc comparisons

Fourth, the 2 (physical appearance cue; presence or absence) X 3 (cause; internal, external, no mention) chi-square revealed a significant overall association, $\chi^2 (2, N = 982) = 9.12, p < .01, V^* = .10$. Post hoc analyses revealed a significantly lower percentage of physical appearance cues, yet the results followed the same trend as the other cues. News stories that emphasized internal cause of ASD revealed the highest percentage of physical appearance cues and news stories about external cause revealed the lowest percentage. However these percentages were not statistically different than stories with no mention of cause (see Table 5).

Table 5

Percentage of the Presence of Physical Appearance Cue by Cause Attribution

| Internal Cause | External Cause | No Cause Mentioned |
|-------------------|-------------------|--------------------|
| 8.7% _a | 1.9% _b | 5.7% _{ab} |

$\chi^2 (2, N = 982) = 9.12, p < .01, V^* = .10$

Note. Percentages with no subscript in common differ at $p < .01$ using Holm's Sequential Bonferroni of post hoc comparisons

Preventability Attribution

Preventability attribution failed to reveal an overall association with all four of the signaling “stigma” cues. Test statistics were reported for each of the four analyses, but no post hoc analyses were necessary. First, the 2 (labeling cue; presence or absence) X 3 (preventability; preventable, unpreventable, no mention) chi-square revealed no association, $\chi^2 (2, N = 982) = 2.23, p = .33$. Second, the 2 (social skill deficit cue; presence or absence) X 3 (preventability; preventable, unpreventable, no mention) chi-square revealed no association, $\chi^2 (2, N = 982) =$

2.70, $p = .26$. Third, the 2 (aberrant behavior cue; presence or absence) X 3 (preventability; preventable, unpreventable, no mention) chi-square was not significant, $\chi^2 (2, N = 982) = 1.11, p = .58$. Fourth, the 2 (physical appearance cue; presence or absence) X 3 (preventability; preventable, unpreventable, no mention) chi-square showed no association, $\chi^2 (2, N = 982) = .34, p < .84$.

Stability Attribution

In the first of the analyses for stability attribution, the 2 (labeling cue; presence or absence) X 3 (stability; stable, unstable, no mention) chi-square revealed no association, $\chi^2 (2, N = 982) = 4.68, p = .10$. Therefore no post hoc analyses were necessary.

In the second analysis for this set, a 2 (social skill deficit cue; presence or absence) X 3 (stability; stable, unstable, no mention) chi-square revealed a significant overall association, $\chi^2 (2, N = 982) = 86.82, p < .001, V^* = .30$. Post hoc analyses revealed news stories often referenced social skill deficit cues when the story described ASD as a stable *or* unstable condition, when compared with news stories that did not reference stability (see Table 6).

Table 6

Percentage of the Presence of Social Skill Deficit Cue by Stability Attribution

| Stable | Unstable | No Mentioned of Stability |
|--------------------|--------------------|---------------------------|
| 71.9% _a | 70.2% _a | 39.9% _b |

$\chi^2 (2, N = 982) = 86.82, p < .001, V^* = .30$

Note. Percentages with no subscript in common differ at $p < .01$ using Holm's Sequential comparisons

Third, a 2 (aberrant behavior cue; presence or absence) X 3 (stability; stable, unstable, no mention) chi-square revealed a significant overall association, $\chi^2 (2, N = 982) = 65.74, p < .001, V^* = .26$. Post hoc analyses revealed news stories have a higher percentage of aberrant behavior cues when the story referenced the stability of ASD, when compared with news stories that did

not reference stability. While the results showed a higher percentage of aberrant behavior cues in stories that emphasized ASD as stable, when compared to unstable, it was not statistically significant at the .01 level (see Table 7).

Table 7

Percentage of the Presence of Aberrant Behavior Cue by Stability Attribution

| Stable | Unstable | No Mentioned of Stability |
|--------------------|---------------------|---------------------------|
| 68.8% _a | 55.7% _{ab} | 32.3% _b |

$\chi^2 (2, N = 982) = 65.74, p < .001, V^* = .26.$

Note. Percentages with no subscript in common differ at $p < .01$ using Holm's Sequential Bonferroni of post hoc comparisons

Finally, the 2 (physical appearance cue; presence or absence) X 3 (stability; stable, unstable, no mention) chi-square revealed no association, $\chi^2 (2, N = 982) = 3.21, p = .07.$

Therefore no post hoc analyses were necessary.

Research Question 1

RQ1 involved a series of three 2 (circulation; national vs. regional) X 2 (attribution; internal, external; preventable, unpreventable; stable, unstable) chi-square tests that revealed associations between the news media circulation and the presence of attributions in news media stories about ASD.

First, the 2 (circulation; national vs. regional) X 2 (attribution; internal, external) chi-square test revealed a significant overall association, $\chi^2 (1, N = 417) = 9.25, p < .01, V^* = .13.$ A significantly larger percentage of news stories with national circulation, when compared to regional circulation, emphasized external cause of ASD. A higher percentage of news stories with a regional circulation, when compared to national circulation, emphasized internal cause of ASD (see Table 8).

Table 8

Percentage of The Presence of Cause Attribution by Circulation

| | <u>National</u> | <u>Regional</u> |
|----------------|-----------------|-----------------|
| Internal Cause | 43.3% | 23% |
| External Cause | 56.7% | 17.6% |

$\chi^2 (1, N = 417) = 9.25, p < .01, V^* = .13$

Attributions of preventability and stability showed no statistical association with circulation. The 2 (circulation; national vs. regional) X 2 (attribution; preventable, unpreventable) chi-square test revealed no association, $\chi^2 (1, N = 40) = .94, p = .33$. The 2 (circulation; national vs. regional) X 2 (attribution; stable, unstable) chi-square test also revealed no association, $\chi^2 (1, N = 373) = .28, p = .60$. However a noteworthy trend emerged. News media with national and regional circulation emphasized how ASD was preventable much more than they portrayed it as unpreventable (see Table 9). Additionally news media with national and regional circulation also emphasized how ASD was an unstable condition more frequently than positioning it as a stable condition (see Table 10).

Table 9

Percentage of The Presence of Preventable Attribution by Circulation

| | <u>National</u> | <u>Regional</u> |
|---------------|-----------------|-----------------|
| Preventable | 77.8% | 63.6% |
| Unpreventable | 22.2% | 36.4% |

Table 10

Percentage of The Presence of Stability Attribution by Circulation

| | <u>National</u> | <u>Regional</u> |
|----------|-----------------|-----------------|
| Stable | 15.8% | 17.9% |
| Unstable | 84.2% | 82.1% |

Research Question 2

In regard to RQ2, one of the four 2 (circulation; national vs. regional) X 2 (presence or absence of signaling “stigma” cue; labeling, social skill deficit, aberrant behavior, physical appearance) chi-square tests revealed an association between circulation of news media and the presence of signaling “stigma” cues in news media stories about ASD. The 2 (circulation; national vs. regional) X 2 (social skill deficit cue; presence, absence) chi-square test revealed a significant overall association, $\chi^2 (1, N = 982) = 5.34, p < .05, V^* = .07$. A significantly larger percentage of news stories with regional circulation, when compared to national circulation, emphasized social skill deficit cue (see Table 11).

Table 11

Percentage of The Presence of Social Skill Deficit Cue by Circulation

| | <u>National</u> | <u>Regional</u> |
|-------------|-----------------|-----------------|
| No Presence | 52.4% | 45% |
| Presence | 47.6% | 55% |

$\chi^2 (1, N = 982) = 5.34, p < .05, V^* = .07$

The signaling “stigma” cues of labeling, aberrant behavior, and physical appearance showed no statistical association with circulation. The 2 (circulation; national vs. regional) X 2 (labeling cue; presence, absence) chi-square test revealed no association, $\chi^2 (1, N = 982) = .16, p = .69$. Despite non-significant results, the analysis revealed labeling appeared in 42.2% of nationally circulating news stories and 43.5% of news stories with regional circulation. This suggests almost half of the news stories about ASD with national or regional coverage included the labeling cue.

The 2 (circulation; national vs. regional) X 2 (aberrant behavior cue; presence, absence) chi-square test also revealed no association, $\chi^2 (1, N = 982) = .18, p = .67$. Again while these results failed to reveal an association with circulation, the analysis illustrates that aberrant

behavior cues appeared in 41.3% of news stories with national circulation and 42.7% of stories with regional circulation. Similar to labeling, reference to aberrant behaviors of ASD appeared in almost half of the news stories about the disability.

Finally, the 2 (circulation; national vs. regional) X 2 (physical appearance cue; presence, absence) chi-square test revealed no association, $\chi^2(1, N = 982) = 3.39, p = .07$. This non-significant finding demonstrated that only 6.9% of nationally circulating news stories and 4.2% of those in regional circulation included physical appearance cues. Not only is this an encouraging finding, it attests to the fact that ASD is a disability that does not include physical abnormalities. While some news stories still suggest this is the case, it appears to be rare.

Research Question 3

RQ3 revealed interesting trends regarding the presence of attributions about ASD in news media from 1998-2013. This section addresses findings of trends of internal and external cause attribution, preventable and unpreventable attribution, and stable and unstable attribution, over time, respectively.

Cause Attribution

First, Spearman's rank correlation coefficient indicated the presence of internal cause attribution in news media stories about ASD has significantly decreased over time ($r_s = -.81, p = .01$) whereas the presence of external cause attributions about ASD was not significantly correlated with time. Internal cause attribution appeared in about two thirds of news media stories about ASD in 1998-2000, but gradually decreased over the past 16 years. In 2011-2013 internal cause attribution appeared much less, with a small spike in 2012. External cause attribution was only referenced 2.8% of the time in 199; it peaked during 2002 and 2006. The presence of external cause attribution dropped off in 2009 and then rose periodically during

2010-2013. Table 12 presents the percentage of internal and external cause attributions that were present in news media coverage of ASD over time. Figure 4 illustrates a sequence chart of the visual trend in presence of internal and external cause attributions from 1998-2013.

Table 12

Percentage of the Presence of Cause Attribution by Year

| | Internal | External |
|------|----------|----------|
| 1998 | 30.6% | 2.8% |
| 1999 | 29.6% | 14.8% |
| 2000 | 33.8% | 25.0% |
| 2001 | 22.2% | 26.7% |
| 2002 | 25.0% | 33.9% |
| 2003 | 31.3% | 31.3% |
| 2004 | 26.4% | 22.6% |
| 2005 | 23.0% | 26.2% |
| 2006 | 29.7% | 35.9% |
| 2007 | 26.4% | 18.1% |
| 2008 | 21.9% | 16.4% |
| 2009 | 13.2% | 5.9% |
| 2010 | 12.8% | 15.1% |
| 2011 | 4.2% | 23.6% |
| 2012 | 16.3% | 22.5% |
| 2013 | 4.3% | 17.4% |

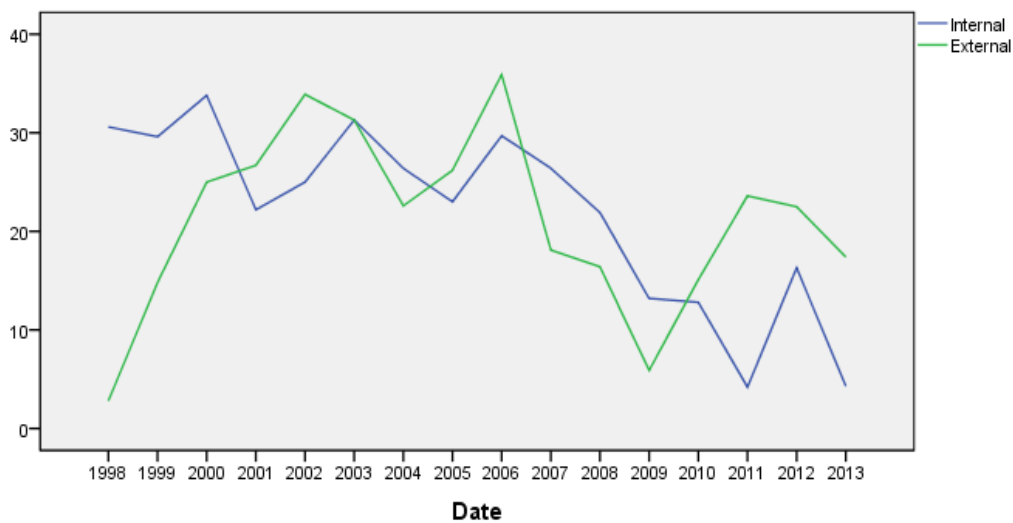


Figure 8. Sequence chart: Percentage of the presence of cause attributions by year.

Preventability Attribution

Results revealed the presence of both preventable and unpreventable attributions in news media stories about ASD was not significantly correlated with time. In fact, the emphasis of the preventability of ASD was rare. Emphasis on ASD as preventable peaked in 1999 and resurfaced in 2006-2008 and 2010-2012. Reference to ASD as unpreventable first surfaced in 2000 and then reappeared in 2008-2010, the exact window of time that ASD was not referred to as preventable. Table 13 presents the percentage preventable and unpreventable attributions that appeared in news media coverage of ASD. Figure 5 illustrates a sequence chart of the visual trend in the presence of preventable and unpreventable attributions from 1998-2013.

Table 13

Percentage of the Presence of Preventability Attribution by Year

| | Preventable | Unpreventable |
|------|-------------|---------------|
| 1998 | 0% | 0% |
| 1999 | 11.1% | 0% |
| 2000 | 5.9% | 1.5% |
| 2001 | 4.4% | 0% |
| 2002 | 0% | 0% |
| 2003 | 0% | 0% |
| 2004 | 0% | 0% |
| 2005 | 0% | 0% |
| 2006 | 3.1% | 0% |
| 2007 | 4.2% | 0% |
| 2008 | 5.5% | 1.4% |
| 2009 | 0% | 1.5% |
| 2010 | 1.2% | 10.5% |
| 2011 | 4.2% | 0% |
| 2012 | 3.8% | 0% |
| 2013 | 0% | 0% |

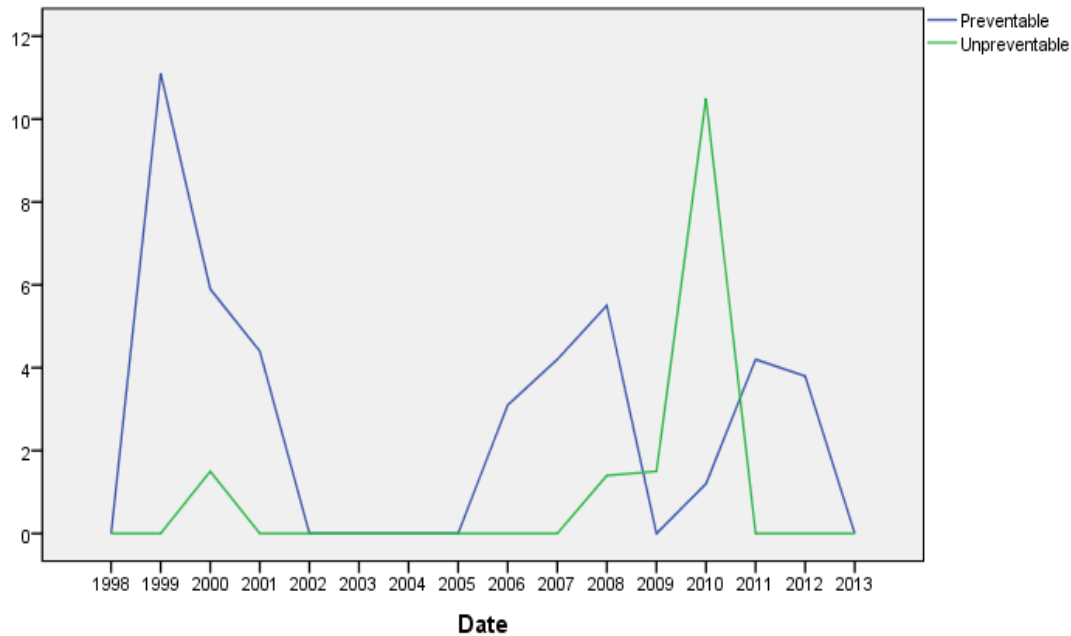


Figure 9. Sequence chart: Percentage of the presence of preventability attributions by year.

Stability Attribution

Finally, the Spearman's rank correlation coefficient indicated the presence of unstable attribution (reference to treating or curing ASD) in news media stories about ASD has significantly decreased over time ($r_s = -.66, p = .01$), whereas references to ASD as a stable condition was not significantly correlated with time. Unstable attribution consistently appeared more frequently than stable attribution, reaching an all time high in 2005 and tapering off from 2006-2013; in 2013 unstable attributions of ASD were referenced minimally. Stable attributions in news media coverage of ASD emerged in this analysis after 1998; references peaked in 2001 and 2008. In recent years, news media portrayals of ASD as stable have tapered off, but slightly increased in 2013. Table 14 presents the percentage stable and unstable attributions were present in news media coverage of ASD. Figure 6 illustrates a sequence chart of the visual trend in the presence of stable and unstable attributions from 1998-2013.

Table 14

Percentage of the Presence of Stability Attribution by Year

| | Stable | Unstable |
|------|--------|----------|
| 1998 | 0% | 41.7% |
| 1999 | 5.6% | 46.3% |
| 2000 | 1.5% | 32.4% |
| 2001 | 13.3% | 31.1% |
| 2002 | 12.5% | 23.2% |
| 2003 | 2.1% | 58.3% |
| 2004 | 5.7% | 41.5% |
| 2005 | 6.6% | 54.1% |
| 2006 | 7.8% | 34.4% |
| 2007 | 12.5% | 31.9% |
| 2008 | 13.7% | 21.9% |
| 2009 | 2.9% | 23.5% |
| 2010 | 8.1% | 25.6% |
| 2011 | 2.8% | 16.7% |
| 2012 | 2.5% | 28.8% |
| 2013 | 4.3% | 6.5% |

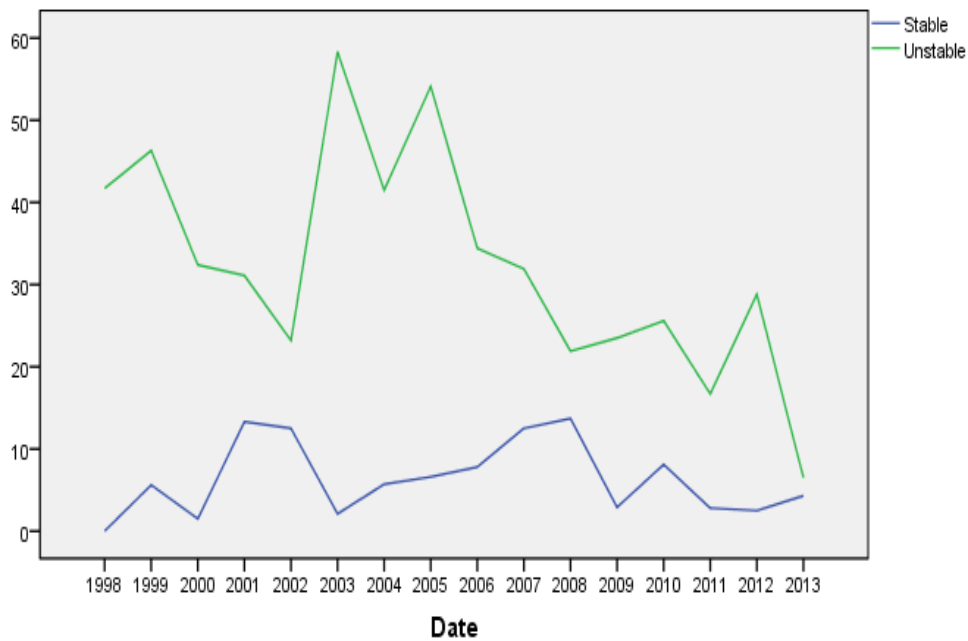


Figure 10. Sequence chart: Percentage of the presence of stability attributions by year.

Research Question 4

Results for RQ4 revealed three of the four signaling “stigma” cues were significantly correlated with time. Spearman’s rank correlation coefficient indicated news media coverage of ASD significantly decreased in mention of labeling cue ($r_s = -.83, p = .01$), social skill deficit cue ($r_s = -.68, p = .01$), and aberrant behavior cue ($r_s = -.90, p = .01$) over time. Reference to physical appearance cues in news stories about ASD displayed no significant relationship with changes over time.

Labeling cue was referenced in almost 70% of news media stories about ASD in the late 90s and hit an all time high in 2000. After that the inclusion of labeling cues in news media coverage of ASD slowly tapered off until 2009. From 2010-2013 labeling cue references increased again. Social skill deficits began to be referenced even more than labeling cues in 2003. From that point on social skill deficit cues were the most frequently mentioned signaling “stigma” cue until 2013, when they tapered off and labeling increased. Aberrant behavior became the most frequently referenced signaling “stigma” cue in 2001 and then slowly decreased in presence over the years. Physical appearance cue references were fairly sparse in the late 90s; references rose a bit in the early 2000s, dropped dramatically in 2004, and then peaked in 2005. From 2006-2013 references to physical appearance cues appeared to be fairly consistent, showing a slight rise 2013.

Table 15 presents the percentage of signaling “stigma” cues (labeling cue, social skill deficit cue, aberrant behavior cue, and physical appearance cue) that appear in news media coverage of ASD over the past 16 years. Figure 7 illustrates a sequence chart of the visual trend regarding the presence of signaling “stigma” cues from 1998-2013.

Table 15

Percentage of the Presence of Signaling “Stigma” Cues by Year

| | Labeling Cue | Social Skill Deficit Cue | Aberrant Behavior Cue | Physical Appearance Cue |
|------|--------------|--------------------------|-----------------------|-------------------------|
| 1998 | 69.4% | 55.6% | 63.9% | 0% |
| 1999 | 57.4% | 57.4% | 59.3% | 1.9% |
| 2000 | 72.1% | 61.8% | 66.2% | 10.3% |
| 2001 | 66.7% | 64.4% | 73.3% | 8.9% |
| 2002 | 60.7% | 48.2% | 50.0% | 10.7% |
| 2003 | 43.8% | 66.7% | 52.1% | 10.4% |
| 2004 | 50.9% | 66.0% | 41.5% | 0% |
| 2005 | 47.5% | 59.0% | 50.8% | 11.5% |
| 2006 | 39.1% | 51.6% | 40.6% | 6.3% |
| 2007 | 31.9% | 62.5% | 43.1% | 5.6% |
| 2008 | 32.9% | 49.3% | 46.6% | 6.8% |
| 2009 | 20.6% | 41.2% | 22.1% | 4.4% |
| 2010 | 25.6% | 37.2% | 23.3% | 2.3% |
| 2011 | 36.1% | 40.3% | 20.8% | 4.2% |
| 2012 | 36.3% | 46.3% | 28.8% | 1.3% |
| 2013 | 36.3% | 30.4% | 21.7% | 4.3% |

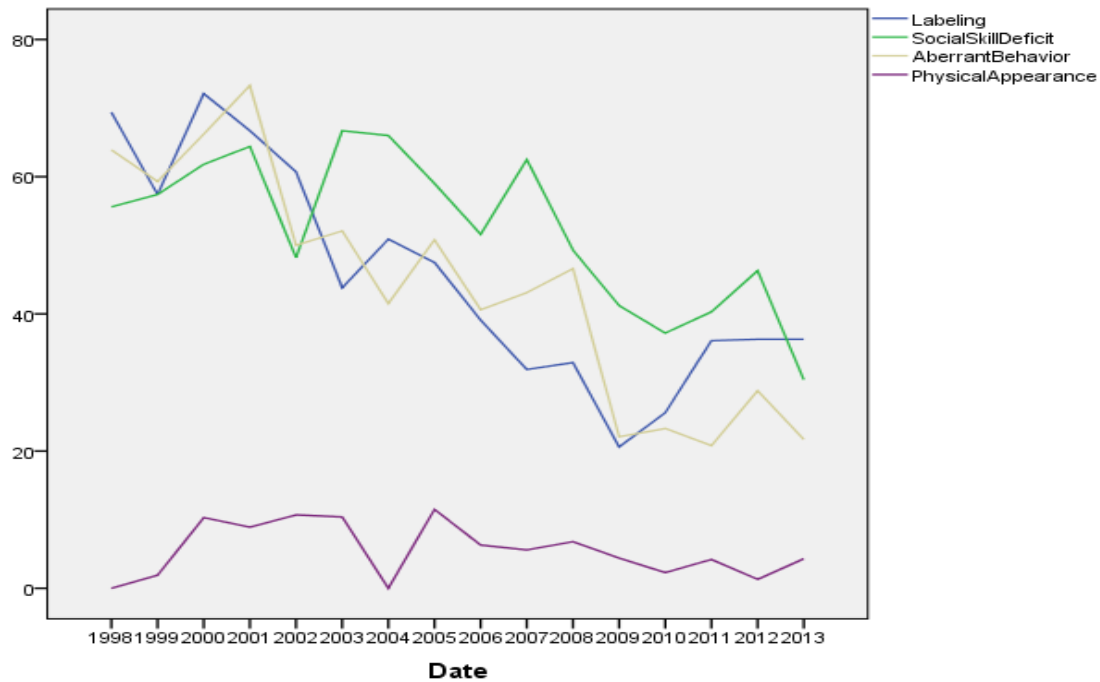


Figure 11. Sequence chart: Percentage of the presence of signaling “stigma” cues by year.

Study 1 Results Summary

Study 1 results shed light on how news media represents the prominent disability—ASD. One hypothesis and four research questions revealed important findings about the association between attributions of ASD and signaling “stigma” cues in news media stories, the role of circulation on the presence of certain attributions and signaling “stigma” cues, and how the presence of attributions of ASD and signaling “stigma” cues in news media stories have changed over the past 16 years.

First, news stories that emphasized internal cause attributions were associated with a significantly higher percentage of signaling “stigma” cues (i.e., labeling cue, social skill deficit cue, aberrant behavior cue, physical appearance cue) than news stories that portrayed external cause attribution. News stories that represented any degree of preventability about ASD revealed no association with signaling “stigma” cues. Stories that highlighted stability attribution revealed an association with two of the four signaling “stigma” cues. First, any mention of stability (stable or unstable) was significantly associated with social skill deficit cue, when compared to no mention of stability. Second, news stories that emphasized ASD as a stable condition were combined with a higher percentage of aberrant behavior cues than stories that had no mention of stability.

Nationally circulating stories tended to emphasize external causes of ASD, whereas regionally circulating stories emphasized internal causes more frequently. While no statistical association was found between preventability or stability attribution and circulation, interesting trends emerged. Both national and regional news media stories emphasized ASD as preventable and unstable much more frequently than unpreventable and stable.

Regionally circulating news stories tended to include social skill deficit cues more frequently than nationally circulating news stories. While no association was detected between circulation and labeling cue, the labeling cue appeared in 42.2% of the national news stories and 43.5% of the regional news stories. Aberrant behavior cues appeared in 41.3% of the news stories with national circulation and 42.7% of the stories with regional circulation. Only 6.9% of the national and 4.2% of regional news stories included physical appearance cues. This reaffirms the fact that ASD is a disability that is not defined by physical abnormalities.

Over the past 16 years, news media's emphasis on internal cause attributions significantly decreased, whereas the presence of external cause attributions appeared to show no significant change over time. The presence of preventable and unpreventable attributions in news media showed no significant change over time; emphasis of the preventability of ASD was fairly rare overall. Portrayals of ASD as preventable peaked in 1999, whereas unpreventable attribution peaked in 2010. Finally, the presence of unstable attribution in news media stories about ASD significantly decreased over time, whereas references to ASD as a stable condition was not significantly correlated with time. In sum, the presence of internal cause attributions and unstable attributions in news media coverage of ASD has diminished—the other attributions showed a wavering presence over time.

Finally, the results of Study 1 revealed three of the four signaling “stigma” cues have significantly decreased over time. Labeling cue, social skill deficit cue, and aberrant behavior cue have tapered off. While this is an encouraging finding, these cues still appeared in approximately 21-35% of news media stories about ASD from 2013. Physical appearance cue presence has not changed significantly over time; it has remained fairly low throughout the past 16 years.

CHAPTER 8. STUDY 2 RESULTS

Study 2 revealed findings about the direct and indirect effects of attributions of ASD emphasized in news stories on community members' emotions, behavioral intentions, and behaviors. Phase 1 of Study 2 shed light on the direct effects of attributions of ASD and Phase 2 reaffirmed the results of Phase 1, while also elucidating indirect effects through a simultaneous estimation of parameters. Study 2 findings suggest attributions of ASD emphasized in news media stories play a key role in how community members feel and behave toward ASD individuals.

Phase 1: Direct Effects

Hypothesis 2

Results revealed partial support for H2a-c. For H2a, a MANOVA test revealed a significant main effect for cause attribution on emotion, Wilks' $\Lambda = .95$, $F(2, 97) = 2.60$, $p < .05$, partial $\eta^2 = .05$. In order to protect the family alpha, the significance level was reduced to .025 for the univariate analyses; an alpha of $< .05$ was considered to be marginally significant. Based on the family alpha, the univariate analysis for cause attribution revealed a marginally significant main effect for antagonistic feeling, $F(1, 98) = 3.98$, $p < .05$, partial $\eta^2 = .04$, but not for sympathetic feeling, $F(1, 98) = 0.31$, $p = .58$. People who read the news story about internal cause of ASD reported a higher degree of antagonistic feelings than people who read the story about external cause (see Table 16).

Table 16

Antagonistic Feeling as a Function of Cause Attribution

| Internal Cause $M (SD)$ | External Cause $M (SD)$ |
|-------------------------|-------------------------|
| 5.80 (1.72) | 5.14 (1.56) |

$F(1, 98) = 3.98$, $p < .05$, partial $\eta^2 = .04$

H2b did not detect a significant main effect for cause attribution on behavioral intention, Wilks' $\Lambda = .99$, $F(2, 97) = 0.52$, $p = .60$.

H2c revealed a significant main effect for cause attribution on actual behavior, Wilks' $\Lambda = .89$, $F(2, 97) = 5.83$, $p < .01$, partial $\eta^2 = .11$. Univariate analyses for cause attribution revealed a significant main effect for supportive behavior, $F(1, 98) = 6.67$, $p < .025$, partial $\eta^2 = .06$, but not for discriminatory behavior, $F(1, 98) = 3.39$, $p = .07$. People who read the news story about external cause of ASD reported a higher level of supportive behavior than people who read the story about internal cause (see Table 17).

Table 17

Supportive Behavior as a Function of Cause Attribution

| Internal Cause <i>M (SD)</i> | External Cause <i>M (SD)</i> |
|------------------------------|------------------------------|
| -0.31 (0.94) | 0.20 (1.03) |

$F(1, 98) = 6.67$, $p < .025$, partial $\eta^2 = .06$

Note. Means and standard deviations are *z*-standardized

Hypothesis 3

H3a failed to detect a significant main effect for preventability attribution on emotion, Wilks' $\Lambda = .97$, $F(2, 97) = 1.64$, $p = .20$, partial $\eta^2 = .03$. H3b also failed to detect a significant main effect for preventability attribution on behavioral intention, Wilks' $\Lambda = .97$, $F(2, 97) = 1.60$, $p = .21$.

H3c revealed an overall significant main effect for preventability attribution on actual behavior, Wilks' $\Lambda = .88$, $F(2, 97) = 6.81$, $p < .01$, partial $\eta^2 = .12$. Univariate analyses for preventability attribution revealed a significant main effect for supportive behavior, $F(1, 98) = 12.86$, $p < .001$, partial $\eta^2 = .12$, but no significant main effect for discriminatory behavior, $F(1, 98) = 0.06$, $p = .80$. People who read the news story about ASD being unpreventable reported a

higher level of supportive behavior than people who read the story about ASD being preventable (see Table 18).

Table 18

Supportive Behavior as a Function of Preventability Attribution

| Preventable <i>M (SD)</i> | Unpreventable <i>M (SD)</i> |
|---|-----------------------------|
| -0.36 (0.95) | 0.33 (0.99) |
| $F(1, 98) = 12.86, p < .001, \text{partial } \eta^2 = .08$ | |
| <i>Note.</i> Means and standard deviations are <i>z</i> -standardized | |

Hypothesis 4

H4a revealed an overall significant main effect for stability attribution on actual behavior, Wilks' $\Lambda = .86, F(2, 97) = 7.97, p < .001, \text{partial } \eta^2 = .14$. Univariate analyses for stability attribution revealed a significant main effect for hopelessness, $F(1, 98) = 11.35, p < .001, \text{partial } \eta^2 = .10$, as well as a significant main effect for hopefulness, $F(1, 98) = 9.23, p < .01, \text{partial } \eta^2 = .10$. People who read the news story about ASD being stable reported a higher level of hopelessness than people who read the unstable story (see Table 19). People who read the news story about how ASD is an unstable condition reported a higher level of hopefulness compared to people who read the story that emphasized ASD as a stable condition (see Table 20).

Table 19

Hopelessness as a Function of Stable Attribution

| Stable <i>M (SD)</i> | Unstable <i>M (SD)</i> |
|--|------------------------|
| 4.83 (1.73) | 3.69 (1.63) |
| $F(1, 98) = 11.35, p < .001, \text{partial } \eta^2 = .10$ | |

Table 20

Hopefulness as a Function of Stability Attribution

| Stable <i>M (SD)</i> | Unstable <i>M (SD)</i> |
|--|------------------------|
| 5.89 (1.65) | 6.75 (1.13) |
| $F(1, 98) = 9.23, p < .01, \text{partial } \eta^2 = .10$ | |

H4b failed to detect a significant main effect for stability attribution on behavioral intention, Wilks' $\Lambda = .99$, $F(2, 97) = .64$, $p = .53$.

H4c revealed a marginally significant main effect for stability attribution on actual behavior, Wilks' $\Lambda = .95$, $F(2, 97) = 2.73$, $p < .07$, partial $\eta^2 = .05$. The univariate analyses for stability attribution also revealed a marginally significant main effect for discriminatory behavior, $F(1, 98) = 3.80$, $p < .05$, partial $\eta^2 = .04$, but no main effect for supportive behavior, $F(1, 98) = 0.84$, $p = .36$. People who read the news story about the stable nature of ASD reported a higher level of discriminatory behavior than people who read the story about ASD as an unstable condition. These results should be interpreted with caution as they yielded only marginally significant results (see Table 21).

Table 21

Discriminatory Behavior as a Function of Stable Attribution

| Stable <i>M</i> (<i>SD</i>) | Unstable <i>M</i> (<i>SD</i>) |
|---|---------------------------------|
| 0.30 (0.46) | 0.14 (0.35) |
| $F(1, 98) = 3.80$, $p < .05$, partial $\eta^2 = .04$ | |
| <i>Note.</i> Means and standard deviations are <i>z</i> -standardized | |

Phase 2: Indirect Effects

The goal of Study 2 was to investigate the direct and indirect influence of attributions of ASD emphasized in news media on community members' emotions, behavioral intentions, and behaviors. Phase 2 of Study 2 unveiled compelling evidence regarding the power of internal and external (Experiment 1), preventable and unpreventable (Experiment 2), and stable and unstable (Experiment) attributions. This section provides a detailed account of the three path analyses for Experiments 1-3, followed by responses to H5 and H6 and a discussion of how these results support earlier results provided for H2-H4. The path analyses were conducted using IBM SPSS AMOS 21.

Experiment 1

Experiment 1 investigated the effects of cause attributions on community members' emotions, behavioral intentions, and behaviors. To test the proposed theoretical model for this experiment (Figure 1), a correlation matrix was created (see Table 22).

Table 22

Pearson Correlation Matrix of Variables for Experiment 1 (N = 100)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|-------------------------------|--------|------|-------|-------|--------|-------|-----|---|
| 1. Internal Cause | 1 | | | | | | | |
| 2. External Cause | -.84** | 1 | | | | | | |
| 3. Antagonistic Feeling | .23 | -.08 | 1 | | | | | |
| 4. Sympathetic Feeling | .05 | .10 | .25** | 1 | | | | |
| 5. Discriminatory Behav. Int. | -.10 | .13 | .04 | -.02 | 1 | | | |
| 6. Supportive Behav. Int. | .04 | -.04 | .03 | .40** | -.40** | 1 | | |
| 7. Discriminatory Behavior | .15 | -.13 | .08 | -.10 | .39* | -.20* | 1 | |
| 8. Supportive Behavior | -.14 | .14 | -.04 | .08 | -.05 | .21* | .10 | 1 |

Note. ** $p < .01$; * $p < .05$

The proposed theoretical model was tested using maximum likelihood estimation. This was an appropriate estimation technique because the observed variables consisted of interval scales, were multivariate normal, and did not contain missing data or outliers (Schumacker & Lomax, 2010). This initial model was identified, recursive, and converged in seven iterations, but needed to be re-specified because it revealed a poor fit for the data ($\chi^2 [17, N = 100] = 48.67$, $p < .001$; RMSEA = .14; SRMR = .11; NFI = .78; CFI = .84; AIC = 86.67). The modification index (MI) and standardized residual covariance (SRC) were used to guide model modification. The modification indices indicated adding paths from antagonistic feeling to sympathetic feeling (MI = 6.65) and from discriminatory behavioral intention to supportive behavioral intention (MI = 17.45). These modifications would reduce the chi-square value and improve the overall fit. The empirical modification clues were crosschecked with the SRC to confirm their addition into the model. Theoretical justification for these modifications is provided in the discussion.

The proposed model for Experiment 1 was re-specified to include the additional pathways (Model 2). This model was also identified, recursive, and converged in seven iterations. The analysis revealed Model 2 was a good fit for the data ($\chi^2 [15, N = 100] = 22.16, p = .10$; RMSEA = .07; SRMR = .05; NFI = .90; CFI = .96; AIC = 64.16). Figure 12 displays a diagram of the standardized parameter estimates and significance levels for Model 2.

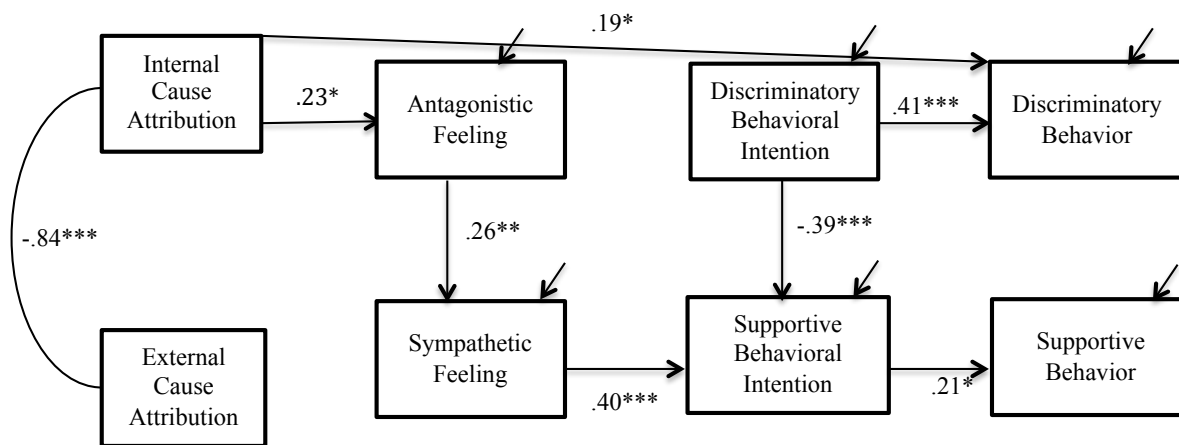


Figure 12. Experiment 1—path model diagram of the relationships between causal attribution, emotions, behavior intentions, and behaviors (Model 2). The model displays standardized beta weights and correlation coefficients; *** $p < .001$; ** $p < .01$; * $p < .05$.

Hypotheses H5a-b and 6a-b. In Experiment 1, the observed relationships in Model 2 illuminated new knowledge about the direct and indirect effects of cause attributions of ASD emphasized in news stories. H5a-b and H6a-b results are addressed first as these are the subjects of interest in Phase 2 of Study 2. Then results of H2a1-2, H2b1-2, and H2c1-2 are presented and discussed in regard to the results from Phase 1.

First, the path analysis in Experiment 1 did not support H5a or H6a. For H5a, internal cause attribution had a direct influence on antagonistic feeling ($r = .23, p < .05$), which indirectly

led to sympathetic feeling ($r = .26, p < .01$), supportive behavioral intention ($r = .40, p < .001$), and supportive behavior ($r = .21, p < .05$). In regard to H6a, discriminatory behavioral intention appeared to be unaffected by attribution or emotion, but discriminatory behavioral intention had a positive influence on discriminatory behavior ($r = .41, p < .001$), and negative influence on supportive behavioral intention ($r = -.39, p < .001$), which lead to an indirect decrease in supportive behavior ($r = .08, p < .05$).

In regard to H5b, sympathetic feeling did not mediate the relationship between external attribution and supportive behavioral intention, but sympathetic feeling did have a direct positive influence on supportive behavioral intention ($r = .40, p < .001$). For H6b, supportive behavioral intention did not mediate the relationship between external cause attribution and supportive behavior, but supportive behavioral intention did mediate the relationship between sympathetic feeling and supportive behavior ($r = .08, p < .05$).

Revisiting H2a-c. Phase 2 used path analysis not only to identify potential mediating relationships between attributions, emotions, behavioral intentions, and behaviors, but also to consider the simultaneous estimation of all parameters (Schumacker & Lomax, 2010). First, H2a1-2 was partially supported, in line with the results from Phase 1. First, internal cause attributions did have a direct positive influence on antagonistic feelings ($r = .23, p < .05$; H2a1); recalling back to Phase 1, the univariate analysis revealed internal cause attribution elicited a higher degree of antagonistic feeling than external cause attribution. Also inline with Phase 1, H2a2 was not supported; external cause attribution did not reveal a direct positive relationship with sympathetic feeling.

Second, H2b1-2 was not supported in the path analysis. These findings aligned with the results from Phase 1. Neither internal nor external cause attribution revealed a significant difference in discriminatory or supportive behavioral intention.

Third, H2c1-2 was partially supported. Internal cause attribution had a direct positive influence on discriminatory behavioral intention ($r = .19, p < .05$) (H2c1). However, external cause attribution revealed no direct relationship with supportive behavior. This finding highlights the benefit of path analysis; Phase 1 results actually indicated external cause attribution has a positive impact on people's supportive behavior, but detected no difference in terms of discriminatory behavior. The path analysis not only relieves the concern for type 1 error, but also more closely resembles reality in that it offers the simultaneous estimation of all parameters.

Table 23 reports the R^2 values indicating the fit for each separate regression equation. In particular this analysis explained over 30% of the variance in supportive behavioral intention, and almost 20% of the variance in supportive behavior. Implications for these key findings are discussed.

Table 23

| <i>Prediction Equations and Corresponding R² Values for Experiment 1</i> | | |
|---|-----------------------------------|----------------------|
| | <i>Prediction Equation</i> | <i>R²</i> |
| Internal Cause Attribution (X_1) | --- | |
| External Cause Attribution (X_2) | --- | |
| Antagonistic Feeling (Y_1) | $Y_1 = .23X_1 + \zeta_1$ | .05 |
| Sympathetic Feeling (Y_2) | $Y_2 = .26Y_1 + \zeta_2$ | .07 |
| Discriminatory Behav. Int. (Y_3) | $Y_3 = \zeta_3$ | .01 |
| Supportive Behav. Int. (Y_4) | $Y_4 = .40Y_2 - .39Y_3 + \zeta_4$ | .31 |
| Discriminatory Behav. (Y_5) | $Y_5 = .19X_1 + .41Y_3 + \zeta_5$ | .07 |
| Supportive Behav. (Y_6) | $Y_6 = .21Y_4 + \zeta_6$ | .19 |

Experiment 2

Experiment 2 investigated the effects of preventability attributions on community members' emotions, behavioral intentions, and behaviors. To test the proposed theoretical model for this experiment (Figure 2), a correlation matrix was created (see Table 24).

Table 24

Pearson Correlation Matrix of Variables for Experiment 2 (N = 100)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|-------------------------------|--------|-------|-------|-------|--------|-------|-------|---|
| 1. Preventable | 1 | | | | | | | |
| 2. Unpreventable | -.71** | 1 | | | | | | |
| 3. Antagonistic Feeling | .08 | -.15 | 1 | | | | | |
| 4. Sympathetic Feeling | -.11 | .04 | .38** | 1 | | | | |
| 5. Discriminatory Behav. Int. | .24* | -.20* | -.07 | .05 | 1 | | | |
| 6. Supportive Behav. Int. | -.15 | .09 | -.06 | .27** | -.12 | 1 | | |
| 7. Discriminatory Behavior | .12 | -.16 | -.09 | -.09 | -.38** | .03 | 1 | |
| 8. Supportive Behavior | -.21* | .10 | -.11 | .05 | -.11 | .39** | .31** | 1 |

Note. ** $p < .01$; * $p < .05$

The proposed theoretical model was tested using maximum likelihood estimation (Schumacker & Lomax, 2010). This initial model was identified, recursive, and converged in six iterations, but needed to be re-specified because it revealed a poor fit for the data ($\chi^2 [17, N = 100] = 50.02, p < .001$; RMSEA = .14; SRMR = .10; NFI = .70; CFI = .76; AIC = 88.02). The modification index (MI) and standardized residual covariance (SRC) were used to guide model modification. The modification indices indicated adding paths from antagonistic feeling to sympathetic feeling (MI = 15.05) and from discriminatory behavior to supportive behavior (MI = 11.81). These modifications would reduce the chi-square value and improve the overall fit. The empirical modification clues were crosschecked with the SRC to confirm their addition into the model. Theoretical justification for these modifications is provided in the discussion.

The proposed model for Experiment 2 was re-specified to include the additional pathways (Model 2). This model was also identified, recursive, and converged in six iterations. The analysis revealed Model 2 was a good fit for the data ($\chi^2 [15, N = 100] = 20.30, p = .16$; RMSEA = .05; SRMR = .06; NFI = .88; CFI = .96; AIC = 62.30). Figure 13 displays a diagram of the standardized parameter estimates and significance levels for Model 2.

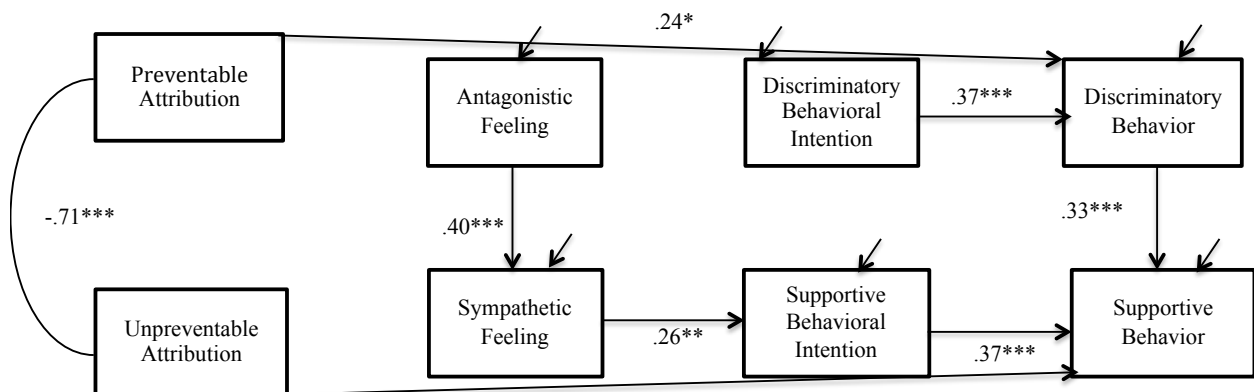


Figure 13. Experiment 2—path model diagram of the relationships between preventability attribution, emotions, behavior intentions, and behaviors (Model 2). The model displays standardized beta weights and correlation coefficients; *** $p < .001$; ** $p < .01$; * $p < .05$.

Hypothesis 5c-d and 6c-d. In Experiment 2, the observed relationships in Model 2 provided new information about the direct and indirect effects of preventability attributions of ASD emphasized in news stories. As in Experiment 1, H5c-d and H6c-d results are addressed first. These results are followed by discussion of the results from H3a1-2, H3b1-2, and H3c1-2.

The path analyses in Experiment 2 did not support H5c-d. In terms of H5c, antagonistic feeling appeared to have no mediation effects on discriminatory behavioral intention or discriminatory behavior. Rather, antagonistic feeling lead to an increased sympathetic feeling ($r = .40, p < .001$), and discriminatory behavioral intention lead to an increase in discriminatory behavior ($r = .37, p < .001$). For H5c, sympathetic feeling did not mediate the relationship between unpreventable attribution and supportive behavioral intention, but emotion did elicit a direct positive influence on supportive behavioral intention ($r = .26, p < .01$), and an indirect positive influence on supportive behavior ($r = .10, p < .01$).

The results failed to support H6c-d as well. For H6c, discriminatory behavioral intention did not mediate the relationship between preventable attribution and discriminatory behavioral; discriminatory behavioral intention's direct effect on discriminatory behavior ($r = .37, p < .001$) also positively influenced supportive behavior ($r = .33, p < .001$). For H6d, supportive behavioral intention did not mediate the relationship between unpreventable attribution and supportive behavior, but supportive behavioral intention did mediate the relationship between sympathetic feeling and supportive behavior ($r = .10, p < .01$).

Revisiting H3a-c. Phase 2 tested H3a1-2, H3b1-2, and H3c1-2; the results of the path analysis were almost directly inline with the univariate tests—however univariate tests failed to identify certain aspects of the relationships. While the path analysis failed to support H3a1-2 and H3b1-2, similar to Phase 1 analyses, it completely supported H3c1-2. Results revealed

preventable attribution had a direct positive influence on discriminatory behavioral intention ($r = .24, p < .05$), and unpreventable attribution had a direct positive influence on supportive behavioral intention ($r = .16, p < .05$). The univariate tests in Phase 1 only detected the relationship between unpreventable attribution and supportive behavior.

Table 25 reports the R^2 values indicating the fit for each separate regression equation. In particular this analysis explained almost 15% of the variance in discriminatory behavior, and over 15% of the variance in supportive behavior. Implications for these key findings are discussed.

Table 25

| <i>Prediction Equations and Corresponding R^2 Values for Experiment 2</i> | | |
|--|-----------------------------------|-------------------------|
| | <i>Prediction Equation</i> | <i>R^2</i> |
| Preventable Attribution (X_1) | --- | |
| Unpreventable Attribution (X_2) | --- | |
| Antagonistic Feeling (Y_1) | $Y_1 = \zeta_1$ | .01 |
| Sympathetic Feeling (Y_2) | $Y_2 = .40X_1 + \zeta_2$ | .01 |
| Discriminatory Behav. Int. (Y_3) | $Y_3 = \zeta_3$ | .06 |
| Supportive Behav. Int. (Y_4) | $Y_4 = .26X_2 + \zeta_4$ | .08 |
| Discriminatory Behav. (Y_5) | $Y_5 = .37X_3 + \zeta_5$ | .14 |
| Supportive Behav. (Y_6) | $Y_6 = .37Y_4 + .33Y_5 + \zeta_6$ | .16 |

Experiment 3

Experiment 3 investigated the effects of stability attributions on community members' emotions, behavioral intentions, and behaviors. To test the proposed theoretical model for this experiment (Figure 3), a correlation matrix was created (see Table 26).

Table 26

Pearson Correlation Matrix of Variables for Experiment 3 (N = 100)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|-------------------------------|--------|--------|--------|-------|-------|-------|-----|---|
| 1. Stable | 1 | | | | | | | |
| 2. Unstable | -.91** | 1 | | | | | | |
| 3. Hopeless Feeling | .31** | -.22** | 1 | | | | | |
| 4. Hopeful Feeling | -.30** | .28** | -.35** | 1 | | | | |
| 5. Discriminatory Behav. Int. | -.11 | .12 | .25* | -.05 | 1 | | | |
| 6. Supportive Behav. Int. | -.08 | .04 | -.07 | .56** | -.17 | 1 | | |
| 7. Discriminatory Behavior | .03 | -.02 | .17 | .02 | .46** | .03 | 1 | |
| 8. Supportive Behavior | -.21* | .22* | -.10 | .45** | -.13 | .53** | .17 | 1 |

Note. ** $p < .01$; * $p < .05$

The proposed theoretical model for Experiment 3 was tested using maximum likelihood estimation (Schumacker & Lomax, 2010). This initial model was identified, recursive, and converged in nine iterations, but needed to be re-specified because it revealed a poor fit for the data ($\chi^2 [15, N = 100] = 58.15, p < .001$; RMSEA = .17 SRMR = .06; NFI = .84; CFI = .87; AIC = 100.15). The modification index (MI) and standardized residual covariance (SRC) were used to guide model modification. The modification indices indicated a strong relationship between stable attribution and the error term for discriminatory behavioral intention (MI = 20.70) and between stable attribution and the error term for discriminatory behavior (MI = 7.15). These modifications would reduce the chi-square value and improve the overall fit; at this point the modification indices did not indicate any clear paths that could be added to provide a better fit for the model. Schumacker and Lomax (2010) endorsed the step-by-step modification approach for model specification. Therefore the empirical modification clues were crosschecked with the SRC to confirm their addition into the model. Theoretical justification for these modifications is provided in the discussion.

The proposed model for Experiment 2 was re-specified to include the additional pathways (Model 2). This model was also identified, recursive, and converged in nine iterations;

however the model was still an inadequate fit for the data ($\chi^2 [15, N = 100] = 36.10, p < .01$; RMSEA = .12; SRMR = .08; NFI = .90; CFI = .94; AIC = 78.10). Model 2 modification indices suggested adding paths from hopelessness to hopefulness (MI = 8.86) and supportive behavior to discriminatory behavior (MI = 9.40). Therefore, Model 2 was re-specified to include the additional pathways (Model 3). This model was identified, recursive, and converged in nine iterations. The analysis revealed Model 3 as a good fit for the data ($\chi^2 [13, N = 100] = 15.58, p < .27$; RMSEA = .04; SRMR = .06; NFI = .96; CFI = .99; AIC = 61.58). Figure 14 displays a diagram of the standardized parameter estimates and significance levels for Model 3.

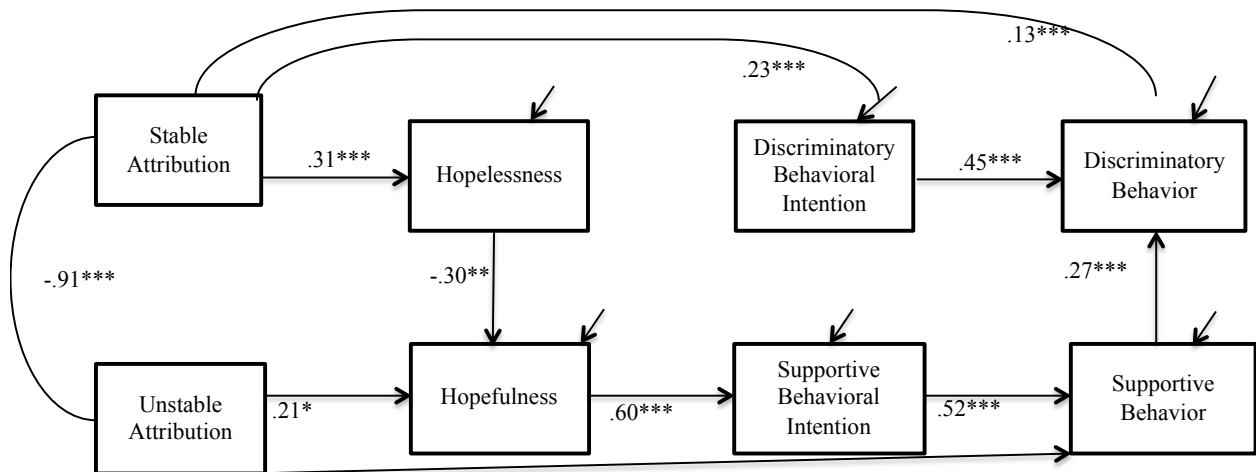


Figure 14. Experiment 3—path model diagram of the relationships between stability attribution, emotions, behavior intentions, and behaviors (Model 3). The model displays standardized beta weights and correlation coefficients; *** $p < .001$; ** $p < .01$; * $p < .05$.

Hypotheses 5e-f and 6e-f. In Experiment 3, the observed relationships in Model 3 provide heightened insight about the direct and indirect effects of cause attributions of ASD emphasized in news stories. H5e-f and H6e-f results are addressed first, followed by the results of H4a1-2, H4b1-2, and H4c1-2, as compared to the results from Phase 1.

First, the path analysis in Experiment 3 partially supported H5. H5e was not supported; stable attribution was positively related to discriminatory behavior intention's error term ($r = .23, p < .001$), and indirectly negatively related to supportive behavioral intention ($r = .10, p < .01$). However H5f was fully supported in that unstable attribution had an indirect positive influence on supportive behavioral intention through feelings of hopefulness ($r = .13, p < .05$).

Second, the path analysis in Experiment 3 partially supported H6. H6e was partially supported; stable attribution was positively related to discriminatory behavior intention's error term ($r = .23, p < .001$), which enhanced discriminatory behavior ($r = .10, p < .001$). Additionally, H6f was partially supported in that unstable attribution had an indirect positive influence on supportive behavior through feelings of hopefulness and supportive behavioral intention ($r = .07, p < .05$).

Revisiting H4a-c. In Phase 2 the path analysis revealed partial support for H4a1-2, H4b1-2, and H4c1-2. In particular, H4a1-2 was fully supported, which aligned with Phase 1 results. First, stable attribution revealed a direct positive relationship on feeling of hopelessness ($r = .31, p < .001$), and unstable attribution revealed a direct positive relationship on feeling of hopefulness ($r = .21, p < .05$). Second, H4b1-2 was partially supported in that stable attribution indicated a direct positive relationship with discriminatory behavioral intention's error term ($r = .23, p < .001$); unstable attribution did not reveal a direct relationship with supportive behavioral intention though, only an indirect relationship as mentioned earlier ($r = .13, p < .05$). Finally, H4c1-2 was partially supported in that stable attribution positively influenced discriminatory behavior error term ($r = .13, p < .001$), and unstable attribution positively influenced supportive behavior ($r = .20, p < .05$).

Table 27 reports the R^2 values indicating the fit for each separate regression equation. In particular this analysis explained over 30% of the variance in discriminatory behavioral intention and supportive behavioral intention; almost 30% of the variance was explained in supportive behavior. Finally, 17% of the variance in feelings of hopefulness and 10% of the variance in feelings of hopelessness was explained. Implications for these key findings are discussed.

Table 27

| <i>Prediction Equations and Corresponding R^2 Values for Experiment 3</i> | | |
|--|--|-------------------------|
| | <i>Prediction Equation</i> | <i>R^2</i> |
| Stable Attribution (X_1) | --- | |
| Unstable Attribution (X_2) | --- | |
| Hopelessness Feeling (Y_1) | $Y_1 = .31Y_1 + \zeta_1$ | .10 |
| Hopefulness Feeling (Y_2) | $Y_2 = .21Y_2 - .30X_1 + \zeta_2$ | .17 |
| Discriminatory Behav. Int. (Y_3) | $Y_3 = .23Y_1 + \zeta_3$ | .33 |
| Supportive Behav. Int. (Y_4) | $Y_4 = .60X_2 + \zeta_4$ | .32 |
| Discriminatory Behav. (Y_5) | $Y_5 = .13Y_1 + .45X_3 + .27Y_6 + \zeta_5$ | .03 |
| Supportive Behav. (Y_6) | $Y_6 = .20Y_2 + .52X_4 + \zeta_6$ | .29 |

Study 2 Results Summary

The results of Study 2 revealed insightful patterns of influence across attributions, emotions, behavioral intentions, and behaviors. Experiment 1 focused on the effects of cause attributions emphasized in news media stories about ASD; Experiment 2 investigated the influence of preventability attributions portrayed in news media stories about ASD; Experiment 3 explore the impact of stability attributions represented in news media stories about ASD. The

results from Phase 1 and 2 supported each other, however the path analysis revealed additional findings the univariate analyses could not detect. The predictions guided by attribution theory were partially supported across H2-H6; result summaries for each of the three experiments are provided.

Experiment 1

In Experiment 1, univariate analyses revealed news stories that emphasized internal cause attribution appeared to elicit higher levels of antagonistic feeling than news stories that emphasized external cause attribution, and news stories that emphasized external cause attribution appeared to produce higher tendency toward supportive behaviors than news stories that emphasized internal cause attribution. However, considering a simultaneous estimation of all parameters, external cause attribution did not appear to have a direct influence on feeling, behavioral intention, or behavior, but did share a strong negative covariance with internal cause attribution. While cause attribution had a direct positive influence on discriminatory behavior in the path analysis, external cause attribution displayed an indirect negative influence.

Emotion did not mediate the relationship between cause attribution and behavioral intention, nor did behavioral intention mediate the relationship between cause attribution and actual behavior. Rather, findings revealed antagonistic feeling mediated the relationship between internal cause attribution and sympathetic feeling, which then led to an increase in supportive behavioral intention and supportive behavior. Regardless of the attribution the news story emphasized, people with discriminatory behavioral intentions tended to display a higher degree of discriminatory behavior and less supportive behavioral intention.

Experiment 2

In Experiment 2, univariate results suggested news stories that emphasized unpreventable attributions yield a higher level of supportive behavior than news stories that emphasized preventable attributions. While the univariate analyses did not detect any other significant relationships, the path analysis shed light on the presence of additional direct and indirect relationships. The path analysis detected the same relationship from unpreventable attribution to supportive behavior, and also revealed preventable attribution had a direct positive influence on discriminatory behavior.

Emotion did not appear to mediate the relationship between preventable attribution and behavioral intention, nor did behavioral intention mediate the relationship between preventable attribution and actual behavior. In fact, regardless of preventability attribution, people with antagonistic feeling felt an increased sympathetic feeling, which lead to supportive behavioral intention and supportive behavior. People who held a discriminatory behavioral intention were more likely to display discriminatory behavior, which interestingly led to increased supportive behavior.

Experiment 3

In Experiment 3, the univariate analyses revealed news stories that emphasize ASD as stable elicited a higher degree of hopelessness than news stories that emphasize ASD as an unstable condition. Alternatively, news stories that emphasize ASD as unstable yielded a higher degree of hopefulness than news stories that emphasized ASD as stable. News stories that emphasized ASD as stable also led to a higher degree of discriminatory behavior when compared with news stories that emphasize ASD as an unstable condition.

In Phase 2, the path analysis echoed the univariate analyses regarding the direct effects of stability attribution on emotion; stable attribution was positively related to hopelessness and unstable attribution was positively related to hopefulness. People who read the news story about ASD as a stable condition not only had an increased feeling of hopelessness, but a decreased feeling of hopefulness. The path analysis also indicated that while stable attribution enhanced discriminatory behavior, the true relationship was with its error term. Stable attribution also positively influenced discriminatory behavioral intention's error term, and then discriminatory behavioral intention positively enhanced discriminatory behavior. This complex relationship could not have been detected through the univariate analyses. The path analysis also revealed unstable attribution had a direct positive influence on supportive behavior, as well as an indirect positive influence through hopefulness and supportive behavioral intention. Finally, while unstable attribution indirectly enhanced supportive behavior, people's degree of supportive behavior also enhanced their degree of discriminatory behavior.

CHAPTER 9. DISCUSSION

News media has the ability to act as a vehicle that sends messages about how community members might perceive certain societal issues; while news media frames social issues in certain ways (Bailey, 2011; Broderick, 2010, 2011), community members may interpret these messages uniquely (Nelson et al., 1997). This project involved a dual examination of content and effects—the findings revealed knowledge about how news media portrays ASD as well as the effects of these portrayals on community members’ emotions, behavioral intentions, and behaviors. Within the two overarching goals, the results revealed news media does emphasize certain attributions of ASD more than others and embeds a notable degree of certain signaling “stigma” cues about ASD in news coverage; additionally, the presence of certain attributions of ASD in news media appears to influence community members’ feelings and actions in ways that partially aligned with attribution theory (Weiner, 1986). Chapter 9 provides discussions for Study 1, Study 2, and practical implications for the entire project.

Study 1 Discussion

The results revealed news media’s emphasis on certain attributions of ASD and the presence of signaling “stigma” cues were associated. Signaling “stigma” cues appeared more frequently in conjunction with stories that emphasized internal cause attribution, when compared to external cause attributions. Additionally, circulation and timeframe seemed to play a role in news media’s emphasis of certain attributions of ASD and the presence of signaling “stigma” cues. These key findings are discussed.

The Association between Attributions of ASD and Signaling “Stigma” Cues

Cause attributions of ASD and signaling “stigma” cues appeared to be associated. Study 1 revealed the presence of internal cause attributions in news media appeared in relation with a

significantly higher percentage of signaling “stigma” cues (i.e., labeling cue, social skill deficit cue, aberrant behavior cue, physical appearance cue) than news stories that portray external cause attributions. Previous literature suggested signaling “stigma” cues appear in news media in patterned ways (see Holton et al., 2014) and Weiner (1986, 1995, 2006) indicated internal cause attributions (when compared with external cause attributions) leads to negative feelings such as frustration, guilt, or blame. The current study builds upon these findings; negative or judgmental connotations within signaling “stigma” cues tend to appear in conjunction with internal cause attributions of ASD more frequently than external cause attributions. Journalists may not intentionally embed signaling “stigma” cues in news stories that discuss internal causes of ASD, but an examination of 16 years of news stories about ASD support attribution theory’s claim; internal cause attributions have inherent negative connotations (Weiner, 1986, 1995, 2006). Signaling “stigma” cues represent a negative connotation about someone or something (Corrigan, 2000; Holton et al., 2014). This study refined the underlying connection between the two.

Weiner (2010) explained attributions people settle on are a result of their faint thoughts about serious societal issues. News media serves an important agent in educating the public about social issues (Jarlenski & Barry, 2013). News media’s emphasis on certain cause attributions of ASD appears to align with the predictions of attribution theory in that internal causes are associated with negative connotations of the disability, when compared with external causes. Zucker and Weiner (1993) used attribution theory to discover people who believe poverty to be caused by internal (individualistic) reasons report a high degree of antagonism and blame toward people in poverty, whereas people who believed poverty to be caused by external circumstances have feelings of sympathy and pity for people in poverty. Dijker and Koomen

(2003) found attributions of self-caused mental illness were associated with negative connotations, but external cause factors elicited sympathetic associations with mental illness.

Previous research also revealed the bond between cause attributions and stigma. Attribution theory was used to illuminate stigmatizing attitudes toward AIDS (Graham et al., 1993; Weiner 1993a, 1993b; Zhang, Rivkin, & An, 2013), mental illness (Weiner, 1990), and disabilities (Clark & Artiles, 2000; Graham & Barker, 1990; Schwarzer & Weiner, 1991). The current study suggests cause attributions of ASD and signaling “stigma” cues that appear in news media are associated, but attributions of preventability and stability did not appear in a similar way.

No association was found between mention of the preventability of ASD and signaling “stigma” cues. This finding was surprising because a host of previous literature suggests events that were preventable led to negative and judgmental connotations, when compared to unpreventable events (Cobb & de Chabert, 2002; Graham et al., 2001; Greitemeyer & Weiner, 2006; Henry et al., 2004; Menec & Weiner, 2000; Weiner, 2005, 2006, 2010; Wickens et al., 2011; Zhang et al., 2013). It appears attributions of the preventability of ASD in news media coverage do not have a clear association like cause attributions and signaling “stigma” cues.

The presence of preventability attributions of ASD in news coverage was fairly sparse; over a sixteen-year span there were several years with no mention of preventability. Several sources suggest the preventability of ASD may be a sensitive societal topic because it suggests individuals with ASD either could have lived a different life (preventable) or there is no possibility to change the outcome (unpreventable). Curtis & Patel (2008) emphasized how ASD is a complicated condition and nutritional and environmental factors play major roles, but societal conversations about the preventability of the disability are a sensitive and at times a

controversial topic. The official parent's sourcebook on autism also highlighted discussion about the preventability of ASD as a sensitive issue (Parker & Parker, 2002). Whitehouse (2013) explained "this is an extraordinarily sensitive topic and the arguments on both sides of the debate are impassioned." News media may purposely avoid discussion of the preventability of ASD because of the contentiousness of the topic. While preventability attributions of ASD in news media displayed no association in the current study, stability revealed an association with two of the four signaling "stigma" cues.

News stories that highlight stability attribution appeared to be associated with two of the four signaling "stigma" cues—social skill deficit cues and aberrant behavior cues. This finding suggests stability is more so associated with the social and behavioral aspects of ASD in news media representations of the disability. Goffman's concept of discreditable stigma occurs when individuals are cued into thinking about another individual as "different" despite no observable difference (Corrigan, 2000; Goffman, 1963). While each the four signaling "stigma" cues are ways discreditable stigma may arise, references to the permanency or treatability of ASD appear to be most associated with social and behavioral issues.

News media coverage of the stability of ASD may emphasize social skill deficit cues and aberrant behavior cues, but not labeling cues or physical appearance cues, because of the history of the diagnosis. Since the term autism (original term) as a disability emerged in the 1940s, the diagnostic characteristics have shifted. Most notably, the DSM-V introduced a completely new classification system regarding the diagnosis, lumping all spectrum disorders together (APA, 2011). In the past autism was discussed separately from Rhett's Syndrome, Asperger's Syndrome, and others; each disability had its own distinct diagnostic criteria. Characteristics of autism (original term) were most notably known for social and behavioral abnormalities that

were more extreme than others on the spectrum. However in the previous classification system autism (original term) as a distinct disability ranged from high to low functioning; the range of social skills and behavioral abilities was highly variable. One possibility for the presence of social skill deficit cues and aberrant behavior cues in news media coverage about the permanency or treatability of ASD may be that these were the prominent characteristics discussed as diagnostic factors.

However not all individuals with ASD have extreme or even moderate social skill deficits, or engage in aberrant behavior. While many individuals with ASD do not display notable degrees of these attributes, others many only show small signs—to the extent that any person not diagnosed with ASD might exhibit (e.g., social awkwardness; unexpected anxiety attack; inability to communicate effectively). The current study illustrated news media coverage about the stability of the disability appeared to highlight the problematic and undesirable social skills and behaviors of ASD, suggesting all individuals with the disability exhibit challenging, awkward, and sometimes dangerous qualities. News media may highlight social skill deficits and aberrant behaviors when discussing the stability of the disability because it offers a good human-interest story to discuss whether individuals with ASD can be treated, or “made to be normal” again.

Stability attributions were not associated with labeling cues and physical appearance cues. This may be because labeling cues and physical appearance cues exhibit language that conveys judgments of one’s categorization (labeling cue) or look (physical appearance cue) (Corrigan, 2000; Holton et al., 2014). This is encouraging that news media’s discussion about the permanency or treatability of ASD is not discussed in conjunction with judgmental labels or

abnormalities in physical appearance, especially because diagnostic characteristics of ASD do not include any oddities in physical appearance (APA, 2011).

The current study revealed new knowledge about association between cause, preventability, and stability attributions of ASD and certain signaling “stigma” cues in news media coverage about the disability. The remainder of Study 1 investigated the role of circulation and time on the presence of attributions and signaling “stigma” cues of ASD in news media coverage. A discussion about the role of circulation is provided first, followed by the role of time.

The Role of Circulation

The circulation appeared to play a role in the presence of cause attributions; despite insignificant findings for preventability and stability attribution, certain interesting patterns emerged. Scholars have encouraged journalists and news organizations to work with regional and national news organizations to more effectively cover important societal issues in balanced ways (Belackova et al., 2001). In the context of ASD, with the causes of ASD being unknown, preventability unclear, and stability questionable, news media should strive to paint a balanced picture of the disability, rather than capitalizing on certain attributions over others.

External causes of ASD appeared more frequently in nationally circulating news stories, whereas internal causes were more frequently connected with regionally circulating stories. Reflecting back on earlier discussions, cause attribution also appeared to be associated with signaling “stigma” cues. This association followed in suit with the propositions of attribution theory; internal cause attribution, similar to signaling “stigma” cues, was associated with negative and judgmental connotations of ASD mentioned in news stories. Holton et al. (2014)

found certain signaling “stigma” cues were associated with episodic frames more than thematic frames. These connections inform the current finding.

The findings of this study suggest regionally circulating news media may emphasize a higher degree of stories about the internal cause of ASD, which may also possess a higher degree of signaling “stigma” cues, and nationally circulating news media may highlight a higher degree of stories emphasizing external causes of ASD, which may also include less signaling “stigma” cues. Arthur (2012) investigated the framing of child neglect in news media and found comparable results to this study. In the context of news media coverage of child neglect, most regional coverage used episodic framing that focused on individual circumstances, whereas national newspapers used more thematic framing that discussed long-term consequences and system-level issues (Arthur, 2012). While Arthur (2012) discussed circulation differences in episodic and thematic framing, these concepts help to explain the current results. Regional news coverage may emphasize personal stories regarding genetic causes of ASD, whereas national news coverage may represent the external causes of ASD that exist on the societal (or system) level. Circulation may play a role in the presence of cause attribution, but this does not seem to be the case with preventability and stability attributions.

The attributions of preventability and stability did not surface in conjunction with different levels of circulation, however interesting patterns were noted. News media stories emphasized ASD as preventable much more frequently than unpreventable, and unstable more frequently than stable, regardless of national or regional circulation. First, while preventability attributions appeared fairly infrequently, preventable attributions of ASD may appear more frequently than unpreventable attributions because it suggests there is a chance to diminish cases of the disability. This concept is highly controversial though: “Pre-implantation genetic

diagnosis/screening (PGD) is a technique that causes concern within certain parts of the autism community. Some autism advocates argue that PGD will eventually be used to select autism out of the gene pool” (Whitehouse, 2013, p. 1). News media’s scant coverage of preventability is understandable as the discussion of ASD being preventable brings conversations about eugenics, but discussion of ASD being unpreventable brings discussions about the neurodiversity movement and/or lost hope or shame associated with the disability (Autism Speaks, 2013).

Second, news media coverage of ASD appeared to emphasize ASD as an unstable condition more frequently than a stable condition. The reasoning behind this finding may be similar to the explanation for the emphasis on ASD being preventable, as opposed to unpreventable. News coverage that portrays ASD as unstable is associated with the possibility that people with the condition will improve or even be cured. The types of stories that offer hope for individuals with ASD, family members, and community members provide excellent human-interest pieces (Stovall, 2011). Human-interest stories that offer hope are good for readership, regardless of the circulation of a news media outlet (Stovall, 2011).

Circulation also appeared to have an impact on the presence of one of the signaling “stigma” cues—social skill deficit cue. Regionally circulating news stories tended to include social skill deficit cues more frequently than nationally circulating news stories. Holton and colleagues (2014) discovered social skill deficit cues were associated with episodic framing of news stories about ASD. Arthur (2012) revealed regionally circulating news stories tend to focus on the individual (episodic) cases about an important social issue. The current study illuminates previous knowledge by suggesting that social skill deficit cues not only appear more frequently in episodic stories (Holton et al., 2014), episodically framed stories frequently

distributed by regional news media outlets (Arthur, 2012) emphasize social skill deficit cues in tandem with ASD.

While no association was found between circulation and the other three signaling “stigma” cues, labeling cue and aberrant behavior cue appeared in nearly half of news media coverage, whereas minimal references to physical appearance cues were observed. Holton et al. (2014) also found a strong presence of labeling cues and aberrant behavior cues, with less of a presence of physical appearance cues. While three of the four signaling “stigma” cues did not reveal substantial relationships with circulation, their presence is noteworthy.

Circulation appeared to be a key factor in the presence of cause attributions and social skill deficit cues. The other attributions (preventability and stability) revealed interesting patterns of presence in news media coverage of ASD. The remaining three signaling “stigma” cues (i.e., labeling cue, aberrant behavior cue, physical appearance cue) shared no association with circulation. Another key factor in the presence of attributions and signaling “stigma” cues is time.

The Role of Time

The way societal issues are discussed can change over time (Kang, 2013; McKeever, 2012). ASD was launched into mainstream media with the Wakefield et al. (1998) study, which announced evidence of the connection between the MMR vaccine and ASD. This finding upset the belief that ASD was a biomedical or neurological disorder. The Wakefield et al. (1998) study was eventually retracted for ethical reasons (see Whalen, 2010), but since the late 90s the way ASD has been represented in news media has changed. This project revealed shifts in the presence of cause, preventability, and stability attributions, as well as signaling “stigma” cues. These changes over time are discussed respectively.

The results of Study 1 illustrate the emphasis on ASD being caused by internal factors has gradually decreased over the past 16 years, but the presence of external factors has wavered over time. A reason for the decrease in internal cause attributions of ASD may have begun with the Wakefield et al. (1998) study's suggested link between the MMR vaccination and the development of ASD. This finding sparked alarm among parents in the U.S. and the U.K. (Clarke, 2008, 2010) and may have served as a catalyst to turn societal conversation from the biomedical and neurological causes of ASD toward environmental causes.

While news media coverage of ASD may have decreased references to internal (genetic) causes of ASD, coverage still exists. Landigran (2010) argued families contain autistic traits that are passed down genetically. Another recent project revealed people continue to buy into the belief that ASD is caused by genetics. The World Autism Views Project (2011a) found 47% of people believe ASD is caused by genetics, and North Americans (along with people from Australia and Europe) predominantly support this belief. However, one third of people believe ASD is caused by exposure to toxic substances (World Autism Views Project, 2011a). News media's turbulent emphasis on the external causes of ASD, combined with a gradual decline in internal causes may have contributed to these mixed perceptions about the disability.

The presence of preventability attributions emphasized in news stories has not changed significantly over time. Despite the insignificant overall trend, the presence of news stories about ASD being preventable peaked in 1999 just after the Wakefield et al. (1998) study became public. Reference to ASD being unpreventable peaked in 2010; interestingly, in 2010 the presence of internal cause attributions started to rise again, after being at an all time low in 2009. It is possible that the reemergence of ASD being caused by genetics was paired with an increase in discussion that the disability was unpreventable. However in 2011, the presence of

preventable attributions of ASD increased, and no trace of unpreventable attributions was found. As mentioned earlier in the discussion, the preventability of ASD may be a controversial topic that news media may generally choose to avoid. After all, the peak of preventable attribution about ASD in news media coverage was 11.1% (in 1999) and the peak of unpreventable attribution was 10.5% (in 2010); these percentages are fairly miniscule.

The presence of unstable attributions has decreased over time, whereas stable attributions have not changed significantly over time. In general unstable attributions have appeared much more frequently in news media coverage of ASD than stable attributions. Some medical sources continue to emphasize there is no cure for ASD and no effective treatment plan for all individuals with ASD (Mayo Clinic, 2013). Familial sources claim they have never met a recovered child and emphasize recovery is not possible (McGovern, 2013). Yet news media rarely reference the stable and long-term nature of ASD. It is possible news media may avoid stories that discuss ASD in this way because it does not lend itself to a good human-interest piece (Stovall, 2011). While medical facilities and families may discuss the permanent nature of ASD, news media may not see this angle of the disability as newsworthy.

News coverage of ASD as an unstable condition has appeared relatively frequently over the past 16 years, and noticeably tapered off in 2012 and 2013. Emphasis on ASD as a treatable and even curable condition may have occurred because as society became more interested in the disability, new tactics to try and “fix” people with the condition emerged. Larry King Live’s interview with Jenny McCarthy highlighted how her son was completely cured of his diagnosis through diet and behavioral therapy (LKL, 2009). The peak of news media coverage about ASD as unstable occurred in 2003 when societal discourse about the need for a national autism organization began. Two years later Autism Speaks was founded. Suzanne and Bob Wright, co-

founders of Autism Speaks, explained “Our organization continues to fund research into the causes, prevention, treatments and a cure for autism; we are committed to increasing awareness of autism spectrum disorders; and we will advocate for the needs of individuals with autism and their families” (Founders’ Message, 2013). This non-profit organization received responses from ASD individuals. One ASD individual responded in a comment directly to the Founders’ Message:

Please explain to me why I should not want to be the way I am. Please explain to me exactly why you think it is acceptable to give people the message that the way they are made is insufficient. And, more specifically, please explain to me where you think the child my mother gave birth to actually went? I’m sincerely interested in what you think.

Yours, An Equal

This comment post illustrates how one ASD individual felt about the societal messages that are surfacing regarding the disability. A parent of an ASD individual also responded to the Founders’ Message (2013) with a similar undertone:

In reference to your comment “This disorder has taken our children away. It’s time to get them back,” I can assure you my son has not gone anywhere, I am also very concerned that an organization such as yours is not committed to promoting an understanding of autism as opposed to your incessant need to ‘find a cure.’ I can assure you that my son is very perfect at being him, he needs no cure and he doesn’t need fixing, what he does need is people and organizations such as yours promoting understanding and acceptance...We need organizations to help parents and caregivers to understand their children and appreciate them for what they are.

Yours Sincerely, A Disgruntled Mum

Autism Speaks may have served as a catalyst in launching conversations about the treatments and cures of ASD into mainstream media. While this movement received a substantial amount of criticism and concern from ASD individuals and their family members, it offered an interesting story for news media. It is possible that the messages this organization emphasized about the unstable nature of ASD was picked up by news media. The gradual decline in news media's emphasis on the unstable nature of ASD may be related to the neurodiversity movement, which strives to provide a voice for ASD individuals and appreciate individuality and unique ability (Chamak, 2008; Ortega, Elipe, Mora-Merchán, Calmaestra, & Vega, 2009). Most recently, both stable and unstable attributions of ASD were relatively limited. Given the trajectory of news media coverage regarding unstable attributions of ASD over the past 16 years, it is probable these will continue to taper off and stable attributions will continue to waver in their presence in news media coverage of the disability.

This project also shed light on the presence of social "stigma" cues in news media coverage over the past 16 year. The presence of labeling cue, social skill deficit cue, and aberrant behavior cue has diminished over time, while the presence of physical appearance cue revealed no significant change; rather these cues have remained low. In regard to physical appearance cue, the diagnostic criteria of the DSM-V explain ASD is not directly associated with abnormal or distinguishable physical attributes (APA, 2011). News media's limited inclusion of physical appearance cues is encouraging, but the small amount of references that have appeared in news media provide reason for a closer consideration of how journalists are discussing the disability.

Despite the uplifting findings regarding the significant decrease in labeling cues, social skill deficit cues, and aberrant behavior cues, it is important to acknowledge that these cues still

appeared in approximately 21-36% of news media coverage about ASD in 2013. This decline in the presence of these signaling “stigma” cues in news media coverage of ASD is a positive finding, but it does not end here. About two thirds of news stories about ASD still discuss the disability in tandem with negative and judgmental labels, describe prominent social skill limitations of ASD individuals, and highlight anomalous behavioral tendencies. The presence of these cues illustrates journalists and the news organizations they work for still have work to do in order to offer a fair and balanced representation of the disability. Further, whether news media is a product of societal understanding of the disability, or the factor that helps to socially construct people’s understanding about ASD, developing a standard for accurate representations should be the goal.

Summary

News media coverage represents ASD in a variety of ways. Key associations identified in this study suggest the media industry should be aware of intricate language choices when discussing ASD and societal issues surrounding the disability. The presence of certain attributions and signaling “stigma” cues do vary as a function of circulation, but it is also important to note that the general presence of certain attributions (i.e., preventable, unstable) appear more frequently than their counterparts (i.e., unpreventable, stable). Finally, the presence of certain attributions has risen over time, whereas others have tapered off. The current project’s thorough investigation of news media representations of ASD yielded meaningful findings that provide knowledge for scholars and practitioners uniquely. The findings of Study 2 are discussed next, followed by practical implications of the project.

Study 2 Discussion

Attribution theory is traditionally an interpersonal theory of motivation (Weiner, 1986, 1995, 2006). However, Weiner (2010) emphasized attribution theory is applicable to a variety of contexts, including news media. News media offers a convenient place for people to develop attributions based on how stories about ASD are framed; attributions people settle on are a result of their fleeting judgments about important social issues (Weiner, 2010). The findings from Study 2 shed light on the direct and indirect effects of attributions of ASD emphasized in news media stories on community members' feelings, behavioral intentions, and actions. Phase 1 revealed the direct effects; the results of Phase 2 emulated Phase 1 and extended these findings by revealing indirect effects. The following sections reflect on how the current study's results partially support attribution theory in Experiments 1, 2, and 3, respectively.

Experiment 1

Cause attributions represent people's perceived reasons for the source of an outcome or event (Weiner, 1986). Based on attribution theory, the current study posited internal cause attributions of ASD in a news media story would elicit antagonistic feelings, discriminatory behavioral intentions, and discriminatory behaviors, whereas external cause attributions would enhance sympathetic feelings, supportive behavioral intentions, and supportive behaviors. These findings were partially supported. Two significant relationships emerged in the univariate analyses that align with attribution theory.

The news story that emphasized internal cause attribution appeared to elicit a higher degree of antagonistic feeling than external cause attribution. This represents a well-established pattern described by attribution theory. Previous research indicates perceptions of internal cause attribution were related to negative connotations of academic performance (Burger et al., 1982;

Clark, 1997; Cooper & Burger, 1980; Frieze & Snyder, 1980; Struthers et al., 1998; Weiner, 1990, 1994). In regard to social obligations, bad excuses caused by internal (controllable) factors led to higher degrees of antagonism, when compared to good excuses caused by external (uncontrollable) factors (Weiner et al., 1987). Zucker & Weiner (1993) identified people who believe poverty to be caused by internal or individualistic reasons reported a high degree of antagonism and blame toward people in poverty, when compared to external or system level reasons. Internal cause attributions about ASD portrayed in news media appear to have a similar negative effect on community members.

The story that emphasized external cause attribution appeared to elicit a higher tendency toward supportive behaviors, when compared to the story that emphasized internal cause attribution. This finding is inline with attribution theory (Weiner, 1986, 1995, 2006, 2010). In the context of news media, previous research demonstrates similar findings. Edy and Meirick (2007) measured the impact of naturally occurring frames on public support for a policy and found an emphasis on external causes of events elicited a high degree of public support, when compared with an emphasis on internal cause. Wise and Brewer (2010) investigated the trans fat ban in New York City and found community members supported the ban if it was discussed as being in the best interest of personal health and societal goals (external), when compared to the ban being framed in terms of restaurant/business goals. Attribution theory offers a clear framework to understand how framing a health outcome in a certain way can determine the level of community members' support.

The remaining predictions for Experiment 1 were not supported in the univariate analyses. This finding was surprising given the vast amount of attribution research. Weiner (1986) discussed the historical nature of attribution theory, arguing the causal pattern between

attributions and subsequent emotions, behavioral intentions, and behaviors existed. Decades of research have built upon the idea that attributions influenced emotions, behavioral intentions, and behaviors, and mediating relationships exist within this model (Weiner, 2010). While clear patterns regarding cause attribution exist in the literature, the absence of some of these relationships may be meaningful in the context of news media portrayals of ASD. The univariate results suggest internal cause attribution had no impact on discriminatory behavioral intention or discriminatory behavior, and external cause attribution played no role on sympathetic feeling or supportive behavioral intention. Phase 2 of Experiment 1 provides a closer look at the inter-relationships among cause attributions, emotions, behavioral intentions, and behaviors.

The path analysis revealed similar results to the univariate analyses, but also shed light on the holistic nature of the cause attribution model in the context of news media coverage of ASD. First, findings garnered from the path analysis revealed emotions did not mediate the relationship between attributions and behavioral intentions, and behavioral intentions did not mediate the relationship between attributions and behaviors. This is contrary to traditional attribution literature (Weiner, 1986, 1995, 2006, 2010). However in the context of news media coverage of ASD, it is possible attributions, emotions, behavioral intentions, and behaviors operate in distinct ways. While the results of this path analysis failed to support these predictions, meaningful relationships were observed.

Most notably, in Phase 2 internal cause attribution appeared to enhance both antagonistic feeling and discriminatory behavior, whereas external cause attribution only shared a negative covariance with internal cause attribution. This finding varied slightly from the results of Phase 1, but garnered similar relationships. The negative covariance between external cause attribution and internal cause attribution illustrated external cause attribution indirectly diminished

antagonistic feeling and discriminatory behavior. In a holistic sense, this finding suggests news media coverage of ASD that emphasizes internal cause attributions may be the most detrimental in terms of societal reactions to the disability. This may stem back to the long-standing discussion about ASD as a condition caused by brain disease (Deacon, 2013; Laidler, 2004).

Underlying connotations of brain disease are typically negative and people with such conditions were often placed in mental institutions (Kramer, 1980). While more recent societal conversations that emphasize internal cause attribution have turned toward the belief that ASD is a biologically inherited neurological (genetic) disorder (Itkonen & Ream, 2013), it is possible that people still partially associate the disability with internal “flaws” of the brain and thus support efforts to limit ASD individuals’ basic rights of housing, employment, marriage, and family. Societal discussions about ASD as a neurological disorder triggered by environmental effects (Itkonen & Ream, 2013) emerged after the Wakefield et al. (1998) study, making it a fairly recent angle on the cause of ASD. Additionally, there was much debate surrounding the emergence of arguments regarding the external causes of ASD (Itkonen & Ream, 2013; Kapp et al., 2013), making the existence of the disability fairly confusing.

While Phase 1 suggested external cause attribution would enhance supportive behaviors, Phase 2 illustrated a more complete picture regarding community members’ feelings, intentions, and actions. Community members who buy into the belief that ASD is caused by genetics and internal factors have negative feelings about the condition and support efforts to limit their rights. Conversely community members who invest in the belief that ASD is caused by external factors are less likely to have antagonistic feelings or engage in discriminatory behaviors because of their opposition to the belief that ASD is caused by internal factors; interestingly, these people are also unmotivated to provide sympathy or support.

The results of Experiment 1 also illustrated antagonistic feeling mediated the relationship between internal cause attribution and sympathetic feeling, which then led to an increased supportive behavioral intention and supportive behavior. While people who buy into the belief that ASD is caused by external factors are not motivated to provide sympathy or support, those who relate to the idea that the disability is caused by internal factors are; however this is only if they first feel antagonistic. Therefore, community members who assume ASD is caused by internal factors encounter multiple routes or paths of emotion and action. Those who have an initial negative feeling toward the disability then feel sympathy and show support, whereas those who generally have no feeling toward the disability appear to then react in discriminatory ways.

The results of Experiment 1 also illustrated people who have a discriminatory behavioral intention toward ASD will follow through with those intentions by being less supportive, regardless of their cause attributions or feelings about the disability. Research indicates when people hold discriminatory behavioral intentions for various reasons they are likely to act on those intentions and engage in discriminatory behaviors (Asbrock, Christ, & Wagner, 2007; Wagner, Christ, & Pettigrew, 2008). People's reasons for having discriminatory intentions may or may not be influenced by their belief in attributions that are portrayed in news media. The results of the current study suggest some community members have discriminatory intentions toward ASD regardless their attributions about the cause of the disability or their feelings.

Experiment 1 summary. Cause attributions about ASD in news media partially supported attribution theory. While decades of attribution theory research suggest clear relationships between cause attributions, emotions, behavioral intentions, and behaviors (see Weiner, 1986, 1995, 2006), the current study suggests cause attributions about ASD emphasized in news media elicit complex relationships that deviate from the theory. Findings suggest cause

attributions emphasized in news media do play a role directly and indirectly in community members' emotions, behavioral intentions, and behaviors, but not in the expected way. Similar to Experiment 1, Experiment 2 revealed partial support for attribution theory.

Experiment 2

Preventability attributions involve people's perception regarding whether or not something could have been done to change the outcome of an event (Weiner, 1986). Based on attribution theory, the current study posited preventable attributions of ASD portrayed in a news media story would elicit antagonistic feelings, discriminatory behavioral intentions, actual behaviors, whereas unpreventable attributions would enhance sympathetic feelings, supportive behavioral intentions, and actual behaviors. These findings were partially supported. One key relationship emerged in the univariate analyses.

The news story that emphasized unpreventable attributions appeared to yield a higher level of supportive behavior than the news story that emphasized preventable attributions. This finding aligns with attribution theory (Corrigan, 2000; Dagnan Trower, & Smith, 1998; McGuinness & Dagnan, 2001; Menec & Perry, 1998; Schwarzer & Weiner, 1988; Stanley & Standen, 2000; Weiner 1995, 2006, 2010). While unpreventable attributions about ASD emphasized in news media appeared to enhance community members' supportive behaviors, this was not the case for the remaining relationships in the preventability attribution model.

The remaining predictions for Experiment 2 were not supported in the univariate analyses. While this finding fails to confirm attribution theory, it may be explained by the limited presence of preventability attributions in news media. Study 1 found the presence of preventable and unpreventable attributions in news media were fairly limited. Weiner (1986) discussed how attribution theory separated Rotter's concept of locus of control into two

dimensions of cause and control (preventability). Yet discussion regarding the preventability of ASD, when the cause is still unclear, may be a controversial topic in news media. When news media does make reference to the preventability of ASD, community members may not be sure how to respond in terms of feelings, intentions, and actions.

Holton and colleagues (2012) explained when news media highlighted the preventability of ASD blame was inherently assumed, which could play a vital role in shaping public behavior. In Holton et al.'s (2012) study attributions of preventability became particularly problematic as blame was placed on the government, health care providers, the educational system, environmental toxins, individuals with ASD, their family members, and even Andrew Wakefield. While news media typically embraces conflict because of its sensationalistic quality, this type of conflict invites a host of negative repercussions that may be intentionally avoided through minimal mentions of the preventability of ASD. This could be a result of lessons from the past.

According to findings from Study 1, after the emergence of the Wakefield et al. (1998) study news media portrayals of ASD as a preventable condition hit an all-time high in 1999—appearing in over 11% of news stories. This finding from Study 1 is reinforced by Clarke's (2008, 2010) findings. However, messages news media did emphasize regarding the preventability of ASD left people fearful to vaccinate their children; this resulted in a gradual decrease in national rates of MMR vaccinations in the U.S. and U.K. (Lewis & Speers, 2003). Unfortunately, both countries have also reported increased cases of measles and mumps since then (CDC, 2013; Godlee, Smith & Marcovitch, 2011). According to the results from Study 1, it is possible that in order to combat the concern for the MMR vaccine, news media's emphasis on ASD being unpreventable spiked in 2010. Regardless of trends in news media, the univariate

analyses yielded minimal findings regarding preventability attribution; however the multivariate analysis shed light on the complexity surrounding preventability attributions, feelings, intentions, and actual behaviors.

Similar to Experiment 1, the path analysis revealed emotions did not mediate the relationship between attributions and behavioral intentions. Additionally, behavioral intentions did not mediate the relationship between attributions and behaviors. While the results of the multivariate analysis failed to support these predictions, meaningful relationships were observed.

The path analysis reaffirmed the relationship detected in the univariate analysis from unpreventable attribution to supportive behavior; it also revealed a direct relationship from preventable attribution to discriminatory behavior. Unpreventable and preventable attributions shared a strong negative covariance, indicating that while unpreventable attributions indirectly decrease discriminatory behavior, preventable attributions indirectly decrease supportive behavior. Previous research supports these patterns of influence between preventability attributions and behaviors (Graham et al., 2001; Greitemeyer & Weiner, 2006; Henry et al., 2004; Weiner, 2005, 2006, 2010; Wickens et al., 2011; Zhang et al., 2013). The multivariate analysis sheds light on the holistic nature of these relationships, complimenting findings detected by the univariate analyses.

Beyond the relationships between attribution and actual behavior, Experiment 2 revealed surprising results that suggest news media portrayals of ASD do not directly play a role in community members' feelings or behavioral intentions. While attributions did not play a role in community members' antagonistic feelings toward ASD, antagonistic feelings had a direct positive influence on sympathetic feelings, which then led to an increase in supportive behavioral intentions and supportive behaviors. This pattern was emulated in Experiment 1, except in

Experiment 2 community members' emotions were the driving force, not attributions. This pattern of relationships may have emerged because community members may have antagonistic feelings toward ASD despite news media portrayals of the disability. Interestingly people who felt antagonistic about ASD inescapably felt sympathy, which then set them on the path toward support for ASD. One explanation may be social desirability bias; community members may have admitted to having antagonistic feelings toward ASD but then counterbalanced those responses with sympathetic and supportive behavioral intentions and behaviors.

Additionally, regardless of the cause attribution a news story portrays, people with discriminatory behavioral intentions demonstrated a higher degree of discriminatory behaviors, which then enhanced supportive behaviors. This result is similar to Experiment 1 in that discriminatory behavioral intentions influenced behaviors; however the positive influence of discriminatory behaviors on supportive behaviors is counter intuitive and distinct from the patterns observed in Experiment 1. Again, social desirability bias may have played a role in this finding. However, as the results suggest, the relationship between discriminatory behavior and supportive behavior is directional; community members may truly have intentions to engage in discriminatory behaviors toward ASD but then also offer support.

This may be evidence of a societal level misunderstanding of what discriminatory behaviors actually are. Previous research has investigated this concept of unintentional discrimination. Thomas and Russo (1995) examined issues and implications of special education law in the 1990s, arguing people with disabilities were deprived of equal rights. The book discussed the legal responsibilities of schools in relation to students with disabilities (Thomas & Russo, 1995). The authors suggest Americans have forgotten about the meaning behind the Declaration of Independence, which guarantees Americans the right to life, liberty, and the

pursuit of happiness; this document does not limit these rights to “normal” people, whatever that might be (Thomas & Russo, 1995). Connotations of ASD appear to cloud community members’ perception about the abilities of those with the disability.

Experiment 2 summary. News media’s emphasis on preventability attributions of ASD partially supports attribution theory (Weiner 1986, 1995, 2006, 2010). The findings revealed finite differences from the proposed preventability attribution model; both univariate and multivariate analyses suggested news media portrayals of ASD appear to influence behavior, but bypass emotion and intention. The results for Experiment 3 revealed partial support for attribution theory, aligning more closely with the theoretical predictions than the previous two experiments.

Experiment 3

Stability attributions center on people’s perception of whether or not an outcome or event is permanent or can be remedied (Weiner, 1986). Drawing from attribution theory, the current study postulated stable attributions of ASD in a news media story would bring about antagonistic feelings, discriminatory behavioral intentions, actual behaviors, whereas unstable attributions may stimulate sympathetic feelings, supportive behavioral intentions, and actual behaviors. These findings were partially supported, yielding interesting relationships between stability attributions, emotions, behavioral intentions, and behaviors. In particular, the univariate analyses yielded three key associations.

The news story that emphasized ASD as a stable condition elicited a higher degree of hopelessness than the story that emphasized ASD as an unstable condition. Additionally, the story that emphasized ASD as unstable yielded a higher degree of hopefulness than the news story that emphasized ASD as stable. This supports the assumptions of attribution theory

(Weiner, 1995, 2006, 2010). When people feel like something can be done about an outcome or event, human instinct draws on hope, but when people are told no change is possible they become complacent about the current state (Hyman & Levy, 2005; Lackaye & Margalit, 2008). Results of the current study demonstrate news media coverage about the stability of ASD pulls at the heartstrings of community members in both hopeless and hopeful ways.

An emphasis of ASD as stable also led to a higher degree of discriminatory behavior when compared to an emphasis on the unstable nature of ASD. This finding also supported attribution theory's projections (Weiner, 1995, 2006, 2010). Community members who buy into the belief that nothing can be done to "improve" the condition of ASD appear to be more likely to engage in discriminatory actions. While this finding is upsetting because it indicates reference to the permanency of ASD causes discriminatory behavior, community members likely do not think of their actions as discriminatory (see Thomas & Russo, 1995).

The results for Experiment 3 did not supported the remaining predictions in terms of univariate analyses. Similar to Experiments 1 and 2, attributions appear to have no direct influence on behavioral intentions. Additionally, while the univariate analyses revealed a relationship between stable attribution and discriminatory behavior, unstable attribution did not share a relationship with supportive behavior. A more holistic examination of the stability attribution, feeling, intention, and action model revealed similar findings, but shed light on more complex connections.

Experiment 3 partially supported the hypothesized mediating relationships. Feelings of hopefulness mediated the relationship between unstable attribution and supportive behavioral intention. This finding was supported by previous research (Caprara et al., 1997; Corrigan 2000, 2002; Roesch & Weiner, 2001; Schwarzer & Weiner, 1991; Struthers et al., 1998; Weiner 1986,

1995, 2005, 2010), yet feelings of hopelessness did not mediate the relationship between stable attribution and discriminatory behavioral intention. Instead, hopelessness led to a decreased feeling in sympathetic behavior, but indirectly led back to discriminatory behavior. Beyond the proposed hypotheses the path analysis yielded insightful direct and indirect connections.

The path analysis findings generally endorsed the results from the univariate analysis. Unstable attribution led to increased feelings of hopefulness, and stable attribution revealed a positive influence on hopelessness. However, Phase 2 analysis revealed stable attribution actually enhanced both discriminatory behavioral intention and discriminatory behavior error terms. Despite the fact that the relationship is shared with these error terms, this aligns with the predictions of attribution theory (Caprara et al., 1997; Corrigan 2000, 2002; Roesch & Weiner, 2001; Schwarzer & Weiner, 1991; Struthers et al., 1998; Weiner 1986, 1995, 2005, 2010). The original theoretical model revealed a poor fit for the data; after recommended modifications the model that fit the data revealed stable attribution enhanced the statistical error of discriminatory behavioral intention and discriminatory behavior, which then influenced these variables. This finding is important because a positive influence on the error of a variable indirectly contributes to that variable (Schumacker & Lomax, 2010). Therefore, stable attribution indirectly enhanced discriminatory behavioral intention and behavior, and community members' discriminatory behavioral intentions also appeared to enhance their discriminatory behaviors toward ASD.

Additional interesting patterns of influence were detected in the path analysis beyond the proposed hypothesis. First, while stable attribution led to increased feeling of hopelessness, it also indirectly led to decreased feelings of hopefulness, supportive behavioral intentions, and supportive behaviors. A similar pattern was seen in Experiment 1, where internal cause attribution triggered antagonistic feelings, which then led to sympathy and support. In

Experiment 2, preventability appeared to play a minimal role in community members' feelings, yet the same pattern was observed; antagonistic feelings led to sympathy and support. While this relationship does not align with the predictions of attribution theory, it is noteworthy that three separate experiments detected the same pattern. Community members appeared to connect with the "negative" attributions (i.e., internal, preventable, stable), which led to antagonistic or hopeless feelings, but then triggered sympathetic feelings that generally lead to support.

The one exception for this pattern is witnessed in Experiment 3; people who show support for ASD are then enticed to discriminate against the disability. Previous research has witnessed this similar trend in the context of mental illness (Corrigan et al., 2003). An explanation for this may be that people are only willing to go so far for those who they think need help. Community members who buy into the belief that ASD is treatable or even curable are hopeful and provide support, whereas those who believe in the pervasive nature of ASD feel hopeless and tend to engage in discriminatory behaviors. Those community members who believe in the treatability of ASD and offer their support may actually be acting on good faith, but not believe their efforts will make a difference; therefore these community members may counterbalance their support and goodwill with discriminatory behaviors.

Experiment 3 summary. Stability attributions about ASD in news media partially supported the hypotheses derived from attribution theory. Experiment 3 yielded results that most closely aligned with the predictions of attribution theory, when compared to Experiments 1 and 2. The current study offers new knowledge about the content and effects of news media coverage of ASD, which inform practice. The following discusses practical implications of this research.

Practical Implications

Journalists and news media organizations would benefit from the results of this study. The improvement of journalistic standards regarding ethical news media representations of ASD may be a complex, but worthwhile process. This may mean a closer partnership or the formation of media relations with non-profit organizations, health and medical facilities, and governmental initiatives that play a role in the progress and decisions regarding ASD. Scholars have attempted to confront this battle through previous research (e.g., Bruyere, 2000; Goggin & Newell, 2003; Rüsçh, Angermeyer, & Corrigan; Thornicroft, Rose, Kassam, & Sartorius, 2007). While strides have been made, more needs to be done.

Beyond news media, it is equally important for this information to be made available to community members. People need to be aware of the content and effects of news media coverage of ASD because they could use this knowledge to advocate for fair and balanced representations of the disability. Community members could implement knowledge gained from these findings in several ways, depending on their role in society. People involved in educational, government, and health care positions could particularly draw from this information to improve the ethical treatment of news media coverage of ASD one step at a time. People should become more cognizant of their exposure to news media coverage of ASD and the potential effects of that exposure on their feelings and actions regarding the disability.

People in the educational system should take notice of these findings because teachers, aids, and administrators work closely to determine a student's potential. The past 16 years of media representations of ASD have allowed members of society to follow the complex trail of medical researchers and scholars. However, news media and research do not always portray the same messages (England-Kennedy, 2008; Kogan et al., 2008; Quinlan & Bates, 2009; Zhang &

Haller, 2013). Additionally, the diagnostic criteria for ASD have changed over the decades (APA, 2011). While school systems continue to move toward standardized testing and curriculum (Flanagan, 2009), ASD individuals should be given a personalized plan that allows them to emphasize their abilities and asks them how they visualize themselves, or what place they might hold in society (Helping Children with Autism, 2013).

At the very least educators should avoid reference to the condition of ASD as devastating, as previous research mentioned (Helps et al., 1999; Nissenbaum et al., 2002). Educators should consider ASD individuals' unique disability and focus on the development of individualized plans tailored to produce gradual steps toward of success. If the resources need to execute these plans exceed school system resources, administrators should be supportive in seeking alternative funding. These types of efforts should be publicized so other school districts might be encouraged to do the same.

Government employees play an integral role in the opportunities of individuals with ASD. These community members have a hand in the state and federal policies regarding ASD, as well as a voice in how ASD individuals are viewed as members of society. Kogan and colleagues (2008) describe the extreme lack of family support services and economic strain on families with ASD children. Families in this position may have to seek supplemental income to pay for health care and support (Kogan et al., 2008), which means less time to spend with their children. Community members that have a role in governmental decisions should consider the findings of this study when making decisions about the rights and opportunities of someone diagnosed with ASD. Government employees have the power to be an activist for ASD individuals' and can an advocate for systems and policies that could change ASD individuals' lives for better—or worse.

People in the health care industry often determine the fate of ASD individuals' diagnosis, which likely stays with them for life. For this reason, community members involved in the health care industry who have the opportunity to make decisions about ASD should be extremely well informed not only about the disability, but its history as well (Constantino et al., 2003; Lord, Rutter, & Couteur, 1994; Lord et al., 2000; Stone et al., 2003). Individuals in the health care field should reflect on how their perception of ASD has been influenced by news media coverage of the disability. The history of ASD and its diagnosis offers society with a broad perspective about the development and definition of ASD (Deacon, 2013; Grinker, 2007; Itkonen & Ream, 2013; Laidler, 2004). The determinations people in the health care industry make regarding the diagnosis should be based on the betterment of ASD individuals' life path.

People with ASD and their family members need support. They seek clear answers about the disability of ASD, along with the rest of society. In the mean time, news media's emphasis on the lack of those answers helps no one. ASD individuals have a unique knowledge and skillset to offer. They deserve to be given equal opportunities (Thomas & Russo, 1995). News media should ethically paint the picture of opportunity for those who the stories are about.

CHAPTER 10. LIMITATIONS AND FUTURE RESEARCH

Limitations of the current project present opportunities to further refine knowledge about the relationship between attributions of ASD and signaling “stigma” cues in news media, as well as the influence of attributions of ASD in news media stories on community members’ emotions, behavioral intentions, and behaviors. The limitations and future research for Study 1 are discussed first, followed by Study 2. The conclusion ties the two studies together in culmination of this dissertation.

Study 1 Limitations and Future Research

One limitation of Study 1 was that it focused solely on news media from the U.S. While this was a sampling decision, future research should investigate differences and/or similarities between U.S. news media portrayals of ASD and other countries (e.g., the U.K., nonwestern countries). This would be beneficial in understanding cultural differences in news media portrayals of ASD. Additionally, differences in media portrayals of the disability across various regions of the country could be cross-compared with educational, political, and health care decisions regarding the disability.

The low presence of preventability attributions and physical appearance cues could also be viewed as a limitation of Study 1. Attribution theory suggested cause, preventability, and stability as the three primary dimensions of attribution. However the results of the current study suggested news media’s emphasis on the preventability of ASD may not be an important factor; news media rarely emphasizes the disability in this way. Preventability of ASD did appear in more news media coverage during certain years—these spikes are important to note. Future research should investigate whether the increase in presence of ASD being portrayed as

preventable or unpreventable was associated with any policy decisions or changes in societal perception at the time.

Study 2 Limitations and Future Research

In regard to Study 2, a limitation of this research may have been the focus on community members with little knowledge of ASD or experience with ASD individuals. While this was a sampling decision, future research should investigate how news media's emphasis on certain attributions may affect ASD individuals and their family members. Future research could explore how the effects of attributions of ASD in news media may impact people with a high knowledge of ASD or frequent experience with ASD individuals in education, government, and health care; this concept should be explored over time, comparing a history of education, governmental policy decisions, and health care progress. It would also be beneficial to consider how changes in the presence of certain attributions, and signaling "stigma" cues, uniquely impacted ASD individuals and their family members' emotions, behavioral intentions, and behaviors over time.

While Study 2 focused on how news media, in particular newspapers, may play a powerful role in shaping societal perceptions of ASD, this is only one piece of the puzzle. Other sources of news media (e.g., television or radio), or social media (e.g., Facebook or Twitter) may also play an important role in the formation of societal perceptions of ASD. Future research should investigate the presence of attributions and signaling "stigma" cues in other media outlets. The different effects of attributions emphasized in various media outlets should be explored.

The sample in Study 2 was diverse in terms of age, education, income, and occupation. While this is quite representative of the varied array of community members, future research might consider investigating how demographic variations influence how community members

interpret news media representations of ASD. Psychographic differences could also be an important factor to consider. It is also important to note that Experiment 3 had a noticeably higher percentage of participants who reported being employed in the health care industry. While these participants reported a low knowledge of ASD and minimal experience with individuals with the disability, future research should explore whether individuals with different employment backgrounds, regardless of knowledge and experience with ASD, respond to news media portrayals of ASD in different ways.

The stimuli for Study 2 were created for the purpose of this research. Each news story was carefully crafted and presented in effort to emphasize a particular attribution of ASD; news stories resembled each other closely in length, writing style, and source. While this approach increased the internal validity of the research, and upheld external validity by modeling actual news stories about ASD closely and presenting them on a fake website that was supposed to be the Washington Times “Health & Science” section, future research should explore whether the use of actual news stories that emphasize particular attributions about ASD may elicit similar results.

Study 2 obtained only a moderately acceptable level of reliability for sympathy in Experiment 2. As this reliability was acceptable, but not ideal, the results of the analyses associated with this measure should be interpreted with care. Future research should consider refining the language used in the sympathy measure items in order to obtain a higher reliability.

While Study 2 addressed a limitation of previous research by capturing people’s behavior, there was minimal variance in the items for behavior because it involved either the presence or absence of their electronic signature for petitions about ASD (four petitions for support; four petitions for discrimination). While the current study did provide insight into

people's supportive and discriminatory behaviors toward ASD, and reveal the relationship among attributions, emotions, behavioral intentions, and behaviors, future research should explore other ways to capture behavior. Lab experiments offer one way to observe participants' behavior; the drawback with this approach is that participants may not behave as they naturally would in a lab setting. A solution to that would be to consider both verbal and nonverbal observation studies in nature settings, to identify examples and instances of support and discrimination. Social network analysis would be an interesting way to gain knowledge about ASD individuals' social networks through the strength and direction of their relational ties. The social network analysis could also offer a way to cross-compare whole family members' varying social networks and their interaction with friends, coworkers, and acquaintances, as well as people affiliated with educational, healthcare, and governmental facilities. Future research must be creative in developing ways to identify support and discrimination.

Finally, Model 3 in Experiment 3 revealed a good fit for the data only after stable attribution revealed a relationship with discriminatory behavioral intention and discriminatory behavior error terms. While this indirectly aligned with the theory, and was necessary in order to obtain a good fit for the data, it suggests stable attribution was associated with unexplained factors that influenced discriminatory behavioral intention and discriminatory behavior. Future research should continue to refine the relationship between stable attribution and discriminatory behavioral intention and discriminatory behavior.

Conclusion

News media plays an important role in societal perceptions of health issues, including the prominent disability of ASD. Individuals with ASD and their family members have reported experiencing stigmatization and discrimination in a variety of forms (Gray, 2002; Gray &

Lowery, 2000; Kogan et al., 2008). By examining how news media portrays ASD through the presence of intricate language choices, as well as the effects of these language choices on community members' perceptions of ASD, scholars can better understand the impact of these constructs and continue on the path toward verisimilitude. The study of attributions and signaling “stigma” cues of health issues such as ASD are an important line of inquiry—future research should continue to question how news media represents disabilities.

Practitioners may use this knowledge to more consciously emphasize language that promotes an agreeable social environment for individuals with ASD. Individuals with ASD and their family members share a firsthand understanding about sources of felt stigmatized, as well as reason certain decisions, rules, or policies were reinforced in educational, governmental, and health care settings. One underlying message should be taken away from this dissertation, amidst its important findings. “There is all the difference in the world between treating people equally and attempting to make them equal” (Hayek, 2014, p. 1). As referenced earlier, the ADA (1990) reinforced the shift in societal views that people with disabilities are not needy and pitiful; they are entitled to human rights and full civic and social participation (Avrami & Rimmerman, 2005; Rimmerman & Araten-Bergman, 2005). News media and the rest of society are challenged with the task of using appropriate language to discuss ASD—*while people with ASD may not be the same as everyone else, they should be treated equally.*

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APPENDIX A. CODEBOOK

[In effort to reflect news media usage of the condition of autism, the following terminology will be treated as interchangeably: autism, autism spectrum, autism spectrum disorders, ASD, ASDs]

V1. Coder

- 1 = Coder 1
- 2 = Coder 2
- 3 = Coder 3
- 4 = Coder 4
- 5 = Coder 5

V2. Article Number: _____

V3. Date Article Published: mm/dd/yy

V4. Year

- 1 = 1998
- 2 = 1999
- 3 = 2000
- 4 = 2001
- 5 = 2002
- 6 = 2003
- 7 = 2004
- 8 = 2005
- 9 = 2006
- 10 = 2007
- 11 = 2008
- 12 = 2009
- 13 = 2010
- 14 = 2011
- 15 = 2012
- 16 = 2013

V5. Name of Publication: _____

V6. Circulation:

- 1 = National
- 2 = Regional

V7. Story Headline: _____

Description of signaling “stigma” cues: Goffman defined stigma as one’s spoiled normal identity (1963). He described the emergence of stigma in two forms—discredited and discreditable (Corrigan, 2000; Goffman, 1963). While discredited stigma emerges from people seeing visible differences about a person or group of people and making judgments,

discreditable stigma arises in conjunction with disabilities like ASD where individuals cannot see visible differences that “clue” them into stigmatizing or judging another person with a disability (Corrigan, 2000). News media has the potential to communicate judgmental language by emphasizing signaling “stigma” cues, which indicate misrepresentations of ASD individuals’ disability. These cues have the potential to cue community members into thinking about ASD as a different, abnormal, and even problematic disability. In order to reliably capture the presence of signaling “stigma” cues in news media coverage of ASD, the following descriptions are given (V8-V14). They provide a guideline to identify the presence of these cues in news media stories about ASD.

V8. Labeling Cue: *Labeling cues* combine mention of ASD with negative associations through nouns and adjectives that associate the disability with abnormal qualities or characteristics. Examples of descriptive words and phrases may include: abnormal, agonizing, chasm of autism, clunky, crazy, dark world of autism, devastating, disease, epidemic, isolating, not healthy, odd, off-kilter, unusual, and victim. Words often paired with ASD that are not considered labeling cues may include: pervasive, disorder, disability, mentally retarded, and mental retardation. These types of words and phrases are not considered labeling because they are literally associated with the diagnosis of the disability. Please record the presence of this signaling “stigma” cue mentioned within each news story.

0 = Absence

1 = Presence

V9. Provide specific examples of the presence of labeling cue: _____

V10. Social Skill Deficit Cue: *Social skill deficit cues* are identified through reference to limited or impaired social interactions or difficulties/delays in verbal and nonverbal communication that preclude an individual from social engagement. Some examples of social skill deficit cues include: disrupted communication, inappropriate social skills, lower intellectual and communicative ability, needing help with social things, reference to language problems, reference to limited vocabulary, social challenges, social delays, social problems, and “stopped speaking” after a certain amount of time. Words or phrases that are not considered social skill deficit cues include: nonverbal, can’t speak, mute, barely speaks. These words and phrases are not considered to be social skill deficit cues because they are accurately associated with certain social skill abilities of the ASD diagnosis, nonverbal. Please record the presence of this signaling “stigma” cue mentioned within each news story.

0 = Absence

1 = Presence

V11. Provide specific examples of the presence of social skill deficit cue: _____

V12. Aberrant Behavior Cue: *Aberrant behavior cues* can be detected through reference to ASD individuals’ emotional or behavioral responses to external stimuli, or other symptoms that may impede one’s quality of life. Examples of aberrant behavior cues include: bolting into traffic, climbing on things (not for climbing), eating inedible objects, inappropriate actions or behaviors in general, inappropriate exposure, repetitive body movements, restricted behavioral abilities, screaming unexpectedly, self-destruction, self-injury, struggling with everyday behavior norms, thrashing, and wandering. Words or phrases that are not considered aberrant behavior

cues include any reference to a behavioral change that is *not* aberrant, deviant, or unusual. Please record the presence of this signaling “stigma” cue mentioned within each news story.

0 = Absence

1 = Presence

V13. Provide specific examples of the presence of aberrant behavior cue: _____

V14. Physical Appearance Cue: *Physical appearance cues* can be identified through references to an ASD individual’s stunted physical development, impairments, or abnormalities. Examples of physical appearance cues include: bleeding wrists, comparison to certain body types (e.g., frail, ill, high school fullback), disheveled hair, generally weird looking, mismatched clothing, scarring, shaky limbs, trembling, and unusual marks. Words or phrases not considered to be physical appearance cues include any mention of a behavioral choice that made them “look” different temporarily (e.g., taking clothes off in public; this would be considered aberrant behavior). Please record the presence of this signaling “stigma” cue mentioned within each news story.

0 = Absence

1 = Presence

V15. Provide specific examples of the presence of physical appearance cue: _____

V16. Cause Attribution: Please indicate the **primary cause** of autism according to the news story, **internal** or **external**. *Internal causes* must be linked to the cause of ASD being directly related to the human body (e.g., genetic predisposition, genetic mutation, genetic deletion, genetic duplication, copy number variant). *External causes* must be linked to the cause of ASD being related to a source *outside* the human body (e.g., environmental toxin, chemical exposure, vaccination). Given that multiple causes might be mentioned within a single news story, the primary attribution should be assessed based on the cause that is emphasized more (determined by calculating the number of sentences that include or refer to the cause).

1 = Internal cause

2 = External cause

3 = No cause mentioned

V17. Provide specific examples of the presence of the cause attribution (internal or external):

V18. Preventability Attribution: Please indicate the **preventability** of ASD according to the news story, **preventable** or **unpreventable**. News stories that frame ASD as *preventable* might reference how a decision could have been made to change the fact that an individual has to deal with the condition of ASD, or the condition of ASD could have been stopped if certain things would (or would not) have been done. ASD may also be coded as preventable if there is mention of someone or something being responsible for the condition. News stories that frame ASD as *unpreventable* might reference how no one is responsible, or nothing could have been done to change the outcome of the condition.

1 = Preventable condition

2 = Unpreventable condition

3 = No reference to preventability

V19. Provide specific examples of the presence of the preventability attribution (preventable or unpreventable): _____

V20. Stability Attribution: Please indicate the stability of ASD according to the news story, **stable** or **unstable**. News stories that emphasize individuals with ASD will probably never show signs of improvement, or there is minimal chance for the condition of ASD to improve, should be coded as **stable**. News stories that emphasize individuals with ASD may show signs of improvement, or even be cured of their symptoms of ASD when using with the right behavioral therapy and/or diet should be coded as **unstable**.

1 = Stable condition (no improvement)

2 = Unstable condition (treatable/gets better/can be cured)

3 = No reference to stability of the condition

V21. Provide specific examples of the presence of the stability attribution (stable or unstable):

APPENDIX B. PRE/POST-TREATMENT QUESTIONNAIRES

[Bolded and bracketed words indicate variable names solely for reference].

Pre-Treatment Questionnaire

V1. Please answer the following questions about your knowledge of autism. **[KNOWLEDGE]**

a. How knowledgeable are you about ASD?

None 1 2 3 4 5 6 7 8 9 Quite a Bit

b. How much do you know about the condition of ASD?

None 1 2 3 4 5 6 7 8 9 Quite a Bit

c. How much information have you been exposed to about the condition of ASD?

None 1 2 3 4 5 6 7 8 9 Quite a Bit

V2. Please indicate your level of past experience with individuals who have ASD.

[EXPERIENCE]

a. How much experience do you have with ASD individuals?

None 1 2 3 4 5 6 7 8 9 Quite a Bit

b. How frequently have you been around people who have ASD?

None 1 2 3 4 5 6 7 8 9 Quite a Bit

c. How familiar are you with ASD people?

None 1 2 3 4 5 6 7 8 9 Quite a Bit

[Randomly Assigned Stimuli Exposure—See Appendix C]

Post-Treatment Questionnaire

After reading the news story about ASD, please indicate your level of agreement with the following statements. **[MANIPULATION CHECK]**

[EXPERIMENT 1]

V3. Internal Cause

a. It appears as though ASD is mostly linked to genetics.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

b. It seems as though certain genes are the primary cause of ASD.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

c. Genes seem like the main cause of ASD.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

d. For the most part, ASD is the result of genetics.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

V4. External Cause

- a. It appears as though ASD is actually caused by exposure to environmental toxins.
Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree
- b. It seems as though exposure to environmental toxins are the central cause of ASD.
Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree
- c. Certain environmental toxins seem like the main cause of ASD.
Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree
- d. For the most part, ASD is the result of exposure to environmental toxins.
Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

[EXPERIMENT 2]

V5. Preventable

- a. The condition of ASD seems like it is preventable.
Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree
- b. It appears as though people that have ASD could have had the opportunity for a different life.
Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree
- c. For the most part, ASD is a condition that could have been prevented.
Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree
- d. It seems as though people with ASD could have had the chance to live a normal life.
Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

V6. Unpreventable

- a. The condition of ASD seems like it is not preventable.
Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree
- b. It appears as though people that have ASD could not have had the opportunity for a different life.
Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree
- c. For the most part, ASD is a condition that could not have been prevented.
Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree
- d. It seems as though people with ASD would not have had the chance to live a normal life.
Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

[EXPERIMENT 3]

V7. Stable

- a. It seems unlikely for symptoms of ASD to improve, even with the right therapy or treatment.
Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree
- b. For the most part, people with ASD will probably not get better over time.
Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

c. It appears as though ASD people are unlikely to find a therapy or treatment that will actually lessen their symptoms long term.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

d. Treatment and therapies are unlikely to improve ASD people's symptoms long term.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

V8. Unstable

a. It seems as though it is likely for symptoms of ASD to improve with the right therapy or treatment.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

b. For the most part, people with ASD will probably get better over time.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

c. It appears as though ASD people are likely to lessen their symptoms with the right therapy and treatment combination.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

d. The condition of ASD seems like it is treatable.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

[Dependent Measures]

**[POSITIVE VALANCED EMOTION VARIABLE IN EXPERIMENTS 1 & 2—
SYMPATHETIC FEELING]**

V9. After reading the news story, please indicate your level of agreement with the following statements.

a. I feel empathy toward people with ASD.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

b. I feel concern toward people with ASD.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

c. I feel sympathy toward people with ASD.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

d. I feel pity toward people with ASD.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

**[NEGATIVE VALANCED EMOTION VARIABLE IN EXPERIMENTS 1 & 2—
ANTAGONISTIC FEELING]**

V10. After reading the news story, please indicate your level of agreement with the following statements.

a. I feel annoyed that people have to deal with ASD.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

b. I feel bothered that people have to live with this condition of ASD.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

c. I feel irritated the condition of ASD exists.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

d. I am irked that individuals have to tolerate their condition of ASD.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

**[HOPEFULNESS FEELING—POSITIVE VALANCED EMOTION VARIABLE IN
EXPERIMENT 3]**

V11. After reading the news story, please indicate your level of agreement with the following statements.

a. I feel forlorn toward people with ASD.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

b. I feel downhearted toward people with ASD.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

c. I am depressed toward people with ASD.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

d. I feel sad toward people with ASD.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

**[HOPELESS FEELING—NEGATIVE VALANCED EMOTION VARIABLE IN
EXPERIMENT 3]**

V12. After reading the news story, please indicate your level of agreement with the following statements.

a. I feel optimistic toward people with ASD.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

b. I feel encouragement toward people with ASD.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

c. I am solace toward people with ASD.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

d. I feel hopeful toward people with ASD.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

V13. After reading the news story, please indicate your level of agreement with the following statements. **[SUPPORTIVE BEHAVIORAL INTENTION—EXPERIMENTS 1-3]**

a. I am willing to give support to people with ASD.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

b. I am willing to give help to people with ASD.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

c. I am willing to give time to people with ASD.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

d. I am willing to give resources to people with ASD.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

V14. After reading the news story, please indicate your level of agreement with the following statements. **[DISCRIMINATORY BEHAVIORAL INTENTION—EXPERIMENTS 1-3]**

a. I am willing to sign a petition that would limit employment opportunities for people with ASD.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

b. I am willing to sign a petition that would provide limited funding opportunities for people with ASD.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

c. I am willing to sign a petition that would provide limited marriage options for people with ASD.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

d. I am willing to sign a petition that would provide limited parental options for people with ASD.

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

V15. After reading the news story, please provide your sign of support for the following statements. Please know that your choice to support these causes will remain completely confidential, as will the rest of their survey responses. **[SUPPORTIVE BEHAVIOR—EXPERIMENTS 1-3]**

a. Please type your name in the box signifying you are willing to be contacted to give support to people with ASD.

b. Please type your name in the box signifying you are willing to be contacted to give help to people with ASD.

c. Please type your name in the box signifying you are willing to be contacted to give time to people with ASD.

d. Please type your name in the box signifying you are willing to be contacted to give resources to people with ASD.

V16. After reading the news story, please provide your sign of support for the following statements. Please know that your choice to support these causes will remain completely confidential, as will the rest of their survey responses. **[DISCRIMINATORY BEHAVIOR—EXPERIMENTS 1-3]**

- a. Please type your electronic signature in support of providing limited employment opportunities for people with ASD.
- b. Please type your electronic signature in support of providing limited funding opportunities for people with ASD.
- c. Please type your electronic signature in support of providing limited marriage options for people with ASD.
- d. Please type your electronic signature in support of providing limited parental options for people with ASD.

Demographic Questions

[DEMOGRAPHIC QUESTIONS—EXPERIMENTS 1-3]

V17. What is your biological sex?

1 = Male

2 = Female

V18. What is your age: _____

V19. What is your ethnicity?

1 = White

2 = Black or African-American

3 = Asian or Pacific Islander

4 = Mixed race

5 = Native American/American Indian

6 = Other: _____

V20. What is the last grade or class you completed in school?

1 = High school incomplete

2 = High school graduate, Grade 12, or GED certificate

3 = Technical, trade, or vocational school after high school

4 = Some college or university work, but no four-year degree

5 = College or university graduate (B.A., B.S., or other four-year degree received)

6 = Post graduate or professional schooling after college (including work towards an M.A., M.S., Ph.D., J.D., D.D.S., or M.D. degree)

V21. What is your family income before taxes in 2012?

1 = Less than \$10,000

2 = \$10,000 to under \$20,000

3 = \$20,000 to under \$30,000

4 = \$30,000 to under \$40,000

- 5 = \$40,000 to under \$50,000
- 6 = \$75,000 to under \$100,000
- 7 = \$100,000 to under \$150,000
- 8 = \$150,000 or over

V21. What is current occupation?

- 1 = Education
- 2 = Health care
- 3 = Federal government
- 4 = State government
- 5 = Independent contractor
- 6 = Non-profit
- 7 = Service industry
- 8 = Unemployed
- 9 = Other

APPENDIX C. EXPERIMENTAL STIMULI

[Information within [] was not seen by participants. Each condition was formatted as an online news story appearing on a fake Washington Post website: <http://www.washingtonpost-health-autism-news.vpweb.com/>]

Experiment 1: Internal Cause Condition [Length: 501 words]

Human Genes: The “Root” Cause of ASD [Manipulated Title]

By Michael Jamison, Washington Post Staff

Washington, D.C., November 30, 2013— The number of cases of autism spectrum disorder (ASD) is growing at a rapid rate, according to a recent report from the CDC.

Currently 1 in 88 children are diagnosed with some form of this disorder.

ASD is a neurological disorder that can affect the development of a child’s communication abilities, social interaction skills, and behavioral tendencies.

The condition is known as a wide spectrum disorder because the symptoms differ across almost every individual suffering.

Several months ago the DSM revised the diagnostic tool for autism and related diagnoses—now all related diagnoses will fall under ASD.

There will no longer be sub-diagnoses such as Autistic Disorder, Asperger Syndrome, Pervasive Developmental Disorder Not Otherwise Specified, and Disintegrative Disorder.

[Manipulation begins here again]

Medical experts are now certain that genes are the primary cause of ASD—a series of genetic deletions or duplications is directly related to ASD symptoms.

“Certain genetic deletions or duplications, called copy number variants (CNVs), appear to be linked to symptoms of ASD,” said Dr. Shanelle Sonoma, Disability Specialist at Mayo Medical Clinic. “Chromosome 7, 15, 16, 17 and Neurexin 1 are five common regions that, if mutated, will cause ASD. However there are approximately 130-234 CNV regions that could also be linked to ASD.”

People with ASD who have *duplications* in chromosome 7 are often anti-social or lack social skills. Yet people with *deletions* in chromosome 7 actually show signs of Williams syndrome, a genetic disorder where people are highly social and over friendly with strangers, explains Dr. Sonoma.

“An enzyme called TOP3B has been found to play a key role in the emergence of genetic mutations commonly seen in people with ASD, as well as schizophrenia, and other abnormal brain development,” says Dr. Hans Brouis, Pediatrician at Sanford Medical Clinic.

Autism can also be inherited—parents who show “autistic tendencies” are 75% more likely to have an ASD child than those who do not, said Gretchen Landigran, Director of Mount Sinai Health Center in New York.

“ASD tends to run in families,” said Landigran. “The younger siblings of children with ASD have a high risk of developing the disorder.”

ASD is even more common in twins than the general population. A recent study compared cases of ASD between identical twins. Approximately 90% of identical twins (meaning they share the gene structure) were both diagnosed with ASD. Of the identical twins that did not share the diagnosis, the ASD twin was typically high functioning.

Whether ASD is the result of a genetic mutation, or simply inherited, consistent research findings are clear—ASD is linked to genes, says the CDC.

“The cause of ASD manifests within human genes. The condition of ASD should never have become the prevalent condition it is today,” says Landigran. “People have ignored consistent evidence that ASD is genetic, and thus perpetuated the condition all together.”

[Manipulation ends here]

Most doctors and parents can identify the hallmark signs of autism by 18 months. Some can even identify symptoms as early as 6 months.

###

Experiment 1: External Cause Condition [Length: 508 words]

Environmental Toxins: The Actual Cause of ASD [**Manipulated Title**]

By Michael Jamison, Washington Post Staff

Washington, D.C., November 30, 2013– The number of cases of autism spectrum disorder (ASD) is growing at a rapid rate, according to a recent report from the CDC.

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[Manipulation begins here again]

Medical experts are now certain environmental toxins are the primary cause of ASD—exposure to environmental toxins at a young age is directly related to ASD symptoms.

Recent consistent findings suggest environmental toxins trigger ASD.

“Exposure to environmental toxins is the trigger of ASD,” said Dr. Shanelle Sonoma, Disability Specialist at Mayo Medical Clinic. “Exposure to environmental toxins cause the wide-ranging symptoms associated with ASD.”

Environmental toxins shed light on the full story about autism—the prominent disability rates appear to have increased far faster than our genes can evolve. Genes are not the cause, Dr. Hans Brouis, Pediatrician at Sanford Medical Clinic.

Doctors from Mount Sinai Health Center in New York emphasize the key role of specific toxic chemicals that cause ASD and other neurodevelopmental disorders.

“A large number of chemicals that are used frequently have not undergone even minimal assessment of potential toxicity,” said Gretchen Landigran, Director of Mount Sinai Health Center in New York.

Landigran shared a list of 10 chemical/environmental toxins that children are commonly exposed to on a day-to-day basis:

- Lead (e.g., paint, dust, drinking water, older toys, some inks)
- Methylmercury (released in the air and water from industrial emissions; also a form of mercury found in some fish)
- PCBs (caulk used in building materials and some schools)
- Organophosphate Pesticides (used on most fruits and vegetables in the US)
- Organochlorine Pesticides (also used on most fruit and vegetables in the US)
- Endocrine Disruptors
- Automotive Exhaust (carbon monoxide, nitrogen dioxide, and sulphur dioxide)
- Brominated Flame Retardants (fireproofing chemicals added to pillows, vehicle seats, fabrics, and some electronics—including computers)
- Perfluorinated Compounds (water-resistant clothing, non-stick cookware, and microwave popcorn bags)

Chemical/environmental toxins leads to disabilities such as ASD—it is clear that some level of exposure to environmental toxins trigger the condition, says the CDC.

“It is tragic that individuals must live with ASD just because we do not have enough knowledge about the negative impacts of everyday chemicals,” says Landigran.

ASD is a confusing disability caused by external factors such as toxins and chemicals.

[Manipulation ends here]

Most doctors and parents can identify the hallmark signs of autism by 18 months. Some can even identify symptoms as early as 6 months.

###

Experiment 2: Preventable Condition [Length: 513 words]

A Time to Act: People Need to Take the Necessary Steps to Prevent ASD **[Manipulated Title]**
By Michael Jamison, Washington Post Staff

Washington, D.C., November 30, 2013– The number of cases of autism spectrum disorder (ASD) is growing at a rapid rate, according to a recent report from the CDC.

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The condition is known as a wide spectrum disorder because the symptoms differ across almost every individual suffering.

Several months ago the DSM revised the diagnostic tool for autism and related diagnoses—now all related diagnoses will fall under ASD.

There will no longer be sub-diagnoses such as Autistic Disorder, Asperger Syndrome, Pervasive Developmental Disorder Not Otherwise Specified, and Disintegrative Disorder.

[Manipulation begins here again]

Recent research has consistently confirmed that ASD is preventable. Both society and individuals are responsible for taking steps to minimize the increasing number of ASD cases.

“The fact that cases of ASD continue to increase at such a rapid rate is unacceptable,” says Dr. Shanelle Sonoma, Disability Specialist at Mayo Medical Clinic. “We need to take precautions to guard against this serious disorder.”

Companies should be required to be ethical when reporting products that use toxic chemicals, says Dr. Hans Brouis, Pediatrician at Sanford Medical Clinic.

“A large number of chemicals that are used in everyday products have not undergone even minimal assessment of potential toxicity,” said Gretchen Landigran, Director of Mount Sinai Health Center in New York.

Landigran listed several chemicals children are exposed to through common household products: automotive exhaust, organophosphate pesticides used on fruit and vegetables, and brominated flame retardants used to fireproof chemicals added to pillows, vehicle seats, fabrics, and computers.

Parents likely put their children in contact with household items such as these on a daily basis, completely unaware of the dangers associated with exposure.

“Parents can reduce the risk of their child being exposed to products with toxic chemicals such as these,” says Landigran. “Awareness that certain precautions can and should be taken to prevent ASD is key.”

“Even before the child is born, pregnant mothers could choose to take prenatal vitamins and avoid situations of extreme stress in order to avoid complications during pregnancy,” said Dr. Brouis.

Genetic screening is now easily accessible for couples considering having children. If couples are aware of a genetic predisposition to ASD they could then be prepared to use gene therapy techniques, said Dr. Brouis.

“Couples over the age of 40 can also choose not to have children,” said Dr. Brouis. “Research has consistently shown that older couples are more at risk for having a child with ASD.”

ASD is completely preventable as long as society makes ethical decisions to share important information and parents make responsible choices to minimize risk, says the CDC.

“People need to realize that ASD should never have become so prevalent and action needs to be taken to slow the growth rate,” says the CDC.

[Manipulation ends here]

Most doctors and parents can identify the hallmark signs of autism by 18 months. Some can even identify symptoms as early as 6 months.

###

Experiment 2: Unpreventable Condition [Length: 507 words]

A Tragic Condition: Currently No Clear Strategies Exist to Protect or Guard Against ASD
[Manipulated Title]

By Michael Jamison, Washington Post Staff

Washington, D.C., November 30, 2013— The number of cases of autism spectrum disorder (ASD) is growing at a rapid rate, according to a recent report from the CDC.

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Several months ago the DSM revised the diagnostic tool for autism and related diagnoses—now all related diagnoses will fall under ASD.

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[Manipulation begins here again]

At the current state, research consistently suggests ASD simply cannot be prevented. With uncertainty about the cause of ASD, no effective precautions can be taken and people are at a loss about how to minimize the risk.

“The increasing number of individuals diagnosed on autism spectrum is tragic. Not a single case of ASD has been prevented,” says Dr. Shanelle Sonoma, Disability Specialist at Mayo Medical Clinic. “American families deserve better.”

Researchers have identified over 200 gene sequences that, if mutated, may provide a link to about 1% of ASD cases, says Dr. Hans Brouis, Pediatrician at Sanford Medical Clinic.

“Those statistics provide little reason to believe that most ASD cases might stem from gene mutations,” says Dr. Brouis. “Additionally, while we can recommend couples do genetic screening before becoming parents, it is really a useless preventative because we cannot even give them a clear answer about whether they are at risk for having a child on the autism spectrum.”

The lack of clarity regarding potential toxic chemicals that are linked to ASD cases only adds to the uncertainty and lack of direction about prevention and risk minimization against the condition.

“It is unclear whether a larger number of daily household products may potentially be toxic,” said Gretchen Landrigan, Director of Mount Sinai Health Center in New York. “However, no direct link has been made between exposure to frequently used household items and ASD. Therefore it is impossible to minimize the risk when again there is no evidence of what the risk is.”

“I share sentiments, along with many other medical practitioners, for individuals diagnosed with ASD, as well as their family members,” says Dr. Shanelle Sonoma, Mayo Medical Clinic. “They face a multitude of hardships because of the complex nature of the condition.”

ASD has been deemed a national public health crisis with no effective means to prevent the condition, says the CDC.

As long as ASD remains unpreventable, members of society remain anxious and uncertain that may be at risk of having a child diagnosed with ASD, and ASD individuals and their family members are left wondering why, as they navigate educational, health care, and financial issues.

[Manipulation ends here]

Most doctors and parents can identify the hallmarks of autism by 18 months. Some can even identify symptoms as early as 6 months.

###

Experiment 3: Stable Condition [Length: 507 words]

A False Hope: Consistent Evidence Suggests ASD Symptoms are Unlikely to Improve, and No “Cure” Exists **[Manipulated Title]**

By Michael Jamison, Washington Post Staff

Washington, D.C., November 30, 2013— The number of cases of autism spectrum disorder (ASD) is growing at a rapid rate, according to a recent report from CDC.

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ASD is a neurological disorder that can affect the development of a child’s communication abilities, social interaction skills, and behavioral tendencies.

The condition is known as a wide spectrum disorder because the symptoms differ across almost every individual suffering.

Several months ago the DSM revised the diagnostic tool for autism and related diagnoses—now all related diagnoses will fall under ASD.

There will no longer be sub-diagnoses such as Autistic Disorder, Asperger Syndrome, Pervasive Developmental Disorder Not Otherwise Specified, and Disintegrative Disorder.

[Manipulation begins here again]

ASD is a fairly permanent condition. Researchers have examined multiple treatments and therapies, resulting in little evidence that any of these approaches have positive long-term effects.

Parent and celebrity testimonials about how they “cured” their child’s ASD creates a sense of false hope—the reality is that no cure exists.

“It is uncommon for patients with ASD to find a treatment program or therapy that produces long-term results,” said Dr. Shanelle Sonoma, Disability Specialist at Mayo Medical Clinic. “Some individuals with ASD may find a therapy or treatment that appears to cause temporary symptom improvements, but consistently this occurrence is brief.”

“Parents and family members of ASD individuals should not hope for the condition to eventually go away,” says Dr. Sonoma. “It creates an ongoing tension for the family throughout their lifespan; it is not healthy.”

“Creating false hope sends the wrong message to parents,” says Dr. Hans Brouis, Pediatrician at Sanford Medical Clinic. “They believe if they commit every bit of time, money, career, and personal life goals, that recovery might be possible.”

“Who wouldn’t give almost anything to enable their ASD child to lead a normal life?” asks Dr. Brouis.

“A second problem with buying into the idea that ASD is treatable is that parents act like there is something wrong with their ASD child as they try to “save” them,” says Gretchen Landigran, Director of Mount Sinai Health Center in New York. “Frankly, this teaches children with ASD that there is actually something wrong with them,” says Landigran.

ASD individuals may benefit slightly from fad “remedies” that alleviate symptoms initially for a few days, but the long-term symptoms of the disorder do not change, says Landigran.

Symptoms of ASD are unlikely to improve, says the CDC.

In addition to the unlikely chance for improvement, behavioral interventions and diets are costly and time consuming, and the chance of finding the right combination for each particular ASD individual is nearly impossible, says the CDC.

According to the DSM 5 diagnostic tool for ASD, it is not likely for a diagnosed individual to experience symptom changes so drastically that they no longer fall under the label of the autism spectrum.

[Manipulation ends here]

Most doctors and parents can identify the hallmarks of autism by 18 months. Some can even identify symptoms as early as 6 months.

###

Experiment 3: Unstable Condition [Length: 510 words]

Treating Autism: With the Right Therapy and Diet ASD can be Treated, Even Cured
[Manipulated Title]

By Michael Jamison, Washington Post Staff

Washington, D.C., November 30, 2013 – The number of cases of autism spectrum disorder (ASD) is growing at a rapid rate, according to a recent report from the CDC.

Currently 1 in 88 individuals are diagnosed with some form of this disorder.

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The condition is known as a wide spectrum disorder because the symptoms differ across almost every individual suffering.

Several months ago the DSM revised the diagnostic tool for autism and related diagnoses—now all related diagnoses will fall under ASD.

There will no longer be sub-diagnoses such as Autistic Disorder, Asperger Syndrome, Pervasive Developmental Disorder Not Otherwise Specified, and Disintegrative Disorder.

[Manipulation begins here again]

Research confirmed symptoms of ASD can in fact improve. With the right approach, individuals with ASD and their family members can work to improve and even “cure” ASD.

Behavioral interventions are one of the most effective ways to treat ASD. These interventions have proven to produce the most signs of improvement if implemented before age 3.

"What we're finding is that the earlier start and the more time you spend, the more successful these therapies are," says Dr. Shanelle Sonoma, Disability Specialist at Mayo Medical Clinic. "There is also evidence that behavioral intervention for older ASD individuals also produces great improvement."

Symptoms of ASD tend to improve faster if parents and/or caregivers reinforce behavioral therapy at home, says Dr. Hans Brouis, Pediatrician at Sanford Medical Clinic. "Through very simple exercises, a parent can help teach a child joint attention, like looking when you gleefully point to something."

Another way to improve symptoms of ASD, or even cure the condition, is the gluten-free/casein-free (GFCF) diet. This diet involves elimination of all foods containing gluten (found in wheat, barley, and rye) and casein (found in milk and dairy products) from daily intake.

The benefit of the GFCF diet is based on a theory that ASD individuals may have an allergy or high sensitivity to foods containing gluten or casein, says Gretchen Landigran, Director of Mount Sinai Health Center in New York.

"ASD individuals process peptides and proteins in foods containing gluten and casein differently than other people do," says Landigran. "The difference in processing may aggravate ASD symptoms."

The brain treats these proteins like false opiate-like chemicals. The reaction to these chemicals then leads an ASD individual to act in a certain way. The idea behind the use of this diet is to reduce symptoms and improve social and cognitive behaviors, as well as communication ability.

ASD can improve—with the right treatments and diets symptoms of the condition will eventually fade, says CDC.

The DSM 5 diagnostic tool for ASD supports this notion. To be diagnosed as autistic an individual must show current symptoms of the condition. As symptoms fade and disappear, individuals who were once diagnosed ASD can have the label removed.

[Manipulation ends here]

Most doctors and parents can identify the hallmarks of autism by 18 months. Some can even identify symptoms as early as 6 months.

###